

TPI WOOD & TPI MARBEL

Ivory Carara
ไอวอรี่ คาราร่า

Brown Ash
แอส

White Pearl
ไวท์พีร์ล



บริษัท ทีพีโอ โพลีน จำกัด (มหาชน)
TPI POLENE
Public Company Limited



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Investors can access the information about the Company,
from the Annual Report (form 56-1)
through the website at www.sec.or.th

Message from the Board of Directors

To: Shareholders

Core Policy of TPI Polene Plc and its subsidiaries Towards Sustainable Development (ESG & Bio Circular-Green Economy - BCG For Sustainability)

TPI Polene has invested heavily during the past ten years in the development of our cement business to successfully manufacture product innovations, such as concrete roof tiles, floor panels, and TPI decorative walls, and the consistent development of DIY products, and cement paint as well as the use of recovering waste heat and municipal waste as fuel to generate electricity. This has led to the successful listing of TPI Polene Power Plc, the subsidiary company, on the Stock Exchange of Thailand and the consistent generation of revenue for the Group. The Company also manufactures and distributes a variety of organic agricultural products (specially manufactured for plants and livestock) and healthcare products, which have been tested and certified by the Faculty of Medicine of Siriraj Hospital and the Academic Service Center of Chulalongkorn University, that they are effective in combating pathogens such as viruses. This has helped increase employees' efficiency in the workplace, allowing them to work comfortably in good health in a workplace that is free from the COVID-19 pandemic. This has also enhanced the sustainable growth of the Company and our employees.

With a strong commitment to improve technological efficiency and innovate to continuously tackle challenges in the future, TPI Polene has become the first cement manufacturer in the country to develop energy technology using waste fuels instead of coal, aiming to reduce cement production costs while reducing carbon dioxide emissions, the primary cause of global warming. Under the concept of CO2 reduction and zero waste, this is part of our policy to employ an efficient and environmentally-friendly resource to increase our competitive advantages and to be at the forefront in the global industry, enabling the Company to consistently generate profits.

TPI Polene Group adheres to a policy of driving the economy towards sustainable development (ESG and Bio Circular-Green Economy-BCG) by focusing on balanced growth in all dimensions. By adhering to Environmental, Social and Governance (ESG) criteria and by embracing the Bio Circular Green Economy as a sustainable business model under the standards of good corporate governance, TPI Polene Group aims to strengthen the sustainable growth of the Company to become an internationally trustworthy company.

The year 2020 has been a challenging time for TPI Polene Group as a result of the global outbreak of COVID-19, including in Thailand. As a result, the economy has shrunk both domestically and internationally. Preventive measures to control outbreaks as well as the closure of the country by putting travel restrictions in place, led to the disruption of the global economy and caused a severe contraction in trade volumes and in the global economy as a whole. In addition, the domestic drought situation has affected agricultural revenue, and a slowdown in the export sector was affected by the consistent strengthening of the Baht. As a result, employment has decreased and purchasing power in the country has deteriorated and has had a severe impact on the overall economy in Thailand.

TPI Polene Group's business diversification, which complies with the policy of ESG and Bio Circular-Green Economy-BCG, comprising our cement, plastics, and power plant businesses, has created an appropriate balance for the Company's business operations. As a result, TPI Polene Group is capable of generating profitability and can continuously increase its cash flow base even in circumstances in which the COVID-19 pandemic significantly impacts people's lives worldwide. With the full cooperation of all levels of the Company's staff and the proactive management style of the Management team, TPI Polene Group's operating results continued to grow at a satisfactory level in the midst of a recession and created sustainable growth of income in all circumstances.

Operating Results in 2020

In 2020, the Company and its subsidiaries reported normal operating profit of Baht 4,379 million compared with Baht 2,338 million in 2019, an increase of Baht 2,040 million or 87.26%. In 2020, the Company and its subsidiaries registered a profit of Baht 2,839 million for the year compared with a profit for the year 2019 of Baht 2,765 million, an increase of Baht 75 million or 2.70%.

Profit for the year of Baht 2,839 million in 2020 was comprised of normal operating profits of Baht 4,379 million, net foreign exchange losses of Baht 12 million, impairment loss of assets of Baht 1,602 million, and a tax income of Baht 74 million. Profit for the year 2019 of Baht 2,765 million comprised a normal operating profit of Baht 2,338 million, net foreign exchange gains of Baht 405 million, and a tax income of Baht 22 million.

Thailand's first cement plant, using waste fuel to replace coal

In a time of business challenges amidst the Covid-19 virus outbreak, TPI Polene Group has continuously developed and improved the efficiency of cement plants, as well as improved cement production machinery to replace coal fuels to some extent, which can reduce production costs and increase competitiveness in the cement business. This development also preserves natural resources and the environment, and can reduce the country's waste pollution through the cement production process under the concept of zero waste. TPI Polene is the first cement manufacturer that uses waste fuels instead of coal. The project is expected to be completed in 2021-2022, which will allow the Company to reduce the amount of its carbon dioxide emissions by about 6.5 million tons per year, thereby

reducing global warming problems and solving the problem of 2.7 million tons of solid waste annually. This project operates in accordance with the ESG (Environmental, Society and Governance) principles.

In addition, the Company also produces fiber cement substitutes for its wood product category and marble, etc., which reduces deforestation, and the products have been exported overseas, creating an influx of foreign currency.

Driving the Economy towards sustainable development (ESG and Bio Circular-Green Economy)

The Company has a policy to drive the economy towards sustainable development within TPI Polene Group, using competitive, global innovations. This creates a distribution of income to communities through environmental protection and sustainable development towards the circular economy model, which focuses on economic transformation with the greatest use of resources to implement the Green Economy and reduces our environmental impact at the source. This leads to low carbon production and the reduction of greenhouse gas emissions that cause global warming by using waste fuel energy in the production process and using biotechnology to create value-added to the products. Meanwhile, the Company also supports the agricultural sector by creating a bio economy through the production of bio-organic fertilizers that are safe for consumers while reducing costs for farmers.

Three key principles, the Circular Economy, the Green Economy and the Bio Economy are the driving forces for the economy to move towards sustainable development.

In addition, the Company places a great emphasis on the social dimension and good corporate governance by adhering to a code of conduct in pursuing its business operations, preventing conflicts of interest, following an anti-corruption policy, mitigating corporate risks, and conducting business with fairness to all stakeholders. This includes: focusing on the health and safety of employees and stakeholders with a strong commitment to improving and preventing all existing hazards, and to be in compliance with human rights principles, which covers the employment and the treatment of employees and staff, so that all employees and staffs feel bound as a family in the organization. In addition, the Company is committed to cooperating with all trade partners to be in accordance with the sustainable practices of its partners.

Manage liquidity to be at a high level and financial costs to be at an appropriate level

TPI Polene Group places an importance on a high level of liquidity management to cope with high volatility of both the global and domestic economies, and to manage financial costs to be at an appropriate level to comply with the Company's investment plans. Concurrently, the Company consistently maintains financial stability to achieve its business goals and manage financial liquidity to an appropriate level. The key performance indicator (KPI) is controlled to serve as a framework for implementing the target.

Develop healthcare and TPI hygiene products from natural extracts

Amidst the COVID-19 pandemic, the Company has adapted to the new normal situation by offering high quality chemical-free hygiene products as follows:

1. Bio Knox powder, a high quality natural calcium and vitamin C supplement. It is effective in destroying the SARS-CoV2 virus. The production process of this powder is clean, modern and safe for consumers.
2. Microme Knox solution and Microme Knox for spraying in residential areas to reduce the amount of pathogens caused by bacteria and viruses.
3. Printemp Marie Rose Mouthwash, Ginger & Mint flavors

The above products have been tested and certified by the Faculty of Medicine, Siriraj Hospital, and the Academic Service Center of Chulalongkorn University, that they are effective in destroying viruses including SARS-CoV2, PRRS, PDCoV, PCV2 and RVA, etc.

In addition, biosan products are used to improve water quality in the environment as a concentrate to help recover wastewater that has a high content of organic substances, fats and oil. Biosan products were tested and affirmed by the Academic Service Center of Chulalongkorn University that they help reduce organic substances in COD and BOD form in wastewater. In addition, there are also products used for cleaning vegetables, fruit, and meat for cooking, which are classified as environmentally-friendly innovations. These products will benefit humanity even if they are not very profitable but they are still in being researched and developed.

During the COVID-19 pandemic, the Company took various measures to prevent potential risks by placing an emphasis on the safety and healthcare of its employees. One of the measures was the temperature monitoring and screening of visitors at all locations, including at both head offices and plants. Alcohol gels are adequately provided for employees to wash their hands. In addition, Microme Knox solutions were regularly used for disinfectant spraying in the workplace. The Company's Bio Knox powder, which is effective in combating pathogens such as viruses, was distributed to employees to drink to ensure their safety and their confidence in the Company and in their fellow employees. The Company also implemented a plan for employees to "work from home", and introduced social distancing measures by using video conferences and online communication technology to reduce the risk of spreading infections.

Develop Online Marketing Platform

Amid the challenges of innovation and digital technology that have been evolving and constantly changing, TPI Polene Group has established adaptive approaches to support changing consumer behaviors based on technological advancements by developing online ordering and online payment platforms. It is one of our effective channels for consumers to access our products and make it more convenient to order products from the Company. This includes the development of varieties of DIY construction materials, such as ready-mixed dry concrete, dry mortar, waterproof cement, grout mortar, fast setting mortar, waterproof cement paint, and cement paint on walls etc.

Success of the Offering for Sale of Baht 19,600 million Debentures

In 2020, TPI Polene Group (the Company and its subsidiaries) successfully completed fundraising through the issuance and sale offering of debentures in a total amount of Baht 19,600 million, with the TRIS affirmed credit rating of such debentures at BBB+, with a “stable” outlook. The proceeds from the fundraising were utilized mainly to refinance mature debentures and the remaining funds were used to invest in the purchase of machinery and equipment for production efficiency improvements in the cement business and as working capital for business operations.

Consistently awarded the Industrial certificates

TPI Polene Group continues to focus on creating sustainable public well-being in surrounding communities and the environment. The current achievements in the business operations of the Group have been reflected in the Company's awards and certificates in 2020, such as the Industrial Standard for Corporate Social Responsibility Award for sustainable society and surrounding communities.

The Company's current success has been one of our proudest achievements as a Thai Corporation to be able to be competitive internationally. On behalf of the Company, the Company's Board of Directors would like to take this opportunity to thank all related parties for a well-coordinated effort and their ongoing trust in the Company to create unswerving progress for the organization. It is a major goal of the Management team and all levels of the Company's staff to move the business forward to overcome obstacles, to achieve the goal of creating stability for the organization, and to enhance the economic strength of the country. The Company realizes the importance of conducting business operations by emphasizing the balanced consideration of all related parties, and the fair treatment of all parties concerned through a policy of reducing emissions to solve global warming, to consistently protect the surrounding environment, and to further enhance the sustainable growth of the country.

Sincerely Yours,



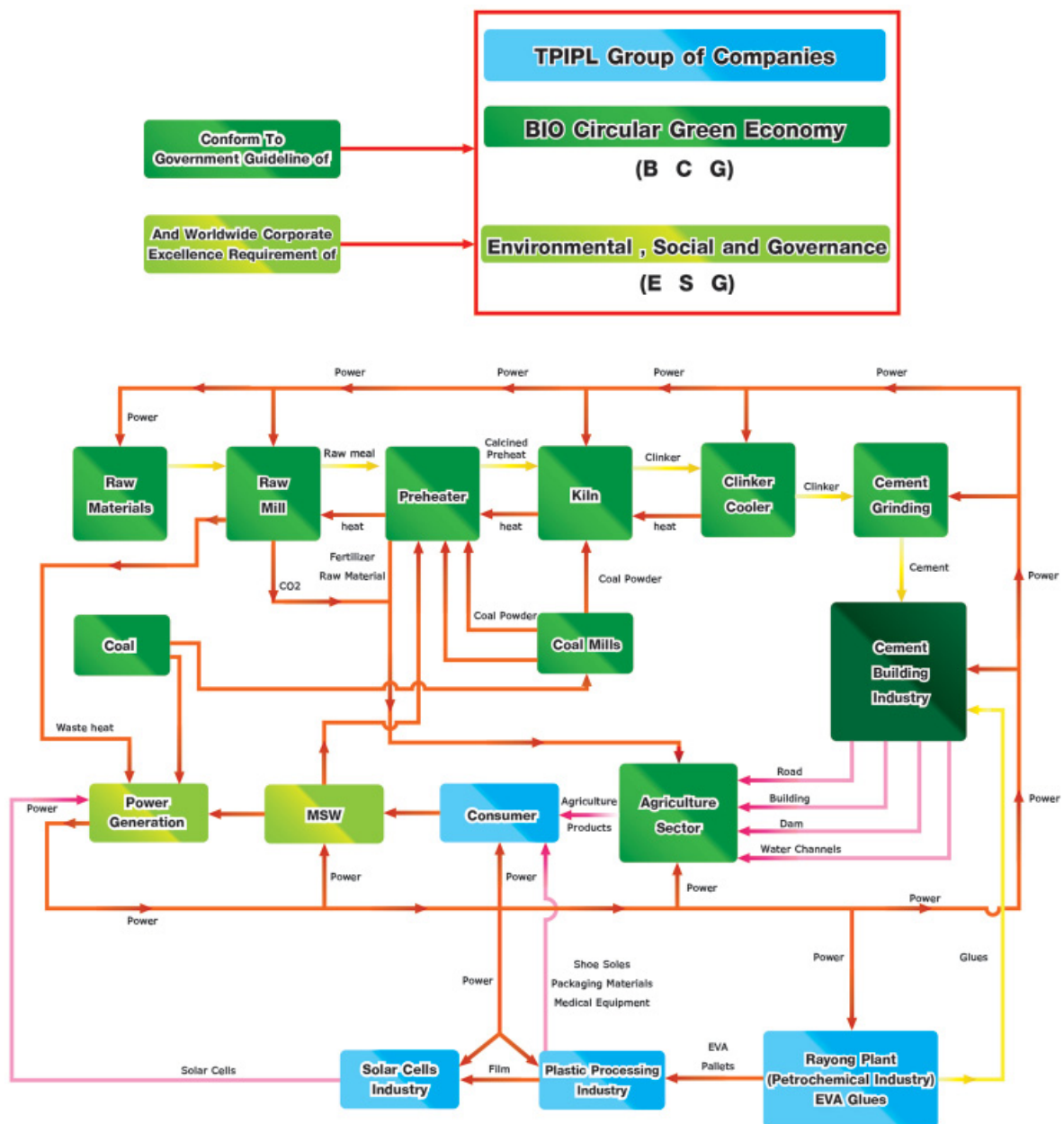
Mr. Khantchai Vichakkana
Chairman of the Board and Independent Director



Mr. Prachai Leopairatana
Chief Executive Officer

Core Policy of TPIPL Group of Company

- To provide service to customers to maximize the use of products
- Use of waste products for renewable benefits.



Audit Committee's Report for 2020

To: Shareholders:

Dear Sirs,

The Audit Committee of TPI Polene Public Company Limited consists of 4 independent directors, who are all qualified with knowledge of finance, law and management administration: namely, Mr. Supoj Singsane as the Chairman of the Audit Committee; Mr. Manas Sooksmarn, Mr. Pises Iamsakulrat and Mr. Thavich Taychanavakul as Audit Committee members; with Mr. Nitisit Jongphitakratana, the Corporate Secretary, as Secretary to the Audit Committee. All Audit Committee members possess appropriate qualifications and are, in all aspects, in compliance with the rules and regulations imposed by the Stock Exchange of Thailand.

The Audit Committee has fully performed its duties and responsibilities to review and evaluate internal control systems, disclosure of Company information, and to review implementation of the provisions of related governing laws, as well as any other important tasks. In 2020, the Audit Committee convened 5 meetings:

1. To review and to evaluate internal control systems.

The Company and its subsidiaries have appropriate internal control systems and have operated the business efficiently and effectively under appropriate and sufficient internal controls, as supported by the operational performance report. The Company and its subsidiaries have internal controls and risk management systems that can protect against potential risks to the Company and to all related parties. The systems are in place to ensure that any mistakes and irregularities will be identified in due course; and that financial reports are accurate, adequate and reliable; and the assets used by the Company and its subsidiaries, benefit all parties as well as shareholders. In addition, the Company has performed in compliance with the principles of good corporate governance and has embraced the Code of Conduct as a policy for all employees to follow, by emphasizing the balanced consideration of all related parties, fair treatment to all parties concerned, including shareholders, suppliers, contractors, and the community as a whole. The Company also realizes the importance of public well-being creation and environmental conservation and fosters the development of all our staff to expand their knowledge so as to become a knowledge organization. This will further enhance our long-term development and create sustainable growth for the Company.

2. To review the disclosure of all relevant information for investors.

The Company has a policy of disclosing all relevant information for investors, such as connected transactions and any other transactions that might affect the interests of related parties. The Company always discloses accurate, reliable and relevant information on a timely basis.

3. To review and to ensure that the Company performs in compliance with all regulations and related governing laws.

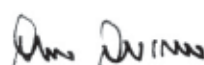
The Company has a clear policy to comply with all regulations and related governing laws, and codes of conduct, to protect against the use of insider information. As announced in the Company's Rules and Regulations, any misuse of internal information shall be subject to disciplinary action, including dismissal. The Company supervises submission by the Management of reports of their shareholding in the Company to comply with related governing laws. The Company realizes the importance of information disclosure, including financial statements and other reports, and ensures that they are complete, accurate, reliable and timely.

4. To select, nominate, and propose the remuneration of the statutory auditors of the Company for the year 2020.

The Audit Committee has taken into consideration the independence, performance, experience and an appropriate remuneration of auditors. The Audit Committee has passed a unanimous resolution to propose to the Company's Board of Directors for consideration and to propose to the shareholders' meeting to consider and approve the appointment of Mr. Ekkasit Chuthamsathit, CPA registration no. 4195 or Mr. Boonyarit Thanormcharoen, CPA registration no. 7900 or Mr. Natthapongse Thantijattanon, CPA registration no. 8829, KPMG Phoomchai Audit Limited, to be the statutory auditors of the Company for the year 2020.

The Audit Committee considers that in the previous year, the Board of Directors as well as the Management of the Company, was in complete compliance with the principles of good corporate governance. They performed their duties and responsibilities ethically, with integrity, and in a professional manner, to achieve the objectives of the Company. In addition, a product quality system, in compliance with international standards and applicable laws, has been developed. The Audit Committee recognizes that the Company is committed to social and environmental responsibility. The Company has also prepared financial reports in compliance with generally accepted accounting principles, with an adequate disclosure of information, internal control and audit systems, and is able to ensure product quality and good corporate governance, without any material deficiencies.

On behalf of the Audit Committee,



Mr. Supoj Singsane

Chairman of the Audit Committee

Corporate Profile

Company's Name	: TPI Polene Public Company Limited
Abbreviation in the SET	: TPIPL
Registration Number	: 0107537000564 (formerly Bor. Mor. Jor. 303)
Nature of Business	: Manufacture and sale <ul style="list-style-type: none"> - cement, cement mortar, clinker - ready-mixed concrete - LDPE/EVA plastic resin - Electricity - solar film, EVA emulsion, EVA powder - concrete roof tile, fiber cement and lightweight Concrete - industrial waste disposal - organic fertilizer and health products - Ammonium Nitrate and Nitric Acid - drinking water, etc.
Registered Capital	: Baht 23,805,500,000 Consisting of 23,805,500,000 ordinary shares, at the par value of Baht 1 each.
Paid-up Capital	: Baht 19,180,500,000 Consisting of 19,180,500,000 ordinary shares, at the par value of Baht 1 each.
Accounting Period	: January 1 - December 31
Location	
Head Office Location	: 26/56 Chan Tat Mai Road, Thungmahamek, Sathorn, Bangkok 10120
Tel. Number	: +66 (0) 2213-1039-49, 285-5090-9
Fax Number	: +66 (0) 2213-1035, 213-1038
Web Address	: http://www.tpipolene.co.th
Cement Plant/Power Plant	: 299 Moo 5, Mittraparp Road, Tambol Tubkwang, Amphur Kangkhoy, Saraburi 18260
Cement Mortar Plant	
Lightweight Concrete Plant	
Pyrolysis and RDF Plant	
Tel. Number	: +66 (0) 3633-9111
Fax Number	: +66 (0) 3633-9228-30
LDPE/EVA Plant	: 299 Moo 5 Sukhumvit Road, Tambol Chuengnoen, Amphur Muang, Rayong 21000
Tel. Number	: +66 (0) 3861-1333
Fax Number	: +66 (0) 3880-2568
Concrete Roof Tiles and Fiber Cement Plant	: 77 Moo 7, within CRT Plant sub-road from Sai Ban Kork Street, Banlarkkaopoon and Highway no.1014, Tambol Ban Kang, Amphur Chaloem Phrakiat, Saraburi 18260
Tel. Number	: +66 (0) 3667-0370-5
Fax Number	: +66 (0) 3667-0377
Solar Film Plant	: 49/1 Moo 1, Phichainarong Songkham Road, Tambol Nachong, Amphur Muang Saraburi, Saraburi 18260
Tel. Number	: +66 (0) 3673-1724
Ammonium Nitrate and Nitric Acid Plant	: 140/7 Moo 4 Sukhumvit Road, Tambol Tapong, Amphur Muang, Rayong 21000
Tel. Number	: +66 (0) 3866-4724-7
Investors Relation Unit:	
Tel. Number	: +66 (0) 2213-1039 ext.12983 and 12985
Other Relevant Information	
Share Registrars	: Thailand Securities Depository Company Limited
Office Location	: The Stock Exchange of Thailand, 93 Rajadapisek Road, Khwang Dindaeng, Dindaeng, Bangkok 10110
Tel. Number	: +66 (0) 2009-9000, call center +66 (0) 2009-9999
Fax Number	: +66 (0) 2009-9991
Auditor	
Statutory Auditor	: KPMG Phoomchai Audit Limited
Address	: 195 Empire Tower, Floor 48-50, South Sathorn, Yannawa Subdistrict, Sathorn District, Bangkok 10120
Tel. Number	: +66 (0) 2677-2000
Fax Number	: +66 (0) 2677-2222

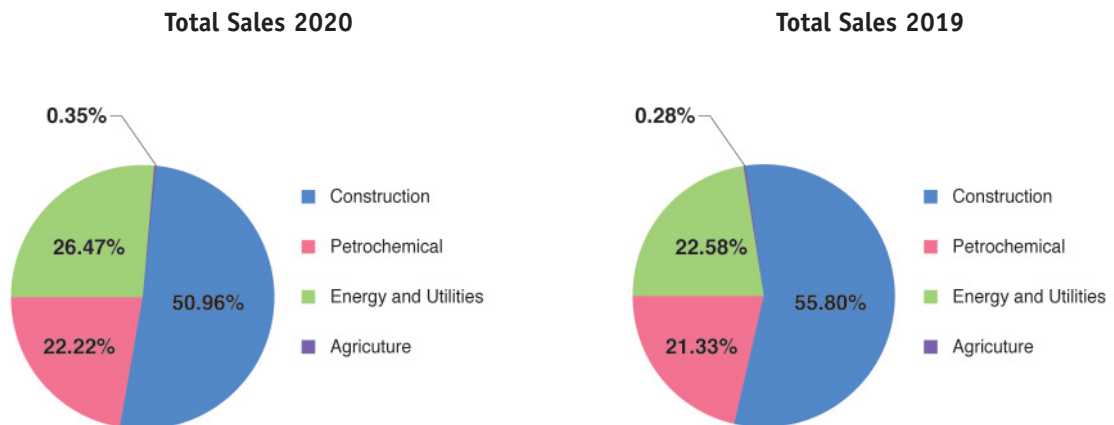
Financial Highlights

	Unit	2018	2019	2020
Operational Performance				
Total Revenues	(Baht Mil.)	37,315	39,268	36,187
Total Sales	(Baht Mil.)	34,993	37,041	34,276
Gross Profit	(Baht Mil.)	6,975	8,636	9,339
Operating Profit (Loss)	(Baht Mil.)	2,980	4,297	6,394
before interest and income tax				
Operating Profit (Loss)	(Baht Mil.)	1,261	2,338	4,379
before income tax				
Net Profit (Loss)	(Baht Mil.)	1,425	2,765	2,839
Financial Status				
Total Assets	(Baht Mil.)	110,488	114,368	123,909
Total Current Assets	(Baht Mil.)	28,391	25,378	27,295
Total Liabilities	(Baht Mil.)	59,551	62,875	71,737
Total Interest Bearing Debt	(Baht Mil.)	50,457	53,229	62,446
Net Interest Bearing Debt**	(Baht Mil.)	41,829	47,834	52,339
Total Shareholder's Equity	(Baht Mil.)	50,937	51,493	52,172
Key Financial Ratios				
Gross Profit Margin	(%)	19.93	23.32	27.25
Net Profit Margin	(%)	3.82	7.04	7.85
Paid-up Capital	(Baht Mil.)	20,190	19,181	19,181
Par value per share	(Baht)	1.00	1.00	1.00
Book Value per share	(Baht)	2.63	2.68	2.75
Earnings per Share	(Baht)	0.016	0.073	0.079
Dividend per Share	(Baht)	0.02	0.06	0.06
Dividend payout Ratio*	(%)	153.85	82.19	75.95
Debt to Equity Ratio	(times)	1.17	1.22	1.38
Net Debt to Equity Ratio**	(times)	1.00	1.12	1.18
Interest Bearing Debt to Equity Ratio	(times)	0.99	1.03	1.20
Net Interest Bearing Debt to Equity Ratio**	(times)	0.82	0.93	1.00

Remarks: * Based on Separate Financial Statements

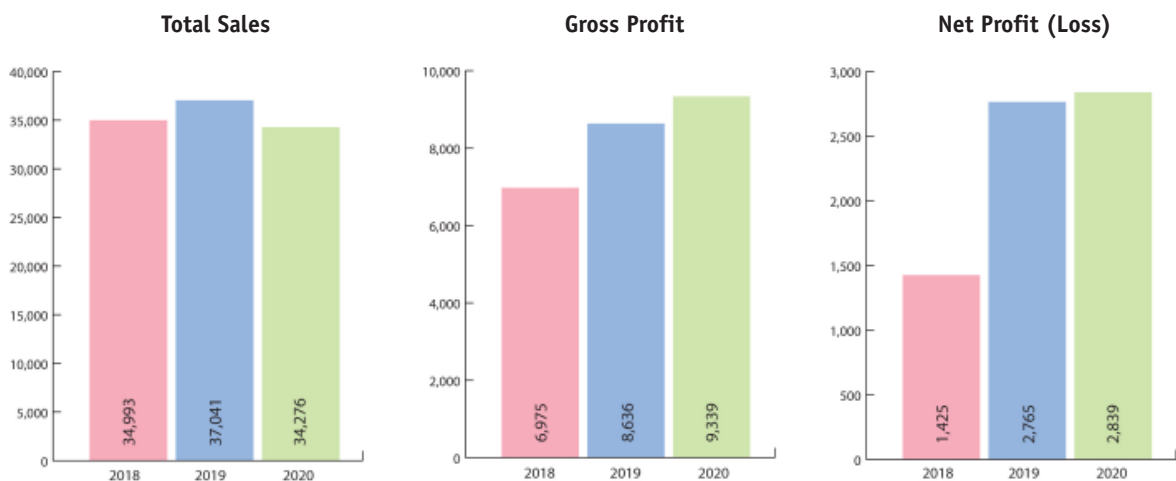
** After deducting Cash and Cash Equivalent and Current Investments.

Total Sales Revenues



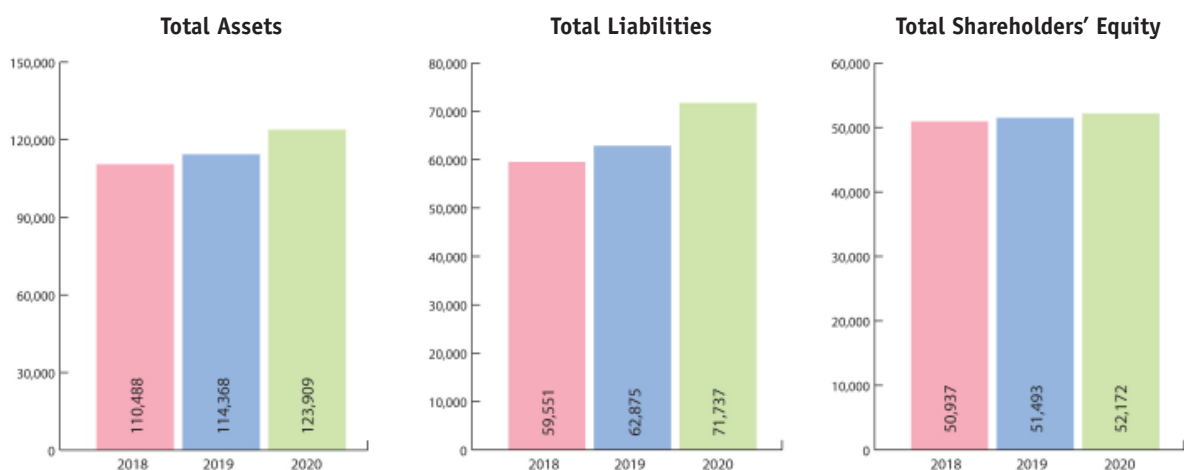
Unit: Baht Mil.

Total Revenues and Net Profit

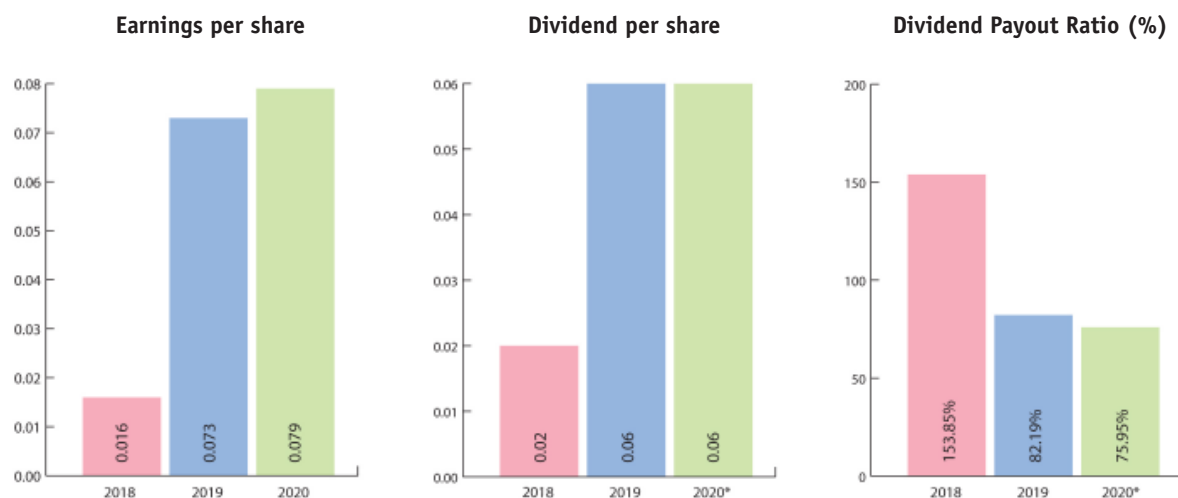


Unit: Baht Mil.

Financial Status



Profit and dividend



Remarks: * The dividend payment for the Company's 2020 operating results is divided into an interim dividend payment for the first half of 2020 of Baht 0.03 per share, which was already paid to shareholders, and the dividend payment for the second half of 2020 of Baht 0.03 per share, which has been approved by the Company's Board of Directors' meeting no.2/2564, further required to be approved in the 2021 Annual General Shareholder's Meeting.


Financial Ratio

	Unit	2018	2019	2020
EBITDA / sales ratio	Times	0.16	0.20	0.27
Interest coverage ratio	Times	3.39	4.13	4.12
Debt to Equity ratio	Times	1.00	1.12	1.18
Return on Equity	%	2.77	5.40	5.48
Return on Assets	%	1.33	2.46	2.38

Our Pride Awards


Year		Certificates/ Award	Award-winning categories	Organizers
2020		CSR-DIW Continuous Award	CSR-DIW Continuous Awards: Standards for Corporate Social Responsibility of industrial entrepreneurs who comply with the standards of corporate social responsibility	Department of Industrial Works, Ministry of Industry
2019		CSR-DIW Continuous Award	CSR-DIW Continuous Awards: Standards for Corporate Social Responsibility of industrial entrepreneurs who comply with the standards of corporate social responsibility	Department of Industrial Works, Ministry of Industry
		Gold Label	Certification for the use or production of renewable electricity generation (Gold Label) for recovering waste heat from power plants to be used in the cement production process.	Thailand Business Sustainable Development (TBSD) and Thai Environment Institute
2019	 	Carbon labels Certificates	Certified carbon labels for the entire cement and mortar products, with 4 types of products are awarded “Carbon Reduction Label” as follows 1. TPI M209 2. TPI M200 3. Mixed Cement (TPI green cement) 4. Mixed Cement -TPI 197 Carbon reduction labels are labels that are given to products or goods that meet controlled standards and are produced effectively in reducing carbon dioxide emissions or eco-friendly products are produced to help reduce global warming.	Thailand Greenhouse Gas Management Organization (“TGO”). (Public Organization)

Year		Certificates/ Award	Award-winning categories	Organizers
2018		Thailand Coal Awards	Award Winners under the category Corporate Social Responsibility under the category "TPIPL-Strives to CSR"	Department of Mineral Fuels, Ministry of Energy
		CSR-DIW Continuous Award	CSR-DIW Continuous Awards: Standards for Corporate Social Responsibility of industrial entrepreneurs who comply with the standards of corporate social responsibility	Department of Industrial Works, Ministry of Industry
2018		Certificate for reduction or avoidance of Greenhouse Gas Emissions	Certificate for reduction or avoidance of Greenhouse Gas Emissions for 11 Products (Carbon Reduction Labels) for the 3rd consecutive time	Thailand Business Sustainable Development (TBSD) and Thai Environment Institute
		Certification	Industrial Waste Management Plant Standards "Bronze Medal Level" under the Waste Management Operator Upgrade Program to improve the quality of total waste (burning sewage or unused materials in kiln plants)	Department of Industrial Works, Ministry of Industry
2017		Thailand Coal Awards	Award for Special Submission Category from the performance "Specific energy consumption improvement of kiln plant"	The Department of Alternative Energy Development and Efficiency, the Ministry of Energy
		Thailand Coal Awards	Award for participation in communities and society under the category of Corporate Social Responsibility from the performance "TPIPL intend continuing commitment to CSR"	The Department of Alternative Energy Development and Efficiency, the Ministry of Energy

Year		Certificates/ Award	Award-winning categories	Organizers
2017		ASEAN Energy Awards	Award for participation in communities and society under the category of Corporate Social Responsibility from the performance "TPIPL intend continuing commitment to CSR"	The Department of Alternative Energy Development and Efficiency, the Ministry of Energy
			Became an official Member of the World Cement Association (WCA)	World Cement Association (WCA)
2016		Thailand Energy Awards	Outstanding Award in creative energy, the project generates electricity from conveyor belts for raw material transportation	The Department of Alternative Energy Development and Efficiency, the Ministry of Energy
		CPF and CFR Certification	- Carbon Product Footprint: CPF - Carbon Footprint Reduction Label (CFR) or Global Warming Reduction Label	Thailand Greenhouse Gas Management Organization (Public Organization)
2015		Thailand Coal Awards	TPIPL is engaged with society and is environment friendly under the category Corporate Social Responsibility : CSR	The Department of Alternative Energy Development and Efficiency, under the Ministry of Energy
		Thailand Coal Awards	Reduction risk of fire machine damage and fuel costs for Special Submission Category under the project "Reduce the ignition of charcoal dust in the system" for the Coal Preparation system	The Department of Alternative Energy Development and Efficiency, under the Ministry of Energy

Year		Certificates/ Award	Award-winning categories	Organizers
		Thailand Energy Awards	Alternative Energy: in the category of projects not connected to off-grid systems: fuel production from old tires by pyrolysis process	The Department of Alternative Energy Development and Efficiency, under the Ministry of Energy
2015		ASEAN Coal Awards	Outstanding performance rewards: Special Submission Category under the project, "Reducing the ignition of coal dust in the coal preparation" system	The Department of Alternative Energy Development and Efficiency, under the Ministry of Energy
		Project of Honor for safe entrepreneur	Honorable project for safe entrepreneurs to honor Her Royal Highness Princess Maha Chakri Sirindhorn	Department of Labor Protection and Welfare, Ministry of Labor
2013		Gold Label	Certification for the use or production of alternative energy (Gold Label) for recovering waste heat from power plants to be used in the cement production process	Thailand Business Sustainable Development (TBSD) and Thai Environment Institute
		Industrial Waste Management Manufacturer "Gold Medal Level"	Industrial Waste Management Plant Standards "Gold Medal Level" under the activities: Co-fired in cement production process	Department of Industrial Works, Ministry of Industry
2010		Polene Employee Savings Cooperative Award with "excellent governance" under Provincial Level 2010	Provincial Level	Saraburi Province and Saraburi Cooperatives
2009		Excellent Environmentally Managed Quarry Award	Project "Quarry on the Star" in 2009	Ministry of Natural Resources and Environment

Year		Certificates/ Award	Award-winning categories	Organizers
2009		Green Mining Awards 2009-2010	Mining Type	Department of Fundamental Industry and Mines, Ministry of Industry
2008		Manufacturer for Grinding Plant at "Good" level Environmentally Managed	Project "Quarry on the Star" 2008	Department of Pollution Control, Ministry of Natural Resources and Environment
		No Lost Time Injury: LTI manufacturer in Workplace	Campaign to reduce work accidents to zero	Ministry of Labour
2006		"Good" class Award Manufacturer for mining classified by Department of Fundamental Industry and Mines, Ministry of Industry for the year 2006	Mining Type	Department of Fundamental Industry and Mines, Ministry of Industry
		Manufacturer for "Good" level environmentally managed grinding plant	Quarry Project "Quarry on the Star" 2006-2007	Department of Pollution Control, Ministry of Natural Resources and Environment
		Top Class Entrepreneur	Mining Type	Department of Fundamental Industry and Mines, Ministry of Industry

Year		Certificates/ Award	Award-winning categories	Organizers
2005		Personnel: Responsible for energy control plant	Khun Worawit Lertbussarakham	The Department of Alternative Energy Development and Efficiency, the Ministry of Energy.
		Manufacturer for no Lost Time Injury : LTI in Workplace	Campaign to reduce work accidents to zero	Ministry of Labour
2002		Outstanding Workplace for Safety, Occupational Health and Working Environment 2002	National Excellence Awards	Work Safety Organizing Committee
		Outstanding Workplace for Safety, Occupational Health and Working Environment 2002	Provincial Excellence Awards	Work Safety Organizing Committee

Efficient Energy Saving Label Award

In addition, on 14 January 2019, the Company received the “Efficient Energy Saving Label” from the Department of Renewable Energy and Energy Conservation, Ministry of Energy, by surpassing standards in compliance with “the Project to promote highly efficient machinery and the use of materials for Energy Conservation with the Label Award”, in full accordance with energy saving codes.

TPI Polene Public Company Limited has provided 1,000 sets of grease traps for volunteer development work to clean water in the canals under the project, “River Conservation Volunteer Project” in honor of His Majesty King Maha Vajiralongkorn Bodindradebayavarangkun’s 10th Anniversary, of the Department of Primary Industries and Mines. In this regard, TPI Polene Plc. provided grease traps to the Volunteer Administration Center of the Ministry of Industry for installation in various communities in seven provinces, such as Bangkok, Samutprakan, Pathumthani, Phranakhonsriyutthaya, Lamphun, Nakhon Sawan and Surat Thani. The Royal Volunteer Center assigned the Ministry of Industry to closely supervise factories that drain water into public rivers as well as cooperating with related sectors to improve water quality in the country’s main canals and rivers to help solve wastewater problems through voluntary projects.



Driving Towards the Economy to Sustainable Growth (Bio-Circular-Green Economy - BCG)

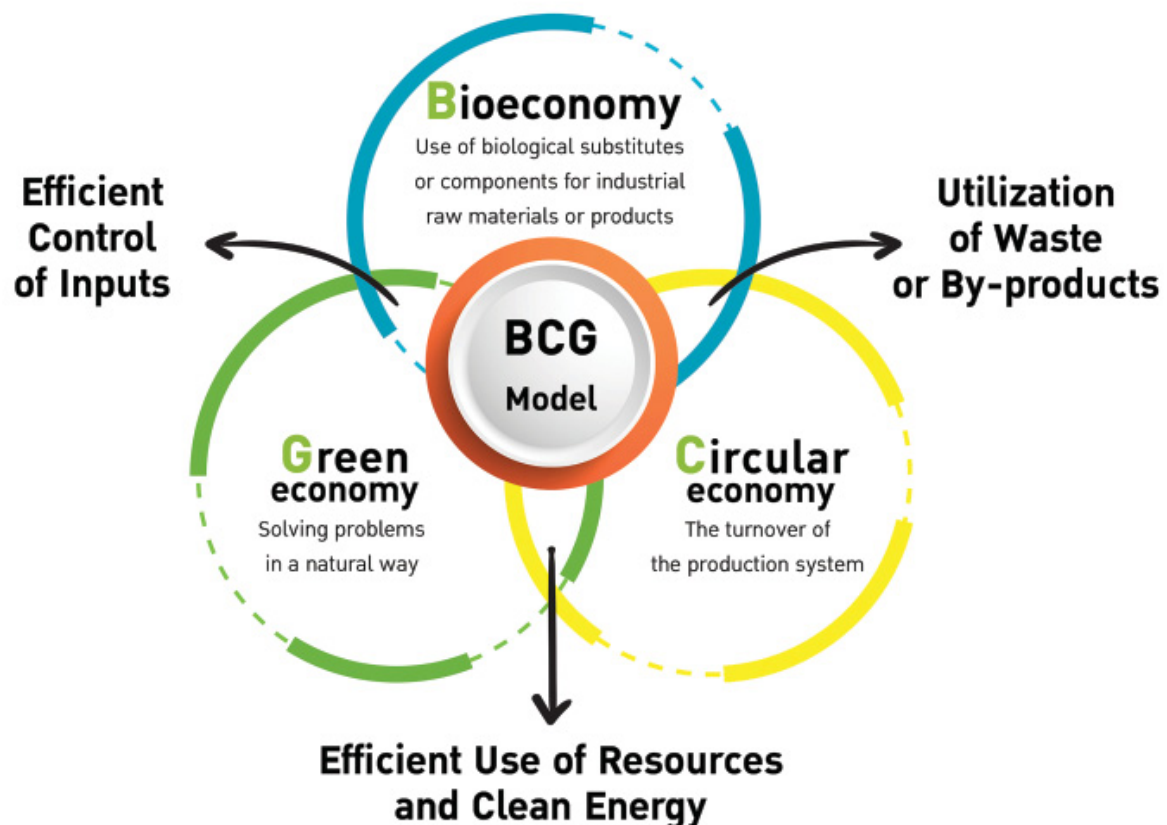
Circular Economy, Green Economy and Bio Economy

TPI Polene Group recognizes the importance of resource utilization amidst the accelerating growth rate of the world population. Meanwhile, the supply of limited natural resources and inefficient consumption lead to more waste and depletion of natural resources in economic cycles, which inevitably worsens the climate change problem. That in turn accelerates resource scarcity while greenhouse gas emissions result in global warming. This is primarily caused by waste from consumption, including the impact of marine waste.

“We are depleting the natural resources of our descendants’ generation”; this sentence reflects the absolute necessity to improve the efficient consumption of natural resources, including raw materials energy, as well as the measures to be taken for environmental impact reduction and waste overflow. All of these factors result in global warming.

TPI Polene Group is committed to playing a role in solving such problems for our planet with a commitment to a policy of the “Circular Economy” as a global sustainability concept. This will be implemented at all stages of business operations, from research and development planning, production processes and to the delivery of our products to consumers. Waste from one process is a raw-material for another to maximize the benefits of resource utilization. In a bio-based economy, material cycles are efficient and sustainable in the supply chain in the business, social and community sectors.

TPI Polene Group has established this policy for the group of companies, aimed at sustainable development by implementing “Circular Economy” to be mainstreamed as a global sustainability concept to maximize the benefits of resource utilization and the continual use of resources, eliminating waste. Circular systems employ reuse, remanufacturing and recycling to reduce environmental pollution, minimizing the use of resource inputs and the creation of waste, pollution and carbon emissions, with the key objective to reduce carbon dioxide emission in the atmosphere, which causes global warming, by using renewable energy in the production process. In addition, TPI Polene Group aims to improve the group’s production efficiency and products under the concept of renewable biological resources and the conversion of these resources and waste streams into value-added products to support the country’s agricultural sector.

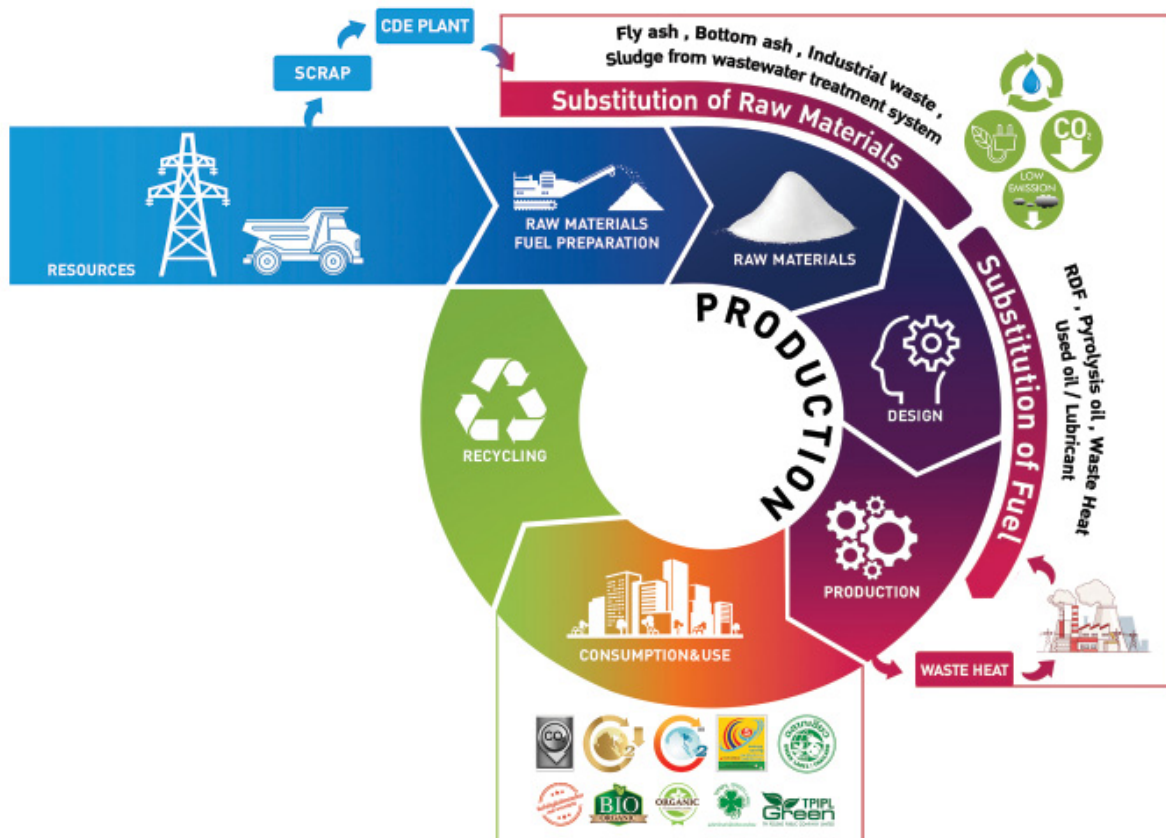


Alternative Raw Material (AR)
Alternative Fuel (AF)

The diagram illustrates a circular economy where waste from various industrial plants is recycled back into the production process. The central plant is the **Cement Plant**. Other plants include **Pyrolysis plant**, **Aggregate Plant**, **CDE Plant**, **Mortar Plant**, **Fiber Cement Plant**, **Concrete Plant**, **SOLAR CELLS Plant**, **PLASTIC Plant**, **AAC Plant**, **Rayong Plant**, **Power Plant**, and **Organics Fertilizer Plant**. Waste from these plants is recycled back into the system as **Alternative Raw Material (AR)** or **Alternative Fuel (AF)**.

Business continuity of TPI Polene Group

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TPI Polene Public Company Limited



1. Green Research and Development

- Product development using Alternative Raw materials
- Product development using recycled raw materials
- High quality product development to reduce consumer consumption
- Product design to reduce energy consumption in production
- Production of products for decoration to replace the use of natural resources
- New product innovation to respond to the applications as green products

2. Procurement of Raw materials and Energy Resource

- Use of raw material sources with minimal impact on resources and the environment such as:
 - Selection of raw materials from suppliers who use material, such as recycled paper used to produce cement bags or spare parts that use steel from the original parts to be re-reduced etc.
 - Construction of rainwater storage ponds for use instead of using water from natural sources
- Cost-effective use of all parts of raw materials by reuse and recycling, such as"
 - The remainder or low quality limestone from the cement production process will be used to produce construction stones, sand, construction soil and mortar raw materials, etc. using all parts of limestone.
 - Recycle sewage water from cooling towers will be improved to be reused instead of being discharged.
 - Lubricants/oil for engine will be reused as fuel.
- Use of renewable raw materials from waste recycling, such as:
 - The use of bottom ash from power plants as substitute raw materials in cement production process.
 - The use of fly ash from power plants as a substitute for cement
 - Recycle bottom ash in power plants to replace sand to fill bed levels

- Renewable Alternative Raw Material
 - The use of limestone left over from construction stone mills instead of using river sand in power plants
 - The use of limestone dust as a substitute for the use of clinker in cement production process
 - The use of waste water in RDF plants in bio fertilizer production
- Renewable Fuels
 - Processing of municipal waste as a substitute for fuel in RDF power plants and cement plants
 - Lubricant, tires or scrap material from processes in heating plants are used as fuel.
- Renewable Energy
 - Electricity generation from renewable power plants or RDF power plants
 - Production of oil from tires in Pyrolysis plant
- Heat Recovery
 - The use of recovery heat from the production process to warm the raw materials in raw meal and coal grinding machines.
 - The use of recovery heat from steam production process for electricity generation and light weight concrete production.

3. High efficiency and low emission process

- High efficiency production process and production machinery
 - The use of machines with high energy efficiency such as inverter
 - Modification of clinker cooler machine to produce clinker to reduce energy consumption
 - Factory crater with Vertex design to reduce energy consumption
 - The use of a belt conveyor to transport limestones from the quarry and being able to generate electricity back to the system instead of using trucks.
 - The use of Mobile Crusher to lessen rock/aggregate transportation
 - Implementation of various energy conservation projects
- The use of process automation production control system for accuracy in production process
 - The use of process automation system to control production from the central control room.
 - Combustion control program for fuel and power consumption reduction to obtain high quality clinker
 - The use of IOT and data technology for data management to increase production efficiency
- Controlling and reducing the environmental impact from production processes.
 - An installation of air quality monitoring system to measure air emitted from the factory crater, by using Continuous Emission Monitoring (CEM).
 - Installation of filtration device and electrostatic precipitator (ESP).
 - Installation of truck wheel washers in various transportation in the factory, including contractors' trucks.
 - Roof covering to store raw materials and coal to control dispersion.
- The use of automation machinery or robots in the production process.
 - The use of automation machinery to store raw material samples, products for quality analysis to control the production process.
 - Using robots to perform tasks such as products packaging.
 - Using robots to perform welding and maintenance work.

4. Green Products

- Products that have been certified under both domestic and international standards.
- High quality products that can reduce consumption to maintain job quality.
- Products that are convenient for transportation, storage and use.
- Products that are environmentally friendly.
- Products that can save energy in real use.
- Products that can get rid of scrap with are no hazardous contamination in products and packaging.

5. Sales, Transportation and Services

- Packaging design in cargo transportation
- Process Automation system to unload goods
- Promoting efficient transportation and reducing environmental and community impacts
- Using digital platforms to sell and transport
- Servicing customers in the use of products for optimal performance.
- The use of waste products from consumption for renewable use

Reduction of Greenhouse Gas Emissions and Disposal of Municipal Wastes

The Company is committed to conducting its business to cope with pressure from environmental measures from climate change that tend to be intense. This will increase the potential of the business by focusing on the reduction of greenhouse gas emissions by using energy and renewable fuels to replace fossil fuels, and energy and resources in production efficiently, as well as research and development of the Company's products in the production process to reduce greenhouse gas emissions.

The Company aims to reduce carbon dioxide emissions to become a zero global warming impact company by joining the voluntary greenhouse gas reduction program in accordance with Thailand's standards. The Thailand Voluntary Emission Reduction Program (T-VER) involves registering and receiving carbon credits (T-VER) and participating in the Low Emission Support Scheme (LESS) to register carbon footprint labels, confirming that the products have passed the carbon footprint assessment for all 14 products and reduce greenhouse gas emissions according to certain criteria.

TPI Polene Group has planned to implement projects such as renewable energy, renewable fuels, energy efficiency, tree planting and forest restoration and effective use of resources. From 2009- present, the Company has consistently created an innovative technology in the manufacturing of products and made an investment in businesses related to environmental mitigation, totaling Baht 29,214 million, which can be summarized as follows:

	Project	Investment cost (Mil. Baht)	Benefits
1.	The Prepol-SC project: Installation of additional machinery in 3 kilns to reduce heat consumption, repair costs to be able to use up to 30% of waste to replace coal-fired fuel consumption.	Baht 2,180 million.	A renewable RDF fuel project from waste sorting to reduce waste and replace coal-fired fuel consumption by up to 30%, which will reduce fuel costs. It is expected to reduce coal consumption. approximately 487,500 tons per year with the use of 814,125 tons of RDF fuel per year, or equivalent to municipal waste of 2.7 million tons per year or if the waste is carried out using landfill methods, this project helps reduce greenhouse gas emissions by more than 6.5 million tons per year. The project will reduce the cost of clinker production by 150-200 baht/ton, starting in 2020-2022 onwards.
2.	The project to install raw material conveyors from the site-A (Regenerative Downhill Conveyor) mine to the stone crusher of cement plants replaced truck transport in 2013-2015.	Baht 320 million.	An energy efficiency project, using belts to transport limestone from mines instead of truck transportation. Reduced diesel fuel consumption by Baht 55.74 million per year and reduced greenhouse gas emissions from transportation by 4,153.43 tons of CO2 equivalent/year In addition, the belt system can generate electricity of 928,868 kW/hour per year (equipped with a meter showing electricity generated from the belt) or Baht 3 million per annum. This project has been awarded the 2016 Thailand Energy Award for Outstanding Creative Power. Power generation from raw material conveyor belt From Department of Renewable Energy Development and Energy Conservation, Ministry of Energy

	Project	Investment cost (Mil. Baht)	Benefits
3.	The project installs raw material conveyor belts and mobile crushers at the quarry, which will crush limestone and shale from the front of the mine to the factory via conveyor belt, to replace truck transport in 2013-2020.	Baht 1,146 million.	<p>Reduce production costs and replace the use of truck transportation for a total distance of approximately 19 kilometers. The conveyor system of about 10 kilometers round trip, can generate 215 kw of electricity (the Company attaches a meter to show the current generated by the conveyor belt).</p> <p>This project can reduce the cost of cement production by approximately Baht 10 per ton. It is able to reduce the use of fuel from transportation to higher efficiency electricity consumption and less greenhouse gas emissions, as well as reduce PM2.5.</p>
4.	The classification plant, which uses scrap from the construction aggregate production process, (which cannot be used through recycle), to be used as a raw material in cement, mortar and concrete production process. The project started the commissioning in 2019.	Baht 446 million.	<p>Reduce production costs by employing resources efficiently through the process of recycling.</p> <p>The project can bring back 560,000 tons of rock to be used as raw material in cement, mortar and concrete plants (if left in the long run, co2 will be caused).</p> <p>This project is considered to be the implementation of the circular economy principles in business operations to reduce the use of natural resources and move forward with the recycling process as much as possible.</p>
5.	40MW Waste Heat Recovery Power Plant in 2009	Baht 1,544 million	<p>Reduce production costs by using waste heat recovery from the cement production process to generate electricity. It does not cause any energy consumption but help reduces global warming.</p> <p>Co2 emissions can be reduced as follows:</p> <p>In 2010, the equivalent reduction of CO2 emissions = 146,094.27 tons.</p> <p>In 2011, the equivalent reduction of CO2 emissions = 149,481.20 tons.</p> <p>In 2012, the equivalent reduction of CO2 emissions = 146,105.00 tons.</p> <p>In 2013, the equivalent reduction of CO2 emissions = 147,911.85 tons.</p>
6.	Fertilizer Plant in 2011	Baht 1,455 million	<p>It is a project that brings the remaining resources from waste sorting through the production process to make organic fertilizers to increase crop yield and reduce the cost of using chemical fertilizers for farmers. It also does not cause soil residues as organic matter helps reduce environmental problems for communities and society. This makes it possible to get rid of pests and grow vegetables without chemicals.</p>

	Project	Investment cost (Mil. Baht)	Benefits
7.	<p>The RDF fuel plant project in 2011 by using waste through a sorting process to produce RDF fuel.</p> <p>Presently in the process of expanding RDF production capacity in 2020-2021</p>	<p>Baht 2,690 million</p> <p>Baht 1,400 million</p>	<p>It is a renewable fuel project to replace coal fuel to generate electricity or replace coal in cement production plants. It also reduces environmental impact as waste disposal, which was originally used landfill method, causing air pollution, unpleasant odors and groundwater. Besides, it reduces space for landfill use and reduces the use of limited sources of energy, as well as reducing CO2 emissions, greenhouse gases and global warming.</p> <p>The project has been awarded the 2014 and 2019 Thailand Energy Award for Renewable Energy : Projects to Off-Grid Systems.</p> <p>The project was certified by the Greenhouse Gas Management Organization and T-VER registration and help reduce greenhouse gas content of 82,056 tons of carbon dioxide equivalent</p> <ul style="list-style-type: none"> - First certified in 2016, 13,483 tons of carbon dioxide equivalent, and - certified in 2018, 68,573 tons of carbon dioxide equivalent. <p>In 2021, the Company will evaluate the receipt of carbon credits from T-VER.</p>
8.	RDF fuel power plant project with total capacity 80MW (in 2015) and 100 MW (in 2018), totaling 180MW with back-up boilers	Baht 13,698 million	<p>Renewable energy project by using waste as fuel. It is manufactured to sell electricity to EGAT and to reduce fossil power generation in the electricity generation system and to manage waste problems in the community.</p> <p>Garbage can be disposed of through a burning process to generate electricity. This reduces the effects of pollution and greenhouse gas emissions from piles of garbage</p> <p>All power plants can dispose of waste to local areas delivered in equivalent quantities of community waste of 10,000 tons per day or 3.65 million tons per year.</p> <p>If the waste is carried out using landfill methods, it will cause the release of greenhouse gases, of which 1 ton of waste will have a greenhouse gas emission of 2.32 tons of carbon. As a result, waste management by burning to generate power can reduce greenhouse gas emissions by 8.5 million tons per year.</p> <p>The project received Thailand Energy Awards in 2015, 2017, 2018 and 2020 from the Department of Alternative Energy Development and Conservation, Ministry of Energy, and was runner-up at the 1st ASEAN Energy Awards 2017 held at the ASEAN Energy Business Forum 2017 in Manila, Philippines.</p>

	Project	Investment cost (Mil. Baht)	Benefits
9.	Fiber Cement Plant Project in 2017 - 2019	Baht 4,081 million	It is a fiber cement project with asbestos-free, environmentally-friendly and wood substitute material, reducing deforestation. Such products have been exported overseas and bring foreign currency from the imports.
10.	Polene Solar Project	Baht 151 million	Support the use of solar energy, which is a renewable energy
11	The project to recycle wastewater from the cooling tower in the electricity production process through filtration for re-use.	Baht 103 million	The project to enhance the use of resources and energy, by recycling wastewater through filtration for re-use. In 2020, 534,074 cubic meters of water can be filtered back to reuse. This helps cost reduction amounted to Baht 15.49 million/year.
12	Developed TPI197 mortar production technology to replace TPI green cement (mixed cement), reducing greenhouse gas emissions by 10-15% with TIS standard.	Research & Development Budget	Greenhouse gas reduction from substitutions In 2018 decreased by 64,051 tons of CO2 equivalent In 2019 decrease by 60,895 CO2 equivalent 2020 decrease 89,986 CO2 equivalent
13	Developed TPI299 cement production technology (Hydraulic Mortar) to replace Portland cement, reducing greenhouse gas emissions by 10-15% with TIS standard.	Research & Development Budget	Greenhouse gas reduction from substitutions 2018 decreased by 169,648 tons of CO2 equivalent 2019 decreased by 157,276 tons of CO2 equivalent 2020 decreased by 139,474 tons of CO2 equivalent
14	Successfully manufacture product innovations, such as bio fertilizers, symbiotic supplements using microorganisms to grow vegetables without pesticides, without the use of substances that is harmful to humans. Develop symbiotic, especially Coronavirus, for consumption and to clean vegetables, fruits, meat before cooking.	Research & Development Budget	These innovations will benefit humanity even if they are not highly profitable as they are in the research and development process.
Total		Baht 29,214 million	

TPI Polene and Social Responsibility

TPIPL and its subsidiaries also foster good corporate governance, while creating public well-being by putting corporate social responsibility into practice, which can be partly reported below:



1. Environmental Activities

Planting trees project to promote nature conservation and the environment

- “TPI Ruamjai 700 trees Planting Project” at TPI Cement Plant, Kaeng Khoi, Saraburi province to increase green space, which helps improve the ecosystem around the plant. It also affects the absorption of carbon dioxide in the atmosphere that is increasing every day as well. The project also provided support of “TPI Organic Fertilizer” for the Saraburi Provincial Government Center for the occasion of “National Tree Day 2020” to promote the conservation of nature and the environment in Saraburi.
- TPIPL donated Microme Knox, Synbiotics products, wood vinegar and bio pets to Pak Chong District Livestock Office Nakhon Ratchasima as there was a temporary outbreak of African Horse Sickness in every village at Pak Chong, Nakhon Ratchasima province, causing a large number of horses in the area to die and cause damage to horse keepers. The Company recognizes the importance of the country's economy and the products were delivered to inhibit and control pathogenic microorganisms to animals, which caused a temporary outbreak of African Horse Sickness.





2. Social Activities

• Contribution of blankets in 2020

Distribution of 10,000 blankets in total: In the northern part of the country, TPI Polene distributed 7,000 blankets to students, teachers and citizens in the affiliation of the Border Patrol Division 3, Chiang Mai province. Recipients included the elderly, disabled, the poor, residents in the highlands of Ban Doi Kaeo and Ban Doi Luang, Duka Sub-district, Doi Tao District, Chiang Mai province. We passed the “Dhammasin” Meditation Office to further distribute blankets to the victims of the Huay-Ya village, Kanlayaniwattana, Chiang Mai province.

For the northeast part of Thailand, TPI Polene distributed 3,000 blankets to students, teachers, and people in the affiliation of the Division of Police Charter of the region 2, Khon Kaen province.

The Company plays an integral part in providing warm steam to cold victims and helps provide relief from cold weather conditions.

To promote and improve the quality of life of Thai people

To strengthen the community to be healthy by launching mobile medical services in “TPI Polene health care program” to monitor ailments, health service, health care, promote health awareness and benefits of lung examination in surrounding communities in Kaeng Khoi, Muaklek District, Saraburi province and visiting bedridden patients in Khao Din Pattana, sub-district Chaloem Phra Kiat, Saraburi province.

Made a contribution of TPIPL cement products

Donated 11,255.10 tons of cement, 100 cubic meters of ready-mixed concrete, TPI stone, TPI roof tile, as well as TPIPL Nano Super Armour and other products totaling Baht 5,510,687.66 to help improve the construction of government offices such as:

- Supported the “Quality of Life Development Fund” to repair the construction of homes for the poor and 6 socially disadvantaged in Kaeng Khoi District, Chaloem Phra Kiat District and Phueng Ruang District, Saraburi province as well as the joint construction of The Lighting Institute Foundation under the patronage of Her Royal Highness Princess Soamsawali, and the renovation of the 36th Anniversary Building, Saraburi Provincial Government Center, etc.

- Participated in volunteer activities to improve the landscape, improve the buildings (community hall and the school), and help reduce the accumulated waste to provide a strong community for the villagers of Ban Ang Hin community. Muaklek, Charoenporn Community Villagers, Kaeng Khoi, Saraburi province, Ban Sap Bon School, Kaeng Khoi, Saraburi, Wat Muak Lek School in Muak Lek District, Saraburi, and the surrounding area of Phu Khae Botanic Gardens Chaloem Phra Kiatand Suan Kruak Lek, Saraburi province.



Distribution of 192,048 350-ml bottles of drinking water to various organizations for activities that are helpful to society such as:

- Improve the landscape of Thap Kwang Market, Saraburi Province, “Klong Suay Nam Sai Project” under the activities of “Conservation of Muak Lek Canal”, Muak Lek District, Saraburi province; “We Do Good With Heart” to improve the landscape at Ang Namjai, Kaeng Khoi, Saraburi province, and cleaned areas within Saraburi municipality and the area around Wat Ban Muang, Kaeng Khoi, Kaeng Khoi, Saraburi province.
- Supported campaign activities to reduce accidents on New Year 2020 to Saraburi Road Safety Center, Rural Highway Office 2 (Saraburi), Kaeng Khoi Highway Division, Saburi Provincial Police, etc., and participated in preventive measures and reduced the risk of outbreak of COVID-19 through the establishment of checkpoints or extraction points to protect people traveling across Saraburi Province, such as at Saraburi Provincial Government Center, Kaeng Khoi District Office, Muang Saraburi District Office, Muang Saraburi District Office ,Muak Lek Police Station Mittraphap Road, Muak Lek Sub District Administration Organization, Maharbok Province 18 Adisorn Camp.

3. Academic and Youth Activities

Scholarships Awarded

- Awarded scholarships to students in educational institutions located in the district around TPI Cement Factory, Saraburi Province, to 450 students in 6 schools and awarded 6 scholarships to children in the Kaset Samphan community (9 houses), near the TPI Polene Cement Plant, Saraburi province to complete their undergraduate degrees. Scholarships are reserved for students with special qualifications, such as academic talent and good behavioral performance until graduation.





To Enhance Academic Quality

- Made a contribution of 113 cubic meters of ready-mixed concrete, 775.6 tons of TPIPL cement products as well as TPIPL Nano Super Armour, concrete roof tiles, light weight concrete , TPI wood replacement and board products, etc., totaling Baht 2,188,676.05 to contribute to schools in need of funding for repair and renovation of the school building, roof, and school road entrance, to give the students a better quality of life.

4. Religious Activities

The Company and its subsidiaries, the management team, the Company's staff, clients and spiritual people together have co-hosted Kathin and hosted Katin ceremonies with various organizations worth Baht 2,035,691.50. These included hosting Katin ceremonies at Sridonmoon Temple and Ban Hin Lab Temple, Saraburi Province, Tham Salika Temple, Nakhon Nayok province and Wat Muak Lek Nai, Saraburi province etc.

The Company donated 3,864.18 tons of TPIPL cement product, Super Armour Nano paint and roof tiles as well as other products, with a total value of Baht 6,796,943.15, to more than 18 temples in the country for the purchase of construction materials to build and renovate religious places such as: Siriban Temple, Phuket province; for repair of damaged Buddha statues from all over the country, Rom Pho Tham Monk's Office/ for the construction of a charity hall, Wat Ku Pa Lan, Lamphun province/ for the construction of a building to store materials and instruments to organize projects and Buddhism ceremonies at Thamsathan Chaloem Phra Kiat Rama 9 Building, Wat Rama 9, Kanchanapisek/ renovation of Meru, Wat Haad Kham Prachuapkhirikhan province, etc.

TPI Polene is committed to be a corporation with management efficiency at an international level that conducts research and development of new innovations for continuous business operations, including giving importance and recognizing the roles and responsibilities as an organization that is ready to support society, education, youth, religion and the environment. The Company is committed to creating a supportive society, a good environment, and a sustainable Thai economy: "TPI Polene: we create the future".



Business Operations and Operating Results

1. Structure and Business Operation of TPI Polene Group

1.1 Policy and overview of business operations

Vision and Mission

TPI Polene Group is principally engaged in the manufacture and sale of cement as well as being Thailand's leading construction materials producer. TPI Polene Group has a policy to create a balanced consideration of its business growth in parallel with environmental preservation and the strengthening of society, and to be an integral part in moving the Thai economy forward together with Thai society so as to be a part of driving the economy, as well as creating good returns on investment and creating a balance for the shareholders and stakeholders involved.

Vision

TPI Polene is an international reliable cement and plastic resins manufacturer, which grows and generates sustainable returns to shareholders.

Mission

The Company develops technology and innovation to create competitiveness while focusing on the importance of corporate social responsibly to consistently preserve the surrounding environment, as well as creating a balance of operational performance and good returns on investment for the shareholders and stakeholders involved.

1.2 Nature of Business

1.2.1 Revenue Structure

TPI Polene group is principally engaged in the manufacture and supply of the products mainly in core businesses and reciprocal businesses, which has helped strengthen the revenue and growth of TPI Polene Group, which can be summarized as follows:

Unit: Million Baht

Product/Service	Operated by	% Of TPIPL's Shareholding	Sales revenues from external customers		Inter-company's revenues		Total Sales revenues			
			2020	2019	2020	2019	2020	%	2019	%
Construction material	TPI Polene Plc. TPI Concrete Co.,Ltd.	- 99.99	17,468	20,670	8,984	10,668	26,452	51.49	31,338	54.91
Petrochemical and Chemical Products	TPI Polene Plc. Thai Nitrate Co., Ltd.	- 99.99	7,616	7,901	5,927	7,021	13,543	26.36	14,922	26.15
Electricity and Utility	TPI Polene Power Plc.	70.24	9,072	8,364	2,047	2,207	11,119	21.64	10,571	18.52
Organic Products	TPI Polene Bio Organics Co.,Ltd.	99.99	119	105	141	135	260	0.51	240	0.42
Total			34,275	37,040	17,099	20,031	51,374	100.00	57,071	100.00

1.2.2 Product Information

TPI Polene Products can be categorized by types of businesses as follows:

1. Construction sector: manufacture & sale of cement, mortar, clinker, ready-mixed concrete, CRT/FCB, lightweight concrete and cement paint, etc.
2. Petrochemical and Chemical Products sector: manufacture & sale of EVA/LDPE plastic resins, ammonium nitrate and nitric acid, Solar Film, EVA Emulsion and EVA Powder., etc.
3. Energy and Utilities sector: Manufacture and sale of RDF alternative fuel, a waste heat recovery power plant, a coal-fired power plant, an RDF-fired power plant, oil and NGV service stations and petroleum exploration., etc.
4. Others: industrial waste disposal, manufacture and sale of organic fertilizers and pesticide, probiotics for livestock, hygiene and healthcare products such as, liquid soap, dishwashing liquid, stain remover, drinking water, energy drink Pro-150 and Pro Vita as well as life insurance business, packaging bags, import-export business, retailed products of the group and real estate development, etc.

(1) Characteristics of Products and Business Innovation Development

Details are as follows:-

1. Cement, Clinker and Mortar Cement Business

TPI Polene is one of the major manufacturers and distributors of cement products and mortar cement under the brand name “TPIPL”. The Company currently operates four cement production plants in Saraburi Province, with a total production capacity of 13.5 MTPA and has a market share that accounts for 20 percent of the domestic market. All the Company’s cement products meet the ISO/TIS certifications of industrial standards, ASTM Industrial Standards and the EU Industrial Standards. TPI Polene is the first cement manufacturer in Thailand to be awarded ISO 9002 Certification from the International Standard Institute, for surpassing industrial and environmental protection standards. This has enabled the Company to export cement to the state of California, where surrounding communities are highly aware of environmental conservation.

In 2020, the Company has adopted technologically-advanced cement production processes to increase fuel combustion efficiency, which can reduce the cost of cement production, enable it to use municipal solid waste to replace coal usage, which emits greenhouse gases into the atmosphere. It is anticipated that from 2022 onwards, solid waste from various communities will be used by the Company up to 2 million tons per year, to help solve the problem of rot of solid waste that overflows the area, which affects public health. In addition, it can also reduce greenhouse gases in the atmosphere by approximately 5 million tons per year under the Company’s action plan, which responds to the New Normal policy of the Thai government to bring municipal solid wastes from the community to be recycled as finished products.

In 2020, cement demand consumption in Thailand was approximately 33-34 million tons, which decreased over the previous year, primarily due to the Covid-19 pandemic. However, there was a consistent construction work on large-scale transportation construction projects and fundamental utilities system in the country. As a result, cement consumption was not still that low. Thus, the Company consistently developed new cement products for the market, such as: cement mortar TPI (M601), a mixed material of cement with fast setting properties that is well-suited for concrete surface repairing; a high-quality cement base non-shrink grout TPI M670, with special components that is specially-designed, allowing for good workability for very high compressive strength with non-shrinkage property; general purpose non-shrink grout TPI M671; cement mortar M900; and special armour nano paint: NP 104.

In 2021, the Company anticipated that cement demand consumption in the domestic market will be equivalent to that in 2020, supported by investment in utilities development systems, mass transit systems and transportation network systems in central and regional parts of the country according to the government’s policy. These included the construction of the color rail project, Dual Way Rail Project, a national rail network of rapid trains; and opening links to three airport routes, the construction of a motorway from Bangkok to Nakhonratchasima and a motorway from Bangkok to Nakhon Phanom province and Bangkok-Rama 3 Expressway Project, etc. Those entire construction projects will have a direct impact on the increase of cement demand consumption in the government sector but the private sector will be slowed down in accordance with economic conditions.

In 2020, cement, clinker and other cement product sales in export markets were affected by the global Covid-19 pandemic. As a result, the construction sector in many Asian countries, which are the principal market for cement imports, has been declining as compared with the previous year. Therefore, demand consumption of clinker, cement and other building materials in import markets expanded at a diminishing rate from the year 2019. Simultaneously, other cement producers in Asia used price competition strategies in the market, which directly had an impact on the clinker export in Thailand. In this regard, the Company exported mainly clinker, with exports of cement and other cement products to some extent. The Company’s main export markets were China, Bangladesh and ASEAN countries.

2. LDPE/EVA plastic resins

TPI Polene is the manufacturer and distributor of LDPE Homopolymer (LDPE) and LDPE Copolymer (EVA) plastic resin. TPI Polene operates this business in Rayong province, with total production of 158,000 TPA. The LDPE is the output to be used as a main raw material for many types of plastic products, while EVA plastic resin will be used to produce athletic shoes. Low-density polyethylene (LDPE) and Ethyl Vinyl Acetate (EVA) account for TPI Polene’s market share of 20% and 90% of total domestic sales volume in the country respectively. We are the sole producer of EVA in Thailand and one of the few producers of high quality EVA in the world that can develop proprietary EVA production technology.

Since 2020, the Company made an investment for efficiency improvement of LDPE plant machinery to be able to produce additional EVA plastic resin as EVA plastic resin yields higher profit margin. As a result, production capacity of EVA resins increased, and the production line has the flexibility to switch to produce the commodities to respond the customers’ demand in market. The project is expected to be completed in 2021.

In 2020, LDPE/EVA price competition in the market was increasingly intense whereas the import tariff for LDPE/EVA was at the rate of 0.5%, which promotes free trade through an ease of import system. In addition, the China-United States trade war and economic conflict between the world's two largest national economies, the volatility of crude oil in global markets, as well as the COVID-19 virus pandemic, affected entrepreneurs who face risk factors and challenges in adaptability. Thus, sales volume and operators' profits have not grown as high as in the past.

However, TPI Polene could still generate profits from the operations of its LDPE/EVA plastic resins business as the Company focused on the importance of customer service quality to provide reliability in the quality of our products and services which are continually evolving. The Company has also improved its production efficiency by reducing the amount of waste during the change in production flow, which reduces production costs, as well as aims to develop products to market as a more technological market to support future technology markets.

In 2020, the Company anticipated that competition for LDPE/EVA plastic resins in the market would be intense. The Company has developed differentiated products to consistently create added-value for LDPE/EVA plastic resins products, as well as developing hot glue with EVA plastic resin as raw material. In addition, the Company has developed EVA plastic resin for the color inks industry on plastic bags and it is now well responsive in the market. The Company still has a policy to develop products that can generate more added-value and penetrate niche market groups that yield higher contributions.

3. Concrete Roof Tile/Fiber Cement Businesses and Lightweight Concrete

The Company is a major cement manufacture in the country and has expanded its business from cement business to the concrete and fiber cement products industry. In addition, the Company continues to strive to improve production efficiency, reduce production costs, reduce time and redundant workflows, reduce the pollution generated by the production process under the environmental management system with innovation and new manufacturing technologies, to create value added to the quality products to meet the needs of the market and further increase sales volume in value-added products quality of the products surpassing the production standards from Thai Industrial Standards Institute and the International Standard Organization (ISO 9001:2015) from British Standards Institution (BSI). In addition, we have a skilled quality control team, assuring qualified products by the professional team under the standardization of roofing material, which can be tested before launching in the market. The product is strong, durable, beautiful, safe, and environmentally-friendly. All types of products are geared towards the green industry.

Fiber cement products are used as substitutes for wood and marble, etc., which reduce deforestation, and the products have been exported overseas and generate revenues received in foreign currency.

The construction industry market in 2020 had no signs of growth due to the ongoing Covid-19 outbreak, which further slowed down the traction of private construction business purchases. In addition, a consequence of the closing of the country, the foreign investors are unable to invest in real estate. Therefore, the construction material industry's sales performance has decreased. As a result, there is quite a lot of competition in price in both the domestic and international markets. Manufacturers have begun to focus on research and development of new products to accommodate the changing behavior of customers because of the COVID-19 situation. Customer behavior requires more flat housing than condos because of concerns about sharing space. Working from home seemed to increase even more whereas real estate entrepreneurs turn to develop and construct flat housing, including hospitals for healthcare and beauty to accommodate tourists who will come to the service after the COVID-19 pandemic. This includes health and aged care medical centers. In this regard, the Company sees opportunities to develop innovative building products and service models to be in line with the changing lifestyle and to meet the needs of our customers with a focus on health safety as well as convenient service for the elderly, which tends to be at higher rate in the near future. In addition, the Company emphasizes the benefits of beautiful design, safety, asbestos-free products, aiming to reduce global warming for the quality of life of our customers.

In 2021, the global economy is expected to continue to slow down if there is no vaccine or permanent method of protection from COVID-19. Meanwhile, the governmental infrastructure sector, private sector such as retail and hotel groups use this opportunity to improve their lodgings during the closing period to facilitate full services when opening the country. The Company has committed to the research and development of innovations for higher quality fiber cement and concrete tiles products and expanded the product line to a full range cycle by focusing on the benefits of product usage that are weather resistant in Thailand, free from insects, durable, safe, clean, environmentally-friendly and beautifully-designed. Presentation of product information is being done via social media, and Suvarnabhumi TV to create more awareness, expanding online sales channels through retail partners, promotional arrangements with reseller stores, Modern Trade, and online channels to cover all target groups. Furthermore, the Company uses a strategy to emphasize efficient and a timely delivery, develop the knowledge and ability of sales representatives to reach the group of customers and dealers to communicate product information and sales accurately. As for architect services, the Company provides advice to customers on building design and installation services from our quality installation team.

In 2020, there was a problem with exports stemming from the closing of countries affected by the ongoing COVID-19 outbreak. The market remains competitive in price and international shipping problems as well as restrictions on 14-day detention measures of each country have further caused the container transport system to be costly and lacking adequate service providers. In 2021, the Company continues to maintain its existing customers and plans to expand its market to Australia, the Middle East, and Europe.

4. Industrial Waste Disposal Business

TPI Polene also operates an industrial waste disposal business to dispose of industrial waste from various industries in the country, under a license to operate a central waste treatment plant granted by the Department of Industrial Works. This project helps eliminate industrial waste from industries, enhance recycling opportunities, lower raw material and fossil fuel usage, and develop a recycling economy with the preservation of environmental surroundings.

5. TPIPL Drinking Water Business

TPIPL has operated a drinking water business under the brand name “TPIPL” since 2011. It has good quality products and it is safe for consumers as it uses high quality reverse osmosis technology filtration systems (RO). This process requires that high pressure be exerted on the high concentration side of the membrane and by applying ultraviolet treatment to eliminate biological contamination and the ozone treatment process in the water-bottling stage of the production of drinking water. These major benefits have made TPIPL drinking water possess quality characteristics of water; thus, we obtained a certificate approved from the Food and Drug Administration (FDA) in compliance with the standards from natural resources. TPIPL drinking water is consumed at the plants and at head office and is also distributed to consumers. The drinking water production process has been certified to comply ISO9001:2015 GMP and HACCP standards.

6. Ready-mixed Concrete (Operated by TPI Concrete Co., Ltd., a 99.9% - owned subsidiary company)

TPI Concrete Co., Ltd. is the third largest manufacturer and distributor of ready-mixed concrete with a market share of 11% of ready-mixed concrete demand in the country. Product quality and consistent improvement of service is our prominent feature.

In 2019-2020, TPI Polene Group invested in the purchase of additional concrete mixer trucks to expand the delivery capacity of mixed concrete and reduce repair and maintenance costs.

In 2020, the ready-mixed concrete market slowed down due to the impact of the COVID-19 pandemic and affected economic growth in the country, particularly on large real estate companies which have reduced the construction of condos and residential housings as consumer purchasing power has decreased significantly. This directly affected demand consumption of ready-mixed concrete in the country. However, government projects have helped drive the construction of various utilities projects, thus resulting in higher demand consumption for ready-mixed concrete. However, price competition in the country was still intense.

In 2021, it is anticipated that demand consumption for ready-mixed concrete in the country will continue to grow, driven by the Thai government’s Mega Projects investment plan worth three trillion Baht. Those projects include: the construction of Bang Yai motorway project-Kanchanaburi, Bangkhuntien-Ban Phaeo; Don Muang Tollway-Bang Pa-in extension; extension of double line BTS Skytrain - Phase 2; and the rapid train national rail network; opening links to 3 airports line routes etc. All of the construction as above will result in the trend of the real estate sector to gradually improve. High-end condominiums are more affected than the horizontal residential housing. The second outbreak of the COVID-19 virus in December 2020 had an effect on property developers who had to adjust their investment plan to meet the demand of customers in the housing market, such as focusing on the 5-8-storey condo market for a price not exceeding Baht 700,000-1 million per unit, instead of building high-rise buildings in the suburbs with a passing BTS line, including townhome development, with a cost not more than Baht 2 million per unit and detached houses with not too high value, which have gradually been constructed according to the customers’ preferences.

Businesses operated by TPI Polene Power Public Company Limited (a 70.24% - owned Subsidiary Company)

7. Power Plants

TPI Polene Power Plc (“TPIPP”) is a power plant operator, (a 70.24% owned-subsubsidiary of the Company) that operates a renewable energy business with an Alternative Fuel Power Plant with the largest waste-to-energy power operations in the country. TPI Polene Power Plc has become one of the leading waste-to-energy power plant explorers in Thailand, with an established track record and expertise in waste management and proprietary technology well adapted to waste-to-energy operations in Thailand.

Presently, TPIPP has eight power plants in operation, with total installed power generation capacity of 440 MW. TPI Polene Power sells a contracted power generation capacity of 180 MW to The Electricity Generation Authority of Thailand (EGAT), and to TPI Polene under contracted power generation capacity of 260 MW (with a permitted power generation capacity of 230 MW) under Power Purchase Agreements (“PPA”).

The RDF fuel power plant business today is very competitive in waste supply, as well as competing with other power producers in entering into power purchase agreements with EGAT, which occurred during the EGAT offers for power plant operators through bidding.

TPI Polene Power is a power plant operator in Thailand, with the largest waste-to-energy power plant operations and is the sole renewable energy technologies Small Power Producer (“SPP”) in Thailand with an installed waste-to-energy power generation capacity of 180 MW (with a market share of 49.5%). TPI Polene Power is also the largest RDF-fired power plant operator in the country.

The Company is a pioneer in power plant operation in Thailand, with the largest waste-to-energy power plant operations in the country with an expertise in the long-lasting plant business operations and a concrete successful performance. It has a competitive advantage in both capital and reliable technology and experience, with the ability to successfully complete project investment.

On January 25, 2021, Songkhla Provincial Administration Organization announced the Company as the winner of the bidding for joint private procurement in the construction and management of solid waste disposal system, which was done via the Songkhla Provincial Administration Organization by Tender Method. Under the terms and conditions as stipulated in the Terms of Reference (“TOR”), the minimum solid waste is 400 tons per day for the period of 20 years, and the winner of the bidding will receive tipping fee from waste disposal of Baht 400 per ton (adjustable upward by 10% every 3 years) and receive revenue from electricity sales derived from waste disposal under a power purchase agreement of 7.92 MW for a period of 20 years, at a rate of Baht 5.78 per unit for the first 8 years and Baht 5.08 per unit for the next 12 years respectively.

In addition, TPI Polene Power has participated in the bidding for the Waste Disposal Project of Nakhon Ratchasima Municipality, under a 9.9 MW power purchase agreement to EGAT for 20 years at the rate of Baht 5.78 per unit for the first 8 years and Baht 5.08 per unit for 12 consecutive years. TPI Polene Power has revenue in the form of waste disposal, with auction results expected to be announced in March 2021.

TPI Polene Power continues its policy to expand its business and grow in the waste power plant business, by participating in the auction of government waste power plants which are the strengths of the Company. TPI Polene Power has expertise with high potential in all aspects of this industry and has a competitive advantage in capital and reliable technology with a ready team to successfully complete project expansion. This includes investment in economic and social development in particular areas which are urgently needed in accordance with government policy.

TPI Polene Power is also in the process of conducting studies and jointly investing in the electricity business and other fuels such as natural gas power plants, solar power plants and wind power plants for further growth of the Company in the future.

8. Refuse Derived Fuel (“RDF”) Plant

TPI Polene Power Public Co., Ltd. (a 70.24% owned-subsubsidiary Company) operates a renewable energy business with an Alternative Fuel Power Plant or Refuse Derived Fuel (RDF), with a current production capacity to install 6,400 tons of community waste per day in the production process, which can produce 3,200 tons of RDF fuel per day. TPI Polene Power has constructed a warehouse for RDF storage of up to 100,000 tons, to ensure sufficient waste supply to support its RDF requirement as fuel to generate power for a period of one month. Presently, the Company has the largest waste processing plant in Thailand.

Currently, TPI Polene Power is investing in the installation of additional fuel machinery in RDF plants and is installing additional semi-mobile waste-sorting machines at landfill sites to produce RDF fuel to ensure the supply is sufficient fuel consumption for transport to TPIPP’s Power Plants. The RDF power plant, which installed additional boilers in early 2021, is expected to increase the capacity of the fuel power plant. In total, TPI Polene Power currently has an increased daily capacity to process up to 1,000 tons/

day of municipal waste or produce up to 300,000 tons per annum.

In addition, TPI Polene Power is installing machinery and equipment for 3 additional production lines to increase the RDF fuel production for sale to the Company's cement plants for coal replacement, with an investment of approximately Baht 1,000 million and has been operating since 2019. This initiative is expected to be completed in early 2021 to meet the demand for RDF fuel in cement plants of approximately 1,200-1,500 tons per day.

After the expansion of RDF fuel plant which is classified as the largest municipal RDF plant in the world, TPI Polene Power will be able to use RDF fuel, equivalent to 10,000 tons per day of community waste or municipal fresh waste, which reduces CO2 emissions by about 8.5 million tons/year and eliminates 3.5 million tons of community waste or municipal waste per year.

9. Oil Service Stations and NGV Gas Stations

TPI Polene Power Public Company Limited also operates oil service stations and NGV gas stations in Bangkok and provincial areas, under the logo "TPIPL". NGV gas stations have been granted promotion certificates from the Board of Investment. Currently, TPI Polene Power operates a total of eight oil service stations, one NGV gas stations, and three oil and NGV service stations in Bangkok and provincial areas.

In 2020, NGV sales volume in the country decreased by 25% compared to 2019, primarily due to the ongoing COVID-19 pandemic since early 2020, which affects the country's overall economy and directly affects the business operations of oil and gas stations, as well as the number of new cars to be launched into the market, which also use fuel oil and NGV. As a result, the volume of NGV-based vehicles has also decreased. Thus, the Company's fuel and NGV sales volume in 2020 decreased slightly compared to 2019 due to the impact of the COVID-19 epidemic as well.

In case the country's overall economy in 2021 recovers, the Company's sales of oil and NGV will also improve respectively. The Company continues to promote its promotional campaign for customers to exchange discount slips for refueling NGV products in TPI marts at the Company's service stations, which are distributed under TPI Group's products for a consistent advertising.

10. Organic fertilizer, TPI Probiotic for animal farming/fishery and healthcare products

10.1 Organic fertilizer and Organic Matter for Plants (99.99% - owned subsidiary of the Company)

TPI Polene Bio Organics Co., Ltd. (99.99% owned subsidiary of the Company). The project became operational in 2011 and is operated in the location within the area of our cement plant in Saraburi province. The organic fertilizer plant has been granted promotion certificates from the Board of Investment ("BOI"). TPI Polene Bio Organics Co., Ltd. obtained quality products in compliance with the standards of IFOAM for liquid fertilizer on 5 September 2011. Most importantly, TPIPL organic fertilizers are toxic-free and safe for human beings and the environment.

In 2020, the organic fertilizer market was affected by the COVID-19 pandemic, which led agricultural products to slump; also, the drought had a severe impact on the agricultural sector. Although the government has a budget to help the agricultural sector to alleviate the suffering of farmers, the production of cultivation in Thailand has decreased. As a result, the agricultural economy in 2020 shrunk by -3.4 to -2.4%, with the crop group shrinking to -4.6 to -3.6%. However, the value-added agricultural products project to promote organic agriculture or organic products is also highly desirable in both domestic and international markets. This is the driving force for farmers to enter into more organic agriculture. As a result, the demand for organic fertilizers to increase crop yield tended to grow consistently.

In 2020, TPI Polene anticipated that demand consumption for organic fertilizers would grow consistently, due to higher demand consumption for hygienic products in the market. TPI Polene expects that organic fertilizer market will be driven by the agricultural sector in the country under the government's strategic projects. These projects aim to seek out the market for agricultural crop yield by encouraging farmers to do organic farming to enhance the added-value of agricultural products, as well as the governmental sector promotion of the reduction in the use of chemicals.

10.2 Probiotic Products for Animal Farming/Fishery (99.99%-owned subsidiary Company)

TPI Bio Pharmaceuticals Co., Ltd (99.99%-owned subsidiary of the Company) is the manufacturer and distributor of livestock fishery and pets products. In 2020, as for the market for antibiotics products, it can be clearly seen that there is still a problem of epidemic diseases in the livestock business and fishery business, particularly in the use of antibiotic drugs, which have affected the drug-resistant diseases occurring among consumers. Thus, consumers have started to realize the hazards of antibiotic usage in livestock farming. Demand consumption for organic consumer products used in household families has expanded consistently, thereby leading to higher demand consumption for hygienic products, which has consequently driven organic products to grow consistently.

In 2021, the demand consumption for organic fertilizers, used in the agricultural sector, grew continuously, which had a good benefit for the organic bio-fertilizer business of TPI Polene. Concurrently, consumers have been aware of the dangers of using antibiotics in animals, which had a good direct impact on the probiotics markets and livestock products of TPI Polene Group.

10.3 Hygienic products for Healthcare (99.99%-owned subsidiary Company)

TPI Healthcare Co., Ltd. (99.99%-owned subsidiary of the Company) is the manufacturer and distributor of top organically hygienic products, which consumers are increasingly aware of for their health and are focused on using products made from natural substances. As a result, the organic product market has expanded extensively.

In this regard, the Company has launched healthcare products to support the expansion of the market for health beverages, and supplements for the health of consumers including beverages to prevent disinfection of both viruses and bacteria. In 2021, demand consumption for healthcare products in the market continued to grow high due to the COVID-19 pandemic. The Company has adapted to the New Normal condition by offering chemical-free hygiene products as follows:

1. Bio Knox Powder: A high quality natural calcium and vitamin C supplement, effective in the destruction of bacteria and viruses. It is produced with a clean and modern production process that is safe for consumers.
2. Microme Knox Solution and Microme Knox Powder: For spraying in residential areas to reduce the amount of bacteria and viruses.
3. Printemp Marie Rose Mouthwash, Ginger & Mint favors.

The above products have been tested and certified by the Faculty of Medicine, Siriraj Hospital and the Academic Service Center, Chulalongkorn University and are effective in the destruction of viruses including SARS-CoV2, PRRS, PDCoV, PCV2 and RVA, etc.

In addition, biosan products are used to improve water quality in environmental applications. It is used as a concentrate to recondition wastewater, which has contamination with high amounts of organic matter, grease, and oil. It was tested and certified by the Academic Service Center, Chulalongkorn University. Biosan was found to help reduce the value of organic matter in the COD and BOD form of wastewater. In addition, vegetable remover products are available.

11. Polene Solar® Products and EVA Emulsion and EVA Powder (TPI All Seasons Co., Ltd.)

(99.99%-owned subsidiary Company)

TPI All Seasons Co., Ltd. (99.99%-owned subsidiary of the Company) is the manufacturer and distributor of EVA film that is used for encapsulant for photovoltaic (PV) modules, which are ideal for crystalline, amorphous thin film solar panels under the brand names, Polene Solar® and Vistasolar®. In addition, EVA can be used in laminated safety glass and tempered glass screen protectors under the brand name, VistaSafe™. Wrap film, top sheet, masking film, multi-purpose plastic sheets, anti-slip mat applications are certified by the International Standard Organization, ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018. TPI All Seasons presently operates 10 production lines with an annual capacity of 20,100 TPA.

TPIPL is also the manufacturer and distributor of water-based adhesive and re-dispersible powder, which are widely used as adhesives for distribution. The main raw material of these products is the byproduct of ethylene and vinyl acetate, which are used to produce LDPE Homopolymer and EVA Copolymer. It is classified as a recyclable material, aiming to reduce greenhouse effects and carbon dioxide emitted in the atmosphere. We have developed proprietary EVA Emulsion and EVA Powder production technology and we are one of the few producers in Thailand that has developed and launched EVA Emulsion and EVA Powder into the market under the logo Polene(r).

In 2020, TPI All Seasons Co., Ltd had the following total revenues of 76% from EVA encapsulant film, 9% from blown film products, and 15% from anti-slip mat and other products respectively.

11.1 Solar Film Industry

In 2020, there were several competitors in the solar film industry both in the country and in the international market. Major solar film competitors are Chinese manufacturers, who established a production base in Thailand and commenced commercial operations in mid-2018. They are considered the major competitors of the Company because the raw materials of production in China are cheaper with good quality. In the international market, several manufacturers from Japan and Spain went out of business while several manufacturers in the solar film industry in China and South Korea are still in business. However, there is a solar film manufacturer from Saudi Arabia which has entered the Indian market, driving solar film competition to be more intense.

In 2020, production output and sales revenues for EVA film Encapsulate in the domestic market increased as the government had a policy to support the production of solar panels. In addition, there are several manufacturers of solar cells from offshore, such as China, that have established their production bases in Thailand. They are considered the major competitors of the Company in the domestic market. For the international market, sales revenues and profits have tended to increase as several manufacturers from

Japan and Spain have gone out of business; so manufacturers of solar cells in Europe, East Asia and Southeast Asia have turned to purchase additional products from the Company.

Therefore, the agreement also provides opportunities for higher demand consumption for solar cells in the global market. However, there are solar film manufacturers from Saudi Arabia, with relatively lower costs of production that have entered the Indian market and offered lower prices of solar film to manufacturers in India, causing the intense competition for the solar cell business in the international market.

11.2 EVA emulsion and EVA powder Business

In 2020, sales volume of EVA emulsion and EVA powder (which are widely used as adhesives) in the domestic market, grew constantly and are expected to grow consistently in 2021.

TPI All Seasons can continuously increase sales volume as customers mostly accept the products' quality standards and the pricing. TPIPL can also increase its competitive advantages to be able to compete in both the domestic and international markets so the Company can also grasp the majority of the market share for VAE business in the country in replacement of the formerly foreign manufacturers.

As for the export market, TPI All Seasons can expand its export sales to countries in the Middle East, such as Egypt, Saudi Arabia, United Arab Emirates, and countries in Southeast Asia such as Vietnam, Indonesia and Malaysia. TPI All Seasons can capture market share in China and India and is starting to consistently gain more market share in the international market.

12. Ammonium Nitrate and Nitric Acid (Operated by Thai Nitrate Co., Ltd. (a 99.99% - owned subsidiary Company))

Thai Nitrate Co., Ltd. (a 99.99% owned-subsi-dary Company) has a manufacturing plant located in Rayong, producing and selling two chemical products: ammonium nitrate and nitric acid. Ammonium nitrate is used in the production of cement production process, coal mining and quarry construction industry and nitrous oxide is for medical use, with sales volume accounts for 50% to local customers and 50% to overseas customers. Nitric acid is used to clean metal surfaces in industries such as the stainless steel industry, electronics industry, automotive industry, rubber glove industry, solar panel manufacturing industry and is used in the production of nitrocellulose for coating applications. Sales volume is 70% for local customers and 30% for overseas customers. Products of Thai Nitrate Co., Ltd. have been certified by industry standards (TIS) and adopted international quality management system. ISO14001:2015, ISO45001:2018, ISO5001:2018, ISO17025-2017 and HALAL.

In 2020, ammonium nitrate and nitric acid markets were relatively competitive in both domestic and international markets. In 2021, the outlook for the domestic ammonium nitrate market will grow due to the fact that cement producers and stone mills will expand production capacity to support government projects, including road construction projects, the construction of double track sky train, and high speed rail projects.

13. Petroleum Exploration and Production Technology (TPI Refinery (1997) Co., Ltd. (a 99.99% - owned subsidiary Company))

TPI Refinery (1997) Co., Ltd. (a 99.99% owned-subsi-dary Company) entered into the Petroleum Concession No. 2/2554/110 (addition) covering an area of petroleum exploration concession block No. L29/50 with the Ministry of Energy on 23 July 2020, as the concessionaire for extension of Petroleum Exploration and Production Technology for another third stage of exploration, commencing from the due date of Petroleum Exploration and Production Technology for 115 days, i.e. 19 September 2019 to 11 January 11 2021.

TPI Refinery (1997) Co., Ltd. is a concessionaire for Petroleum Exploration and Production Technology and has drilled 1 exploration well at the base of DKT-1, Dan Khun Thot Sub-district, Dan Khun Thot District, Chaiyaphum Province.

From exploration assessment which showed some potential reserves but not material enough for commercial operation.

In 2020, TPI Refinery (1997) Co., Ltd. reserved a provision for petroleum exploration assets of Baht 1,602 million as the expenses in the Profit and Loss Statement for the 12- month period ended 31 December 2020 due to non-commercial operation.

In addition, the Company has invested in other businesses through its subsidiaries and affiliated companies, and is involved in real estate development, the provision of life insurance services, and the manufacture and sale of packaging bags.

(2) Assets used in business operations include:

1. The fixed permanent assets of the Company and its subsidiaries

Total assets as shown in the consolidated financial statements are proprietary assets owned by the Company and its subsidiaries, which can be classified by group of business as follows:-

	31 December 2020 (Baht Million)	31 December 2019 (Baht Million)
Construction Materials	73,126.20	68,670.06
Petrochemical & Chemicals	10,015.70	8,154.43
Energy & Utilities	40,299.39	35,647.51
Agriculture	2,161.42	2,224.48
Others	580.99	566.00
Total	126,183.69	115,262.48
Unallocated assets	6,182.25	4,531.24
Total	132,365.94	119,793.72
Elimination of inter-segment assets	(8,457.04)	(5,425.57)
Total assets	123,908.90	114,368.15

Remarks: Information based on the Company's financial statements for the year ended 31 December 2020 and 31 December 2019.

2. Intangible assets of the Company and its subsidiaries

2.1 Rights or restrictions for operating of cement business

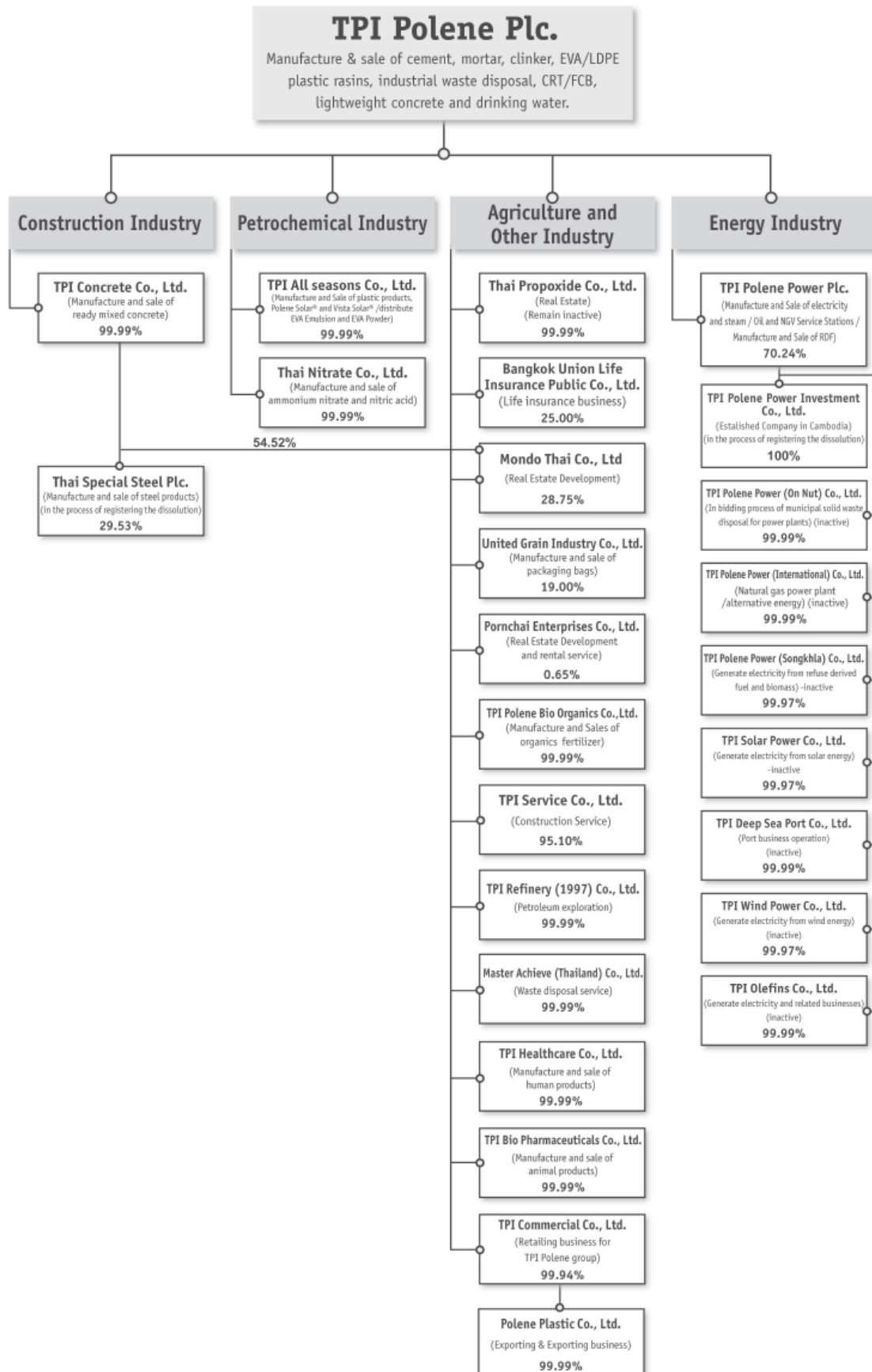
Limestone concessions as per details in item 16 in Notes to the Consolidated Financial Statements for the year ended 31 December 2020.

2.2 The Group has been granted privileges by the Board of Investment for the business operation as follows:

1. Petrochemical products (EVA)
2. Petrochemical products (EVA Liquid and EVA Resin)
3. Plastic film products (Blow Film)
4. Pyrolysis oil
5. Master batch, Compound Plastic and Compound Rubber
6. Power plants
7. Natural gas stations
8. Fuel production from garbage and waste (RDF)
9. Organic fertilizer and soil enhancers*
10. Solar Photovoltaic Encapsulant Business
11. Plastic film for solar cell
12. Concrete roof tiles and accessories
13. Fiber cement and accessories (FCB)
14. 30 MW Power Plants
15. 60 MW RDF-fired power plants
16. Freight Train
17. Plastic film
18. 70 MW RDF Power Plant
19. 150 MW RDF Power Plant
20. Ethylene Vinyl Acetate Emulsion and Ethylene Vinyl Acetate Powder
21. High Performance Ethylene Vinyl Acetate Copolymer (High Performance EVA)

1.3 Structure of the Group as at 31 December 2020

1.3.1 Structure of the Group



Affiliated Companies as of December 31, 2020

Company's name	Head Office Address	Business	Registered Capital (Baht)	Paid-up Capital (Baht)	Shareholding (%)
Subsidiaries					
1. TPI Concrete Co., Ltd.	26/56, 5 th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5350-74 Fax: (02) 678-5375-6	Manufacture and sale of ready-mixed concrete	2,000,000,000	2,000,000,000	99.99
2. TPI Polene Power Plc.	26/56, 8 th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of electricity and steam, RDF, exploration and manufacture petroleum including oil and NGV service stations	8,400,000,000	8,400,000,000	70.24
3. Thai Nitrate Co., Ltd.	26/56, 21 st Floor TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 2678-5450-2 Fax: (02) 678-5484	Manufacture and sale of ammonium nitrate and nitric acid	468,750,000	468,750,000	99.99
4. TPI All Seasons Co., Ltd.	26/56, 8 th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of plastic product, Polene Solar®, Vista Solar®, distribute EVA Emulsion and EVA Powder	450,000,000	450,000,000	99.99
5. Thai Propoxide Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5000, 678-5050 Fax: (02) 678-5001-5	Real Estate (Remain inactive)	1,000,000	250,000	99.99
6. Mondo Thai Co., Ltd.	26/56, 19 th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5470 Fax: (02) 678-6511	Property Developing	36,000,000	36,000,000	83.27*
7. TPI Commercial Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5470 Fax: (02) 678-6511	Retailing business for TPI Polene Group	1,000,000	100,000	99.94
8. TPI Refinery (1997) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5470 Fax: (02) 678-6511	Petroleum exploration	1,300,000,000	1,300,000,000	99.99
9. Polene Plastic Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Exporting and Importing business	10,000,000	10,000,000	99.93**
10. TPI Polene Bio Organics Co., Ltd.	26/56, G Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of organic fertilizer	3,300,000,000	3,300,000,000	99.99
11. TPI Service Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Construction service	10,000,000	4,600,000	95.10
12. TPI Healthcare Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of human products	10,000,000	5,050,000	99.99
13. TPI Bio Pharmaceuticals Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Manufacture and sale of animal products	10,000,000	5,500,000	99.99
14. Master Achieve (Thailand) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Waste disposal service	100,000,000	100,000,000	99.99

Remarks: * Held by TPI Polene Plc. and TPI Concrete Co., Ltd., which accounted for 28.75% and 54.52% respectively, totaling 83.27%.

** Held by TPI Commercial Co., Ltd. 99.99%.

Company's name	Head Office Address	Business	Registered Capital (Baht)	Paid-up Capital (Baht)	Shareholding (%)
15. TPI Polene Power (On Nut) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	In bidding process of municipal solid waste disposal for power plants (inactive)	750,000,000	187,500,000	70.23**
16. TPI Polene Power (International) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Natural gas power plant/ alternative energy (inactive)	100,000,000	100,000,000	70.23**
17. TPI Deep Sea Port Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Port business operation (inactive)	100,000,000	25,000,000	70.23**
18. TPI Polene Power (Songkhla) Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Generate electricity from refuse derived fuel and biomass (inactive)	1,000,000	1,000,000	70.22*
19. TPI Solar Power Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Generate electricity from solar energy (inactive)	1,000,000	1,000,000	70.22*
20. TPI Wind Power Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Generate electricity from wind energy Port business operation (inactive)	1,000,000	1,000,000	70.22*
21. TPI Polene Power Investment Co., Ltd.	274, Phoum 1, Samkat Tonle Basac, Phnom Penh Center, Phnom Penh, Cambodia	Generate electricity in Cambodia (in the process of registering the dissolution)	USD 125,000	USD 125,000	70.24***
22. TPI Olefins Co., Ltd.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 285-5090-9 Fax: (02) 213-1035	Generate electricity and related businesses (inactive)	1,000,000	1,000,000	70.23**

Remarks : * , ** , *** Held by TPI Polene Power Plc., which accounted for 99.97% , 99.99% and 100% respectively.

Associated Companies

1. Thai Special Steel Industry Plc.	26/56, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5350-74 Fax: (02) 678-5375-6	Manufacture and sale of Steel (in the process or registering the dissolution)	11,200,000,000	4,220,000,000	29.53
2. Bangkok Union Life Insurance Plc.	175-177, 8 th Floor, Bangkok Insurance Tower, Surawongse, Bangrak, Bangkok 10500 Tel: (02) 634-7323-30 Fax: (02) 634-7331	Life Insurance	500,000,000	500,000,000	25.00
3. United Grain Industry Co.,Ltd.	26/56, 27 th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-6988-97 Fax: (02) 678-6988-99	Manufacture and sale of Packaging bags	550,000,000	550,000,000	19.00

Other

1. Pornchai Enterprise Co.,Ltd.	26/56, 22 th Floor, TPI Tower, Chan Tat Mai Rd., Thungmahamek, Sathorn, Bangkok 10120 Tel: (02) 678-5490-3 Fax: (02) 678-5494	Real estate business and rental service	4,599,919,600	4,599,919,600	0.65
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1.3.2 Shareholding Structure

Top 10 major shareholders as at 30 December 2020 (latest closing date):

Shareholders	Number of Shares	Shareholding (%)
1. Leophairatana Enterprises Co., Ltd. 1/	4,794,734,490	24.998
2. Thai Petrochemical Industry Co., Ltd. 1/	3,184,553,660	16.603
3. Mr. Nares Ngamapichon	890,000,000	4.640
4. Mrs. Orapin Leophairatana	874,646,240	4.560
5. Mr. Prayad Liewphaitana	867,122,740	4.521
6. Mr. Pakorn Leopairut	862,745,810	4.498
7. Mr. Pramuan Leophairatana	808,900,000	4.217
8. Bangkok Bank Public Company Limited	657,693,240	3.429
9. Miss Pattrapan Leophairut	629,077,220	3.280
10. Mr. Prateep Tangmatitham	391,315,100	2.040

Remarks : 1/ Majority shares held by the Leophairatana family

1.4 Ordinary Share

As of 31 December 2020, the registered capital of the company is Baht 23,805.50 million consisting of 23,805,500,000 ordinary shares, at the par value of Baht 1 each. Paid-up capital is Baht 19,180.50 million consisting of 19,180,500,000 ordinary shares, at the par value of Baht 1 each.

1.5 Debentures

1.5.1 Debentures

As of 31 January 2021, the Company issued unsubordinated/unsecured onshore Debentures, in registered form with debenture holders' representatives. Details of Debenture are summarized as follows:

Debenture Series	Amount Baht)	Interest Rate (p.a.)	Term	Credit Rating	Outlook
TPIPL214A	1,600,000,000	4.35%	5 Years due A.D.2021	BBB+	Positive
TPIPL218A	3,580,000,000	4.90%	6 Years due A.D.2021	BBB+	Positive
TPIPL224A	1,200,000,000	4.60%	6 Years due A.D.2022	BBB+	Positive
TPIPL228A	3,848,000,000	5.20%	7 Years due A.D.2022	BBB+	Positive
TPIPL234A	2,640,500,000	4.80%	7 Years due A.D.2023	BBB+	Positive
TPIPL214B	8,000,000,000	3.30%	3 Years due A.D.2021	BBB+	Positive
TPIPL221A	3,530,000,000	4.10%	3 Years due A.D.2022	BBB+	Positive
TPIPL221B	100,000,000	3.80%	2 Years 10 Months 30 days due A.D.2022	-	-
TPIPL231A	2,820,000,000	3.90%	3 Years 6 Months due A.D.2023	BBB+	Positive
TPIPL251A	2,988,000,000	4.90%	5 Years 6 Months due A.D.2025	BBB+	Positive
TPIPL231B	4,382,700,000	3.50%	3 Years due A.D.2023	BBB+	Positive
TPIPL244A	4,127,000,000	4.25%	3 Years 9 Months due A.D.2024	BBB+	Positive
TPIPL24NA	3,515,300,000	4.25%	4 Years due A.D.2024	BBB+	Positive
TPIPL25NA	3,410,700,000	4.50%	5 Years due A.D.2025	BBB+	Positive
Total	45,742,200,000				
TPIPP21NA	4,000,000,000	3.90%	3 Years due A.D.2021	BBB+	Positive
TPIPP22NA	4,000,000,000	3.50%	3 Years 3 Months due A.D.2022	BBB+	Positive
TPIPP247A	3,944,000,000	3.90%	3 Years 11 Months due A.D.2024	BBB+	Positive
Total	11,944,000,000				
Grand Total	57,686,200,000				

1.5.2 Short term loans in form of Bill of Exchange

As 31 December 2020, the Company's outstanding debt in the form of bill of exchange was Baht 1,075 million.

1.6 Dividend Payment Policy

The Company's dividend payment policy will be considered from the operational results of single financial statements of the Company. Dividend payment will be paid to shareholders by also taking into consideration of other factors such as liquidity, cash flow and financial status of the Company. The annual dividend payments shall be subject to the annual shareholders meeting's approval.

In addition, the Board of Directors of the Company may from time to time approve the payment of interim dividends to shareholders, where it is justified by the profits of the Company. After the payment of such interim dividends, the transaction shall be reported to shareholders at the next meeting.

Separate Financial Statement	2018	2019	2020
Net Profit per share (Baht)	0.013	0.073	0.079
Dividend per share (Baht)	0.02	0.06	0.06*
Par Value per Share (Baht)	1.00	1.00	1.00
Dividend Payout Ratio (%)	153.85	82.19	75.95

Remarks: * The dividend payment for the Company's 2020 operating results was divided into an interim dividend payment for the first half of 2020 at the rate of Baht 0.03 per share, which was already paid to shareholders, and the payment for the second half of 2020 at Baht 0.03 per share, which has been approved by the Board of Directors in the Company's Board of Directors' meeting no.2/2021 and is required to be approved in the 2021 Annual General Shareholder's Meeting.

2.Risk Management

TPI Group has constantly managed risks to be at controllable and acceptable levels. The Company has already implemented a management information system ("MIS"), which covers various areas of management to identify different aspects of risk, in order to ensure that each operation unit operates so as to achieve its targets. Risk management can be classified as follows:

2.1 Risks associated with potential foreign currency exchange rate fluctuations

As at 31 December 2020, the Company's major long-term loans are mainly denominated in Baht currencies, representing 99.92% while the remaining long-term borrowing is denominated in Euro and USD currency accounting for 1%. Therefore, the Company has impact from risks associated with the exchange rate fluctuation to some extent.

TPIPL Group of Company also has debt liability in the form of working capital, a significant amount of which is denominated in USD currency while part of it is denominated in Euro currency. However, most of the Company's income is generated in US dollars, which is higher than the payment of expenses in foreign currencies (in both US dollars and Euro based). The Company has a policy to mitigate foreign exchange risk through natural hedging by balancing its foreign currency revenues and expenses. These measures will partly protect the company against currency fluctuations, by balancing its cash flow in foreign currencies, revenue and expenses structure. The Company can use a number of financial mechanisms against risk caused by fluctuations in currency exchange rates by exporting products for payment in US dollars and maintaining a US dollar deposit account for repayment of principal and interest to creditors, to mitigate foreign exchange risk through natural hedging.

In addition, the Company has also applied a policy to mitigate risk associated with foreign exchange to use financial instruments, which is apt for hedging to enter into a forward exchange contract and/or cross currency swap, as considered appropriate; to hedge its foreign exchange exposure, the Company will closely monitor potential adverse currency movements, by balancing the income generated in US dollars and the payment of expenses in foreign currencies.

The Company has applied a policy to mitigate risk associated with foreign exchange to use financial instruments to some extent. However, as of 31 December 2020, the Company and its subsidiaries did not have a balancing amount regarding a forward exchange contract and /or cross currency swap as above.

2.2 Risk associated with potential coal price fluctuations

Coal is a principle source of kiln fuel in the manufacture of cement. Coal price fluctuation depends on a supply from major exporters in Australia and Indonesia. In case that demand for coal from major importers of coal in China increases, coal prices will be adjusted upward. Therefore, the Company's fundamental approach to managing coal price fluctuation risk is to identify extensive supply sources for coal, and establish import sales contracts throughout the entire year, with an appropriate allocation of short-term and long-term contracts, in order to efficiently manage cement production costs.

2.3 Risk associated with credit provision

To mitigate credit risk stemming from debtors' potential failure to comply with their contracts, the Company has a policy to conduct business transactions with reliable trade partners by selling cement products based on cash and credit terms. Usually, customers are required to give collateral in the form of a letter guarantee or bank guarantee in return for customer credit lines. A Credit Committee has been appointed to consider proper criteria for offering credit lines to customers and to develop a monitoring process for cash collection from customers.

As at 31 December 2020 and 31 December 2019, Allowance for Doubtful Debt percentage to Total Account Receivable of the Company was 1.37% and 1.62%, respectively.

2.4 Risk associated with Product Price's fluctuation

The Company's plastic resins' price fluctuation has a direct impact on the business profitability of the Group. However, the Company manufactures and sells a variety of products. Thus, cement products are regarded as a typically fundamental consumer item in that its price fluctuation depends on the health of the nation's economy. Revenue receipts from cement sales balances with the revenues from export sales of plastic resins while commodity's global price rise will drive coal prices to increase accordingly. All in all, cement production costs will be higher. Nonetheless, all these factors will also impact a plastic resin price hike, leading to an increase in plastic resins price and its higher revenues. These measures will partly protect the company against price fluctuations, by balancing revenue structure and net revenue earned by TPIPL Group.

2.5 The risk associated with climate change

The risk of sudden climate change and severe natural disasters were caused by greenhouse gas emissions in the atmosphere. TPI Polene Group is aware of the risks of such changes, which may affect the group's operations in particular areas such as higher global temperatures, sudden flooding, etc. TPI Polene Group has established guidelines to improve the process to increase energy efficiency as well as the use of waste as a renewable fuel in lieu of coal. In this regard, the Company plans to reduce greenhouse gas emissions. Additional activities include forestry to absorb greenhouse gases, as well as carbon offset through mechanisms to drive access to low-carbon societies.

2.6 The risk associated with digital technological advancement

The rapid change in digital technology has been abrupt and has had an impact on the formulation of business operations, consumer behavior, market conditions, and higher competition. TPI Polene Group has prepared to develop the organization so as not to lose competitiveness by adjusting its business strategy, developing online and offline sales channels so that customers can access various channels of goods and services in order to meet the lives of the next generation and prepare employees to meet the changing demand of their customers.

3. Management Discussion and Analysis: MD & A

3.1 Operating Results and Financial Status for 2020

Revenues

Total consolidated revenues from sales in 2018, 2019 and 2020 were Baht 34,993 million, Baht 37,041 million and Baht 34,276 million respectively. Sales revenues in the construction business sector accounted for 57.1%, 55.8% and 51.0% of total revenues from sales respectively.

Sales revenues in petrochemicals and chemicals business accounted for 23.4%, 21.3%, and 22.2% of total revenue from sales respectively. Sales revenues generated from the energy and utilities businesses sector accounted for 19.1%, 22.6% and 26.5% of total revenues from sales respectively.

In 2020, total sales revenues generated from the construction business sector decreased by 15.5%, however, domestic cement sales volume increased by 9.8%, with the average sale price of domestic cement and the average mixed concrete price declining in line with the economic direction.

In addition, sales revenue from the petrochemical business declined by 3.6% as average petrochemical product sales prices fell 9.5%, while sales volumes of petrochemical products increased by 7.1%, and its spread rose.

In 2020, sales revenues generated from the energy and utilities businesses sector increased by 8.5% from the previous year, primarily due to an increase in units of the electricity sales from the energy and utilities businesses, which increased by 5.4%, resulting from an installation of 2 boilers (B13 and B14) to generate additional electricity output. Thus, TPIPP could sell more electricity to EGAT.

In 2020, total sales revenues generated from the construction business sector decreased by 15.5% as the average price of cement and concrete increased by 2.0% and 6.6% respectively. Sales revenues generated from the petrochemical business decreased by 3.4% to be in line with decrease in the selling price of 6.8%, whereas sales volume increased by 7.0%.

Sales revenues in the petrochemical business accounted for 23.4%, 21.3% and 22.2% of total revenue from sales in 2018, 2019 and 2020 respectively.

In addition, sales revenue from the petrochemical business declined by 3.6 % as average petrochemical product sales prices fell 9.5%, while sales volumes of petrochemical products increased by 7.1 %, while its spread rose by 7.1 %.

In 2020, sales revenues generated from the energy and utilities businesses sector increased, primarily due to an increase in units of the electricity sales from the energy and utilities businesses, which increased by 5.4%, with an installation of 2 boilers (B13 and B14) to generate additional electricity output. Thus, TPIPP could sell more electricity to EGAT.

Other revenues, which were comprised of revenues from transportation, net foreign exchange gain, investment income and other revenues in 2018, 2019 and 2020 were Baht 2,321 million, Baht 2,228 million and Baht 1,911 million respectively. Other revenues in 2020 decreased compared with the same in the previous year because the Company recorded net exchange loss of Baht 12 million in 2020 while, in 2019, the Company recorded net exchange gain of Baht 405 million.

Total consolidated revenues in 2018, 2019 and 2020 were Baht 37,315 million, Baht 39,268 million and Baht 36,187 million respectively.

Cost of Goods Sold

Consolidated cost of goods sold in 2018, 2019 and 2020 were Baht 28,018 million, Baht 28,404 million and Baht 24,937 million respectively, which accounted for 80.1%, 76.7% and 72.8% of total revenues from sales. As a result, gross profit margins in 2018, 2019 and 2020 represented 19.9%, 23.3% and 27.2% of total revenues from sales respectively. Gross profit margin in 2020 increased as compared with the same in 2019, primarily due to an increased proportion in revenues from the energy and utilities businesses, the gross profit margin of which was relatively high, from 22.6% in 2019 to 26.5% in 2020, with an reduction of production cost from enhancing the machine efficiency of cement plants, has improved the margins of the construction materials sector as well as an improvement of margins in the petrochemical business sector from sales with higher spreads.

Selling and Administrative Expenses

Consolidated selling and administrative expenses in 2018, 2019 and 2020 were Baht 5,965 million, Baht 6,144 million and Baht 4,912 million, which accounted for 17.0%, 16.6% and 14.3% of total revenues from sales respectively. Selling and administrative expenses as a percentage of revenues in 2020 decreased due to lower distribution and transportation costs from lower clinker export volumes in 2020 compared to export clinker sales in 2019.

Loss on impairment of assets

In 2020, the Company and its subsidiary Group recognized a loss on impairment of petroleum exploration assets of Baht 1,602 million as a result of the cancellation of the petroleum exploration due to the exploratory wells, which have not identified proven reserves or concessions have identified proven reserves but that haven't been found to be commercially viable. Loss on impairment of assets was recognized as expenses in the consolidated financial statements for the year ended 31 December 2020.

Interest Expenses (Cost of financial debt)

In 2018, 2019 and 2020, the Company and its subsidiaries recorded interest expenses of Baht 1,719 million, Baht 1,959 million and Baht 2,015 million respectively. The interest expenses in 2020 was higher than that of 2019 as the Company utilized loans as well as the issuance and offering for sales of debentures for various investment projects as well as an investment for the development of production efficiency to reduce production costs in power plants and cement projects.

Net Profit

The Company and its subsidiaries recorded normal operating profit (loss), excluding gain (loss) from foreign exchange, loss on impairment of assets and income tax (expense) of Baht 1,261 million, Baht 2,338 million, and Baht 4,379 million in 2018, 2019 and 2020 respectively.

In 2018, 2019 and 2020, the Company and its subsidiaries registered net profits of Baht 1,425 million, Baht 2,765 million and Baht 2,839 million while profit attributable to owners of the parent company were Baht 324 million, Baht 1,394 million and Baht 1,498 million respectively, or basic earnings per share attributable to owners of the parent of Baht 0.016 of Baht 0.016, Baht 0.073, and Baht 0.079 respectively. An increase of net profit in 2020 was mainly due to an increase in sales revenue in the energy and utilities sectors, the profit margin of which is relatively high, as well as a higher profit margin in both the construction sector and the petrochemical sector.

Financial Status and Financial Ratio

Assets

At year-end 2018, 2019 and 2020, total consolidated assets were Baht 110,488 million, Baht 114,368 million, and Baht 123,909 million respectively. The increase in assets value was mainly due to additional investments in various projects in the energy and utilities businesses sector and the development of production efficiency to reduce production costs in cement projects and petrochemical plants.

At year-end 2018, 2019 and 2020, total consolidated current assets were Baht 28,391 million, Baht 25,378 million, and Baht 27,295 million respectively. Cash and cash equivalents, and other current financial assets increased as the Company and its subsidiaries issued additional debentures in preparation for repayment of the entire matured debentures due in 2021 and used for improvement of production efficiency, as working capital in the Company's operations and to support investments in the Group of the Company. Inventory accounted for 50.5% of 55.9%, and 40.7% of total current assets in 2018, 2019, and 2020, equating to average inventory turnover periods of 176 days, 181 days, and 183 days respectively. Trade accounts receivable (after the provision of doubtful debts) represented 15.2%, 17.6%, and 17.1% of total current assets, which equated to an average collection period of 39 days, 43 days, and 49 days. The average debt collection period was longer due to the COVID-19 pandemic. The Company has implemented periodic debt repayment assistance measures for debtors to alleviate the burden of paying according to the changing circumstances.

As of 31 December 2018, 31 December 2019, and 31 December 2020, the property, plant and equipment of the Company and its subsidiaries were Baht 79,456 million, Baht 86,252 million, and Baht 92,925 million respectively. The increase in the property, plant and equipment in 2020 was mainly due to additional investments in various projects in the energy and utilities, cement and plastic resin businesses sectors.

Liabilities

Total consolidated liabilities were Baht 59,551 million, Baht 62,875 million, and Baht 71,737 million at the end of 2018, 2019, and 2020 respectively. The debt liabilities increased because the Company and its subsidiaries issued and offered additional debentures to refinance the matured debentures in 2021 and for repayment of short term loans from financial institutions. The remaining portion has been utilized for various investment projects and for working capital of the Group of the Company and its subsidiaries.

Trade account payables at year-end 2018, 2019, and 2020 were Baht 3,002 million, Baht 2,563 million, and Baht 2,878 million, equating to an average payment period of 37 days, 35 days, and 39 days respectively.

As of 31 December 2018, 31 December 2019, and 31 December 2020, the Company and its subsidiaries had short-term loans from financial institutions of Baht 2,644 million, Baht 2,940 million, and Baht 1,315 million respectively; long-term loans from financial institutions of Baht 7,812 million, Baht 4,589 million, and Baht 2,989 million respectively; and debentures of Baht 40,000 million, Baht 45,700 million, and Baht 57,686 million respectively. In 2020, the Company and its subsidiaries issued and offered for sale of addition debentures to refinance the matured debentures in 2021 and for repayment of both, short and long term loans from financial institutions; investments in various projects in energy and utilities businesses sector; for development of production efficiency to reduce production costs in power plants project and cement projects and for working capital of the Company and its subsidiaries.

Shareholders' Equity

As of 31 December 2018, 31 December 2019, and 31 December 2020, shareholders' equity was Baht 50,937 million, Baht 51,493 million, and Baht 52,172 million respectively. Value of shareholders' equity increased as the Company and its subsidiaries' net profit from operations increased during the period.

Capital Structure

As of 31 December 2018, 2019, and 2020, the debts to equity ratios were at 1.17 times, 1.22 times, and 1.38 times respectively whereas Interest Bearing Debt to Equity ratio equated 0.99, 1.03, and 1.20 times respectively and Net Interest Bearing Debt (after deduction of cash, cash equivalents and other current financial assets) to Equity ratio equated 0.82, 0.93, and 1.00 times as of 31 December 2018, 2019 and 2020 respectively.

In 2020, debt to equity ratio was higher compared with the same in 2019 as the Company and its subsidiaries issued and offered for sale of additional debentures to refinance the matured debentures in 2021 and for investment in various projects. As of 31 December 2020, consolidated cash and cash equivalent were Baht 6,658 million, with other current financial assets of Baht 3,449 million, making total financial liquidity of Baht 10,106 million.

Financial Liquidity

In 2018, 2019, and 2020, consolidated net cash flow from operating activities of the Company and its subsidiaries were Baht 3,762 million, Baht 7,770 million, and 11,876 million respectively. The increase in consolidated net cash flow from operating activities in 2019 and 2020 was primarily a result of an increase in sales revenues generated from energy and utilities businesses sectors and clearance of clinker stock.

In 2018, 2019, and 2020, net cash flow from investing activities of the Company and its subsidiaries were Baht (7,369) million, Baht (8,150) million, and Baht (12,195) million respectively as the Company consistently invested in plants including machinery and equipment of Power Plants, RDF- Fuel Plant, and Fiber Cement Project, for the development of production efficiency in its power plants project, various projects in the energy and utilities businesses sector and for the development of production efficiency to reduce production costs in cement and petrochemical projects.

In 2018, 2019, and 2020, net cash flow from financing activities of the Company and its subsidiaries were Baht 5,047 million, Baht (1,248) million, and Baht 4,245 million respectively. The Company received the proceeds from the issuance and sale offering of debentures to refinance the matured debentures and for prepayment of both short and long term loans from financial institutions and investments in various projects as mentioned above. As a result, by year-end 2018, 2019, and 2020, consolidated cash and cash equivalent were Baht 1,448 million, Baht (1,623) million, and Baht 3,914 million respectively.

In 2018, 2019 and 2020, Interest Coverage Ratio equated 3.39, 4.13 and 4.12 times respectively, which increased accordingly because of the improved operating results primarily in energy and utilities businesses sectors. In addition, Debt Service Coverage Ratio was 2.37, 2.07 and 2.34 times respectively whereas the Company and its subsidiaries' Interest Bearing Debt to Equity ratio was 0.99, 1.03, and 1.20 times while Net Interest Bearing Debt (after deduction of cash, cash equivalents and other current financial assets) to Equity Ratio was 0.82, 0.93, and 1.00 times respectively.

Source of Funds

The Company and its subsidiaries had sufficient funds for various project investments while the source of funds were from the issuance and sale offering of debentures and Bill of Exchange, loans from financial institutions from both domestic and international institutions, as well as cash flow from business operations of the Company and its subsidiaries and the loans from financial institutions to be used as working capital of the Company.

Financial Debts of the Company and its subsidiaries as at December 31, 2020 are summarized as follows:

Debentures payable Named holder Non- the Company and its subsidiaries, totaling Baht 57,686.20 million

1. Outstanding debt of subordinated unsecured debentures of the Company and its subsidiaries were Baht 57,686.20 million. The terms and conditions for debentures agreement are as follows:-
 - 1.1 The debentures of Baht 15,435.70 million, issued under medium term note program B.E 2562 of TPIPL under the condition that it has to maintain Debt to Equity Ratio (Debt means interest bearing debt) at the end of each quarter or at year end not greater than 2:1 (for the Company and its subsidiaries) throughout the term of the debentures.
 - 1.2 Other kinds of TPIPL's debentures of Baht 30,306.50 million, issued under the condition that it has to maintain Debts to Equity Ratio (Debt means interest bearing debt) at the end of each quarter or at year end not greater than 1.5:1 (for TPIPL and its subsidiaries) throughout the term of the debentures.
 - 1.3 TPI Polene Power's debentures of Baht 11,944 million, issued under medium term note program B.E 2562 of TPI Polene Power under the condition that it has to maintain Debts to Equity Ratio (Debt means interest bearing debt) at the end of each quarter or at year end not greater than 1.75:1 (for TPI Polene Power and its subsidiaries) throughout the term of the debentures.
2. As of 31 December 2020, the Company and its subsidiaries' Net Interest Bearing Debts to Equity Ratio equated 1.2:1, which was not higher than 1.5:1 (which is subject to the conditions set forth in the debentures agreements in item 1.1) and 1.02:1 times, not exceeding the rate required to maintain at 2:1 as stated in item 1.2 as above.

As at December 31, 2020, TPI Polene Power and its subsidiaries' Net Interest Bearing Debts to Equity Ratio equated 0.45:1, which was not higher than 1.75:1 times, as per the terms and conditions stipulated in the debentures agreements of TPI Polene Power in item 1.3 as above. Net Interest Bearing Debts to Equity Ratio (after TPI Polene Power's cash, cash investment and current investments) equated to 0.33:1.

3. TPIPL's unsecured long-term Loan Agreements with a local financial institution.

TPI Polene' outstanding unsecured long-term loans of 2 contracts with a local financial institution were Baht 2,429 million for a period of 3.50 years. (Comprising outstanding debt repayment of Baht 1,286 million to be due on 28 May 2022 and outstanding debt repayment of Baht 1,143 million to be due on 28 May 2022 and 29 December 2022 respectively.) with conditions to maintain the interest-bearing debt to equity ratio not exceeding 1.5 : 1.

As of 31 December 2020, the Company's Interest Bearing Debts to Equity Ratio equated 1.2: 1, which was not higher than 1.5:1 times as per the terms and conditions stipulated in the loan agreements.

4. TPIPL's secured Loan Agreement with a local financial institution to purchase machinery and equipment.

TPIPL's outstanding secured loans with a local financial institution to purchase machinery and equipment were Baht 509 million for a period of 5 years (to be due on 27 August 2024). The conditions were to maintain Interest Bearing Debt to Equity Ratio to be not exceeding 1.5:1, Debts to Equity Ratio to be not greater than 2: 1 and Adjusted Debt Service Coverage Ratio to be not exceeding 1.2:1.

As of 31 December 2020, TPIPL's Interest Bearing Debts to Equity Ratio equated 1.2: 1, which was not higher than 1.5:1 times, Debts to Equity Ratio equated 1.38: 1 and Adjusted Debt Service Coverage Ratio equated 2.34:1, which was not less than 1.2:1 times as per the terms and conditions stipulated in the loan agreements.

4. Unsecured loan obligations from domestic financial institutions for machinery imports

The Company has unsecured loan debt from the supplier credit for the import of machinery. The outstanding balance is equivalent to Baht 51 million. The repayment period is 7 years (the payment is due on 31 May 2022).

5. Bill of Exchange Debt

The Company and its subsidiaries Bill of Exchange Debt totaling Baht 1,315 million, consisting of TPI Polene's Bill of Exchange Debt of Baht 1,075 million and TPI Polene Power's Bill of Exchange Debt of Baht 240 million. The Company and its subsidiaries utilized Bill of Exchange proceeds for working capital for business operations.

6. Short-term loans for turnover in business operations

As at 31 December 2020, the Company and its subsidiaries have no outstanding debt from trust receipts. (TR)

Ratio of borrowings from financial institutions to total liabilities decreased from 0.06: 1 as of 31 December 2020 and 0.12: 1 as of 31 December 2019 as the Company and its subsidiaries have a policy to choose channel of borrowings through debentures financing due to no collateral with lower cost of funds.

Net Interest Bearing Debt to EBITDA Ratio reduced from 6.47 times as of 31 December 2019 to 5.57 times as of 31 December 2020, primarily due to an increase in EBITDA, which was primarily due to continued improvement in performance in cement, plastic resins and power plants businesses.

As of 31 December 2020 and 31 December 2019, quick ratio was 0.55 times and 0.53 times respectively.

Use of proceeds from the offering for sale of debentures

In 2020, the Company issued and sold 3 tranches of debentures, totaling Baht 15,600 million, which can be summarized as follows:

Proceeds Utilization	Amount (Million Baht)	Period of proceeds utilization	Progress of proceeds utilization
1. To invest in cement plant machinery to improve production efficiency.	1,400	Within 2021	It will be fully utilized by 2021.
2. To refinance the matured debentures	3,000	January 2021	Fully utilized
Total amount of Debentures no. 1/2563	4,400		
1. To refinance the matured debentures in July 2021	2,000	July 2020	Fully utilized
2. To refinance the matured debentures August 2021	2,200	August 2020	Fully utilized
Total amount of Debentures no 2/2563	4,200		
1. To refinance the matured debentures on April 1, 2021	1,600	April 1, 2021	To settle on due date
2. To repay partial debenture debts matured on April 26, 2021	5,400	April 26, 2021	To settle on due date
Total Debentures no 3/2563	7,000		
Total amount	15,600 *		

Note: * On 4 March 2021, the Company issued and offered for sale of additional debentures in the amount of Baht 4,000 million and utilized the proceeds of Baht 2,600 million to repay the partial of debentures due in April 2021 and utilized the proceeds of Baht 1,400 million for efficiency improvement of cement plant and plastic resins plants.

Commitments with non-related parties

As at 31 December 2020, the Company and its subsidiaries' Commitments with non-related parties can be summarized as follows:

1. Commitments binding to supply contracts in the amount of Baht 1,261 million, the source of funds of which was generated from net cash flow from business operations.
2. Commitments binding to car rental contracts and lease agreements, the legal obligation of which can be divided into a 1-year period in the amount of Baht 0.03 million, the source of funds of which was generated from net cash flow from business operations.
3. Commitments binding to a Letter of Credit (import of raw material and spare parts) in the amount of Baht 604 million, purchase contracts in the amount of Baht 471 million, and a bank guarantee in the amount of Baht 322 million, the source of funds of which was generated from working capital credit line from financial institutions.

Operational Results classified by Business Sector

Construction Business

In 2020, domestic cement sales volume and ready-mixed concrete sales volume increased compared to 2019, supported by continued construction of the government infrastructure projects. Meanwhile, the private sector has been slowed down, which was affected by the covid-19 pandemic, average cement price and ready-mixed concrete price decreased as compared with the same in 2019. However, the operational performance in the construction business sector improved compared with the same in 2019.

In 2019, cement sales volume increased whereas ready-mixed concrete sales volume decreased. Average cement price (both in the domestic and international market) and ready-mixed concrete price increased as compared with the same in 2018, leading to improved operational results in the construction business sector.

In 2018 compared to 2017, domestic cement sales volume and ready-mixed concrete sales increased due to increased large-scale construction projects in both the public and private sectors. The average cement price and ready-mixed concrete price in the domestic market increased over 2017.

In 2021, it is anticipated that demand consumption in the construction sector tend to improve because of additional investment in infrastructure construction projects from the government sector, resulting in an increase in sales revenues and operation performance of the manufacturers in the construction sector.

Petrochemical and Chemical Business

In 2020, sales volumes of plastic products increased over 2019 whereas average selling price and production cost dropped accordingly to be in line with ethylene price decrease, resulting in a better operating performance of the overall petrochemical and chemical business due to increased sales volumes and higher spreads, with gross margins in 2020 increasing compared to 2019.

In 2019, sales volumes of plastic products increased from 2018 whereas average selling price dropped accordingly to be in line with ethylene price decrease, resulting in a better operating performance of the overall petrochemical and chemical business and a gross profit margin increased from 13.0% in 2018 to 17.7% in 2019.

Sales volume of plastic resin in 2018 increased from 2017, with the average selling price of plastic resins increasing in line with the cost of ethylene. Operating performance Petrochemicals and chemicals increased, with profit margins increasing from 11.6% in 2017 to 13.0% in 2018.

In 2021, the Company anticipates that the petrochemical and chemical business will tend to improve, which will result in a better operating performance of the overall petrochemical and chemical business.

Energy and Utility Business

In 2020, total sales revenue increased by 8.5% compared with the same in 2019, which was due to an increase in units of power sales as TPIPP has installed additional boilers to increase its power utilisation rate, resulting in an increase in electricity sales to EGAT. Out of the sales revenues in 2020, revenue generated from power plants, oil and gas stations services represented 95.2% and 4.8% respectively.

In 2019, total sales revenue increased by 24.9% compared with the same in 2018 as unit of power sales increased by 56.9%, resulting in a better operating performance of the energy and utilities business in 2019. Out of the sales revenues in 2019, revenue generated from power plants, oil and gas stations services represented 93.2% and 6.8% respectively.

In 2018, total sales revenues increased by 59.4% compared with the same in 2017, which was due to an increase in power sales unit generated from 100 MW RDF-fired power plant (TG6 and TG4) and 70 MW power generation (TG 7 - with a permitted power generation capacity of 40 MW), which commenced commercial operations on 5 April 2018 and 18 August 2018 respectively. Out of the sales revenues in 2018, revenue generated from power plants represented 90.7% while sales revenue from oil and NGV station represented 9.3%.

Agriculture Business

In 2020, total sales revenue increased by 13.60% compared with the same in 2019 as a result of marketing campaign and offering of a wide range of products including grease removal, dishwashing liquids, alcohol gels, etc., which became known, resulting in an improved revenue and better operating performance in the TPI Polene Group.

In 2019, total sales revenue decreased by 16% mainly due to the contraction in the agricultural sector on a result of drought effect and lower price of agricultural products.

In 2018, total sales revenues slightly decreased by 0.3% mainly due to slump in agricultural price (excluding rice crop) and the lower consumption of organic fertilizer by farmers to lower cost of production.

In 2021, the Company has introduced and launched a variety of natural hygiene products, including Bio Knox powder for drinking to kill bacteria and viruses, Microme Knox solutions, and Microme Knox Powder for disinfection spraying in residential areas, and mouthwash. The above products have been tested and certified by the Faculty of Medicine, Siriraj Hospital and Academic Service Center of Chulalongkorn University. It is effective against viruses including SARS-CoV2, PRRS, PDCoV, PCV2 and RVA, as well as Biosan for improving water quality in environmental applications. It has been tested by the Chulalongkorn University Academic Service Center. As the Company's products become well-known among users in the market, the Company anticipates that operating performance of the overall agriculture business will improve accordingly.

Summary of Consolidated Financial Statements of TPI Polene Plc. for the year 2018, 2019 and 2020
Statements of Financial Position (Consolidated)

Statement of Financial Position	Accounting Period ended 31 December					
	2018		2019		2020	
	"000" Baht	Ratio	"000" Baht	Ratio	"000" Baht	Ratio
Total current assets	28,391,149	25.70	25,377,527	22.19	27,294,907	22.03
Property, plant and equipment	79,455,918	71.91	86,252,301	75.42	92,924,990	74.99
Other non-current assets*	2,640,857	2.39	2,738,317	2.39	3,689,005	2.98
Total Assets	110,487,924	100.00	114,368,145	100.00	123,908,902	100.00
Total current liabilities	19,220,280	17.40	18,660,584	16.32	26,718,296	21.56
Long-term loans from financial institutions	6,235,392	5.64	2,984,304	2.61	1,380,711	1.11
Other non-current liabilities**	34,095,663	30.86	41,229,811	36.05	43,638,158	35.22
Total Liabilities	59,551,335	53.90	62,874,699	54.98	71,737,165	57.90
Equity						
Authorized share capital	24,815,000	22.46	23,805,500	20.81	23,805,500	19.21
Issued and paid-up share capital	20,190,000	18.27	19,180,500	16.77	19,180,500	15.48
Treasury shares	(1,682,625)	(1.52)	-	-	(259,637)	(0.21)
Shares premium on ordinary shares	60,600	0.05	60,600	0.05	60,600	0.05
Shares premium on treasury shares	35,218	0.03	35,218	0.03	135,058	0.11
Other surpluses (deficits)	9,840,436	8.91	9,840,436	8.60	9,840,436	7.94
Retained earnings	14,928,646	13.51	14,192,194	12.41	14,492,616	11.70
Other components of equity	109,437	0.10	108,164	0.09	104,375	0.08
Non-controlling interests	7,454,877	6.75	8,076,334	7.06	8,617,789	6.95
Total Equity	50,936,589	46.10	51,493,446	45.02	52,171,737	42.10
Total Liabilities and Equity	110,487,924	100.00	114,368,145	100.00	123,908,902	100.00

Remarks : * Other non-current assets comprise investments in associates and joint venture, long-term investments in related parties, other long-term investments, investment properties, land leasehold rights, intangible assets, deferred tax assets, advances payment for plant and equipment and other non-current assets.

** Other non-current liabilities comprise debentures, financial lease liabilities, deferred tax liabilities, non-current provisions for employee benefit and other non-current liabilities.

Statements of comprehensive income (Consolidated)

Statement of Comprehensive Income	Accounting Period ended 31 December					
	2018		2019		2020	
	"000" Baht	%	"000" Baht	%	"000" Baht	%
Income						
Revenue from sales of goods	34,993,161	100.00	37,040,563	100.00	34,275,770	100.00
Cost of sales of goods	(28,018,397)	(80.07)	(28,404,067)	(76.68)	(24,937,101)	(72.75)
Gross Profit	6,974,764	19.93	8,636,496	23.32	9,338,669	27.25
Transportation income	1,284,354	3.67	1,166,524	3.15	1,113,565	3.25
Net foreign exchange gain	382,189	1.09	404,780	1.09	-	-
Investment income	81,197	0.23	106,125	0.29	59,151	0.17
Other income	573,739	1.64	550,482	1.49	738,177	2.15
Profit before expenses	9,296,243	26.57	10,864,407	29.33	11,249,562	32.82
Cost of distribution and transportations	(4,167,612)	11.91	(4,032,386)	(10.89)	(3,164,115)	(9.23)
Administrative expenses	(1,797,180)	5.14	(2,111,251)	(5.70)	(1,748,261)	(5.10)
Impairment loss of assets	-	-	-	-	(1,601,820)	(4.67)
Net foreign exchange loss	-	-	-	-	(11,943)	(0.03)
Total expenses	(5,964,792)	(17.05)	(6,143,637)	(16.59)	(6,526,139)	(19.04)
Profit from operating activities	3,331,451	9.52	4,720,770	12.74	4,723,423	13.78
Finance costs	(1,719,358)	(4.91)	(1,959,023)	(5.29)	(2,014,903)	(5.88)
Share of profit of subsidiaries accounted for using equity method	-	-	-	-	-	-
Share of profit (loss) of associates accounted for using equity method	31,090	0.09	(18,704)	(0.05)	56,321	0.16
Profit before income tax expense	1,643,183	4.70	2,743,043	7.41	2,764,841	8.07
Tax income	(218,509)	(0.62)	21,528	0.06	74,325	0.22
Profit for the year	1,424,674	4.07	2,764,571	7.46	2,839,166	8.28
Other comprehensive income (expense)						
Items that will be reclassified subsequently to profit or loss						
Exchange difference on translating financial statements	92	0.00	(250)	(0.00)	(18)	(0.00)
Gain (loss) on measurement of financial statements	(72)	(0.00)	(111)	(0.00)	6	0.00
Share of other comprehensive (expense) of subsidiaries accounted for using equity method	-	-	-	-	-	-
Share of other comprehensive (expense) of associates accounted for using equity method	(4,758)	(0.01)	(935)	(0.00)	(3,778)	(0.01)
Income tax relating to items that will be reclassified	16	0.00	25	0.00	-	-
Total items that will be reclassified subsequently to profit or loss	(4,722)	(0.01)	(1,271)	(0.00)	(3,790)	(0.01)
Items that will not be reclassified to profit or loss						
Gain on investments in equity instruments designated at fair value through other comprehensive income (expense)	-	-	-	-	3	0.00
Share of other comprehensive income (expense) of subsidiaries accounted for using equity method	-	-	-	-	-	-
Losses on remeasurements of defined benefit plans	(40,542)	(0.12)	(245,792)	(0.66)	-	-
Income tax relating to items that will not be reclassified	8,109	0.02	49,235	0.13	(1)	(0.00)
Total items that will not be reclassified to profit or loss	(32,433)	(0.09)	(196,557)	(0.53)	2	0.00
Other comprehensive income (expense) for the year, net of tax	(37,155)	(0.11)	(197,828)	(0.53)	(3,788)	(0.01)
Total comprehensive income for the year	1,387,519	3.97	2,566,743	6.93	2,835,378	8.27
Profit (loss) attributable to:						
Owners of the parent	323,781	0.93	1,393,525	3.76	1,498,152	4.37
Non-controlling interests	1,100,893	3.15	1,371,046	3.70	1,341,014	3.91
Profit for the year	1,424,674	4.07	2,764,571	7.46	2,839,166	8.28
Total comprehensive income (expense) attributable to:						
Owners of the parent	286,625	0.82	1,195,695	3.23	1,494,363	4.36
Non-controlling interests	1,100,894	3.15	1,371,048	3.70	1,341,015	3.91
Total comprehensive income for the year	1,387,519	3.97	2,566,743	6.93	2,835,378	8.27
Basic earning per share (in Baht)	0.016		0.073		0.079	

Revenues from sales-Outside customers

	2018 ('000" Baht)	%	2019 ('000" Baht)	%	2020 ('000" Baht)	%
Construction	19,993,749	57.14	20,670,418	55.80	17,468,305	50.96
Petrochemical and Chemical	8,176,511	23.37	7,901,438	21.33	7,616,357	22.22
Energy and Utilities	6,698,253	19.14	8,364,041	22.58	9,072,251	26.47
Agriculture	124,648	0.36	104,666	0.28	118,857	0.35
Total	34,993,161	100.00	37,040,563	100.00	34,275,770	100.00

Statement of cash flow (Consolidated)

	Accounting Period ended 31 December		
	2018 ('000" Baht)	2019 ('000" Baht)	2020 ('000" Baht)
Net cash from operating activities	3,761,907	7,770,137	11,876,001
Net cash used in investing activities	(7,369,208)	(8,149,630)	(12,195,171)
Net cash from financing activities	5,046,791	(1,248,327)	4,244,530
Net increase (decrease) in cash and cash equivalents before effect of exchange rates and changes in holding of investments in subsidiary	1,439,398	(1,627,820)	3,925,360
Effect of exchange rate changes on cash and cash equivalents	8,182	5,105	(11,801)
Cash and cash equivalents from change in holding of investments in subsidiary	-	-	475
Net increase (decrease) in cash and cash equivalents	1,447,580	(1,622,715)	3,914,034
Cash and cash equivalents at 1 January	2,918,980	4,366,560	2,743,845
Cash and cash equivalents at 31 December	4,366,560	2,743,845	6,657,879

Key Financial Ratio

Financial Ratio	Accounting Period ended 31 December		
	2018	2019	2020
Liquidity Ratio			
1.Current Ratio (times)	1.48	1.36	1.02
2.Quick Ratio (times)	0.67	0.53	0.55
3.Cash Ratio (times)	0.21	0.41	0.52
4.Receivable Turnover (times)	9.21	8.28	7.38
5.Collection Period (days)	39.07	43.46	48.77
6.Inventory Turnover Period (times)	2.04	1.99	1.97
7.Inventory Turnover (days)	176.46	180.68	182.55
8.Account Payable Turnover (times)	9.63	10.26	9.21
9.Payment Period (days)	37.39	35.09	39.07
10.Cash Cycle (days)	178.14	189.05	192.25
Profitability Ratio			
11.Gross Profit Margin (%)	19.93	23.32	27.25
12.Operating Profit Margin (%)	8.20	11.37	18.32
13.Other Profit Margin (%)	(3.37)	(3.69)	(9.86)
14.Cash to Net Profit Ratio (times)	1.31	1.85	1.89
15.Net Margin (%)	3.82	7.04	7.85
16.Return on Equity (%)	2.77	5.40	5.48
Efficiency Ratio			
17.Return on Assets (%)	1.33	2.46	2.38
18.Return on Fixed Assets	5.40	7.19	6.66
19.Assets Turnover (times)	0.35	0.35	0.30
Financial Policy Ratio			
20.Debt to Equity Ratio (times)	1.17	1.22	1.38
21.Net Debt to Equity Ratio (times) ²	1.00	1.12	1.18
22.Interest Bearing Debt to Equity Ratio (times)	0.99	1.03	1.20
23.Net Interest Bearing Debt to Equity Ratio (times) ²	0.82	0.93	1.00
24.Interest Coverage Ratio (times) ³	3.39	4.13	4.12
25.Debt Service Coverage Ratio (times) ³	2.37	2.07	2.34
26.Dividend Payout Ratio (%) ¹	153.85	82.19	75.95
27.Net interest bearing Debt to EBITDA Ratio (times)	7.40	6.47	5.57
28.Be Size to Interest Bearing Debt Ratio (times)	0.02	0.02	0.02
29.Current Interest Bearing Debt to Interest Bearing Debt Ratio (times)	0.24	0.22	0.32
30.Long Term Borrowing from Financial Institutions to Liabilities Ratio (times)	0.18	0.12	0.06
Share data			
31.Book Value per Share (Baht) ⁴	2.63	2.68	2.75
32.Earnings per Share (Baht)	0.016	0.073	0.079
33.Dividend per Share (Baht)	0.020	0.060	0.060
Growth Ratio			
34.Total Assets (%)	7.09	3.51	8.34
35.Total Liabilities (%)	16.56	5.58	14.10
36.Sales (%)	20.30	5.85	(7.46)
37.Operating Expenses (%)	2.66	3.00	(20.04)
38.Net Profit (%)	304.59	94.05	2.70

Remarks:

1.Calculation based on Separate Financial Statements.

2.After Deducting Cash and Cash Equivalents and Current Investments.

3. Cash basis Interest coverage ratio = Cash from (used in) operating activities (before change in current assets and current liabilities) divided by finance cost paid from cash flow from financing activities. Debt service coverage ratio is calculated based on formula of Financial Covenants stipulated in Financial Agreements of the Company with commercial bank creditors, which is as follows:-
Debt service coverage ratio = Cash from (used in) operating activities (before change in current assets and current liabilities) divided by repayment of long-term loan + finance lease payments + finance cost paid from cash flow from financing activities

4.Number of 5,899,999,300 shares of TPIPP, held by TPI Polene not yet mark to market. The above share price was realized at the par value of Baht 1 per share.

4. Other key information

4.1 Legal Dispute

As at 31 December 2020, the Company had the following major lawsuits:

1) Due to on 20 February 2017, Tham Phra Phothisat Temple (the “Plaintiff”) filed a complaint with the Central Administrative Court (the “Court”) being the Black Case No. Sor. 3/2560, and claimed that Plaintiff is authorized by the Fine Arts Department to be the caretaker of the Phothisat cave (Tham Phra Phothisat), but did not have a written power of attorney, and alleged that the Company’s mining activity caused damage to the engraved images in Phothisat cave. Later, on 2 June 2017, the Court called the Company to be a party (as an interpleader) in the case where the Plaintiff filed a lawsuit against the Minister of the Ministry of Industry, 1st Defendant, the Director-General of Department of Primary Industries and Mines, 2nd Defendant, Department of Mineral Resources, 3rd Defendant and Saraburi Provincial Industry Office, 4th Defendant (collectively “Defendants”); claiming that the Defendants’ issuance of Prathanabat to the Company is done in contradiction to regulation of Ministry of Interior on the Conditions and Means of Prathanabat Issuance, under Section 9 of the Land Code B.E. 2497, which such regulation of Ministry of Interior was issued in B.E. 2535; thus, the Plaintiff requested that such Prathanabat issued by the Defendants to “Petrochemical Industry Company Limited” which such Prathanabat was later assigned to the Company, be revoked. Further, the Plaintiff filed a request for an emergency interim measure demanding that the Court orders the Company to stop the blasting of rocks for mining activity, until the decision of this case is reached.

On 3 August 2017, the Court, together with the parties of this case went to examine the location at Phothisat cave and found the Bas-relief art images of Buddha, Shiva god, Narai god, Hermit, etc. located at the front area of the cave; and during the examination at the location, the officer of Fine Arts Department informed that according to the evidence which are the photographed pictures of the art images which were taken in B.E. 2507, B.E. 2508, B.E. 2534, B.E. 2535, B.E. 2559 and B.E. 2560, there is no traces of any changes to the art images based on comparison with those pictures. Further, the Court, together with the parties of this case, examined the area of the Company (interpleader) which was granted with Prathanabat by witnessing the rock blasting activity of the interpleader around 15:30, standing approximately 300-400 meters from the area of blasting activity; which at the time of blasting, it made a slightly loud sound, but no vibration was detected. Later, on 8 September 2017, the Court denied the Plaintiff’s request for an emergency interim measure for the Company to comply with the order of the 4th Defendant.

The 1st Defendant submitted a written statement dated 8 May 2017 to the Court, which stated that the 1st Defendant is authorized with the power to issue Prathanabat to each applicant in accordance with the Minerals Act, B.E. 2510. The 2nd Defendant submitted a written statement dated 4 May 2017 to the Court, which stated that the 2nd Defendant was assigned with the administration power from Department of Mineral Resources according to the Reorganization of Ministry, Sub-Ministry, and Department Act, B.E. 2545 and is authorized with the duty to consider the application for Prathanabat which have been submitted to the officials at the local Industry Office, and the 2nd Defendant is authorized with the power to grant Prathanabat in accordance with Section 54 of the Minerals Act, B.E. 2510; and after Prathanabat is granted, the 2nd Defendant has the duty to control, monitor and inspect that the person whom has been granted with Prathanabat, shall comply with the Minerals Act, B.E. 2510 and the conditions set forth in the annex of Prathanabat. The 3rd Defendant submitted a written statement dated 28 March 2017 to the Court, which stated that presently, the 3rd Defendant is not authorized by the laws related to the issuance of Prathanabat, which is due to the Royal Decree on transfer of administration duty and power of the administrative agencies issued according to the Reorganization of Ministry, Sub-Ministry, and Department Act, B.E. 2545, Section 151 which transferred the said duty, power and asset to Department of Primary Industries and Mines (2nd Defendant). The Fine Arts Department also submitted a written statement dated 5 April 2017 to the Court, which stated that the Phothisat cave is deemed an ancient monument under Section 4 of Act on ancient monuments, antiques, objects of art and national museum, B.E. 2504 and the Fine Arts Department had already announced the registration of Phothisat cave as ancient monuments in the government gazette since 6 April 1965; and the Fine Arts Department authorized the director of the Regional Office of the Arts Department, No.3, Ayutthaya, with the authority to file any complaint to the inquiry officer who has authority in the area, against any wrongdoer. The statement further clarified that on 14 December 2016, the Fine Arts Department had inspected the Phothisat cave and there appeared to be no traces of any damage, nor any damage to the Bas-relief art images from Dvaravati era, e.g. images of Buddha, Narai god, Shiva god or other persons; which are in good order and it was found that the conditions of the other areas within the cave are normal without traces of any damage being caused by the mining activity of the Company.

The fact-finding procedure of the case had ended and the Court had set the first trial date to be 9 September 2020 together with submission of summary of facts from the Judge who presided over this case dated 11 August 2020 and scheduled the date of rendering the Court’s decision to be on 30 September 2020.

The Court ruled that the Defendants lawfully issued Prathanabat to “Petrochemical Industry Company Limited” and in accordance with the Land Code and Minerals Act, B.E. 2510, which such Prathanabat was later transferred to the Company, which was done lawfully and legitimately; the mining activity of the Company which is the blasting of rocks according to Prathanabat and using the explosives not exceeding the rate of 130 kilograms, further, the result of vibration or compression level inspection are according to safety standards, when compared with the standard set forth by the Ministry of Natural Resources and Environment. Additionally, the Fine Arts Department also stated that according to the results of the inspection, there has been no additional damage, the Bas-relief art images are in good condition, and there is no damage to the area within the cave; thus, the Court has no reason nor cause to issue the order according to the Plaintiff’s request and the Court has ruled that the case is dismissed and the Court’s order relating to the emergency interim measure dated 8 September 2017 shall be revoked starting from the first day of which the appeal submission period has expired (in case there is no appeal submission) or starting from the date on which the Court has ordered its decision to accept or not accept the appeal (in case there is submission of an appeal), as the case may be.

The Plaintiff submitted the appeal to the Court on 27 October 2020 and the Court accepted the appeal of the Plaintiff. Therefore, the Court’s order dated 8 September 2017 relating to the emergency interim measure ceased to be in effect. Presently, the case is under process of preparation of answering the appeal and the Court allowed the date to submit the answer to the appeal to be within 21 February 2021.

2) This case is due to the Company receiving a permit to dig a water-well, from Mittraphap Subdistrict Administration Organization, and the Company dug the water-well on the Company’s own land, in order to preserve the environment and to be used for the prevention of fire (the Black Case No. SorWor.2/2561). Later, on 21 June 2018, the Department of Primary Industry and Mines, Ministry of Industry, through representation of the district attorney, the Office of Attorney General (the “Plaintiff”), filed a lawsuit against the Company (the “Defendant”) at the Civil Court (the “Court”), claiming a violation in mining activity with the principal amount of claim of Baht 71,566,889.42. The Plaintiff claimed that the Company conducted its shale mining unlawfully in the area in which Prathanabat for such area has not been granted, totaling 2 locations; thus, requesting that the Court order the Company to return the shale totaling of 249,159.96 metric tons back to the original area and restore the area into its previous condition or pay the compensation consisting of the value of the shale and royalty fee to the government in the amount of Baht 66,650,289.31 together with interest.

The Company plead in its defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535. The lawsuit is vague, and delusive without any evidence and is already time-barred by the prescription period; further, the lawsuit is a civil claim in connection with a criminal offence. The Plaintiff claimed that the Company conducted unlawful mining activity. However, the claim is false. The Company did not commit any criminal offence and did not infringe any rights of the Plaintiff; thus, the civil claim does not exist due to non-existence of infringement; the Company has not committed any wrongdoing according to the complaint and is not liable to any claim. The hearing was finished and the Court ordered the date to render the Court’s decision to be on 24 March 2020.

On 24 March 2020, the Court ordered the Company to return the shale totaling 249,159.96 metric tons back to the original area and restore the area to its previous condition or pay the compensation consisting of the value of the shale and royalty fee to the government in the amount of Baht 66,650,289.31 together with interest at the rate of 7.5 percent per annum on the said amount, starting from the date of the violation (28 June 2017) until the date of the complaint filing (359 days) making the interest to be Baht 4,916,600.11. Total amount of combined principal and interest is Baht 71,566,889.31. The Court also ordered that the interest on the principal amount of Baht 66,650,289.31, in the rate of 7.5 percent per annum which would be paid calculated from the next day after the date of filing of the complaint until the payment is received in full together with the court fees on behalf of the Plaintiff and attorney fees of Baht 80,000.

The Company filed the appeal together with the request for delay of judgement execution on 19 August 2020. The case is pending the consideration of the Court of Appeal and the date of hearing the Court of Appeal’s judgement or order was set to be on 20 May 2021.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines’ filing of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

3) On 20 June 2019, Tham Phra Phothisat Temple (the “Plaintiff”) filed a lawsuit against the Ministry of Industry, as 1st defendant and other related persons as co-defendants, totaling 31 persons, in a Black Case No. Sor. 17/2562, which the Company is the 30th Defendant in the lawsuit and the Plaintiff also filed a request for the Court to order an emergency interim measure, until the decision of this case is reached. Later on, the Court also ordered the Committee of Professionals on Environmental Impact Assessment Report (the “Commit-

tee”), as the 32nd Defendant. The Court has considered and issued the order dated 17 September 2019, to accept the complaint against some of the respondents and denied to accept the complaint against some respondents and some claims (the Court only accepted the following as defendants: Ministry of Industry, as 1st Defendant, Minister of Ministry of Industry, as 2nd Defendant, Department of Primary Industry and Mines, as 3rd Defendant, Director-General of Department of Primary Industry and Mines, as 4th Defendant, the Company, as the 30th Defendant and the Committee, as the 32nd Defendant, respectively). The Court also issued an order dated 17 September 2019 which denied the Plaintiff’s request for an emergency interim measure. The Plaintiff claimed to be the authorized person from the Fine Arts Department as caretaker of the Phothisat Cave, but did not have a written power of attorney, but requested to the Court to order that the application for Prathanabat of the Company is unlawful, the Plaintiff also claimed that the resolution of the 32nd Defendant which approved the Company’s Environmental Impact Assessment Report for the Company’s mining activity, concealed the facts, and was thus unlawful. The Plaintiff requested the Court to order the revocation of the Company’s application for Prathanabat of limestone mining, in which the Company had submitted for approval.

The Defendant submitted a written statement of defense which informed the Court that the Plaintiff has no authority to file the complaint and this complaint repeated the complaint filed in Black Case No. Sor.3/2560, and the Company’s application for Prathanabat of limestone mining is lawful and in accordance with the rules, procedures, and methods as prescribed by law. Further, the applied area for Prathanabat is not the restricted area under the laws in respect of minerals and forests; and there is an Environmental Impact Assessment Report which has been prepared correctly and completely in accordance with the law in relation to Enhancement and Conservation of National Environmental Quality and laws related to minerals, for application for Prathanabat which have been submitted for approval from the authority. The application for Prathanabat is pending the consideration for approval of the authority and the Company’s application for Prathanabat did not cause any damage or grievance to the Plaintiff, thus, the Defendant requested the Court to dismiss the complaint.

The Company has made and submitted the additional statement of defense to the Court on 14 January 2021. The case is under the process of the Court’s fact finding procedure.

4) On 8 July 2015, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the Saraburi Office of District Attorney (the “Plaintiff”) filed a civil lawsuit (the Black Case No. SorWor.4/2559) against the Company (the “Defendant”) with the principle amount of claim in total of Baht 4,066,535,823. The Plaintiff later amended the complaint to increase the amount of claim to be the total of Baht 4,338,558,231.54; claiming that the Company engaged its limestone mining activity in the area outside the designated area under the Prathanabat and requested that the Company return the limestone ore in total of 31,522,374.64 metric tons and restore the area to be in its previous condition or pay the compensation together with the 7.5 per annum interest.

The Company plead in its statement of defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, and delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement. The Company has not committed any wrongdoing according to the complaint and is not liable to any claim, therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

The case was requested to be transferred to the Environmental Law Division of the Civil Court to be jointly considered with other related cases and the Court granted the said request.

On 13 December 2019, the Civil Court ordered the Company to return the limestone ore in total of 31,522,374.26 metric tons back to the area where the mining activity was done and to restore such area to the previous condition or pay the compensation of Baht 4,047,472,854.98 together with the 7.5 percent per annum interest on the said principle amount, calculating from the discovery date of the unlawful mining activity (24 July 2014) until the date of the filing of complaint (350 days) totaling Baht 291,085,376.56 making it Baht 4,338,558,231.54 in total. The Court also ordered the Defendant to pay 7.5 percent per annum interest on the principal of Baht 4,047,472,854.98 counting from the day after the complaint filing date until the payment is made in full.

The Company filed an appeal with the request for a delay of judgement execution on 8 May 2020. The case is pending the consideration of the Court of Appeal.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines’s filing of the report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that

this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

5) On 24 March 2016, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the Saraburi Office of District Attorney (the "Plaintiff") filed a civil lawsuit (the Black Case No. SorWor.6/2559) against the Company (the "Defendant") claiming that the Company engaged its limestone mining activity in the area outside the designated area under the Prathanabat. The complaint requested the Company to return the limestone ore of 2,447,906.76 metric tons and restore the area into the previous condition or pay the compensation of Baht 327,680,219.25 together with 7.5 percent per annum interest.

The Company plead in its defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, and delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, and the Company has not committed any wrongdoing according to the complaint and is not liable to any claim. Therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

The case was requested to be jointly considered with other related cases and the Court granted the said request.

On 13 December 2019, the Civil Court ordered the Company to return the limestone ore for cement industry, in total of 2,477,906.76 metric tons back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation of Baht 314,311,227.98 together with the 7.5 percent per annum interest, calculating from the discovery date of the unlawful mining activity (31 August 2015) until the date of the filing of complaint (207 days) totaling Baht 13,368,991.27 making it Baht 327,680,219.25 in total. The Court also ordered the Defendant to pay 7.5 percent per annum interest on the principal of Baht 314,311,227.98 counting from the day after the complaint filing date until the payment is made in full and ordered that the Defendant pay the court fees on the Plaintiff's behalf (court fees shall be calculated from the amount of claim ordered in favor of the Plaintiff) and to pay the attorney fees of Baht 100,000.

The Company filed an appeal with a request for a delay of judgement execution on 8 May 2020. The case is pending consideration of the Court of Appeal.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines' filling of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

6) On 24 March 2016, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the Saraburi Office of District Attorney (the "Plaintiff") filed a civil lawsuit (the Black Case No. SorWor.5/2559) against the Company (the "Defendant") in the civil case claiming for compensation totaling Baht 1,671,128,829.14 stating that the Company engaged its limestone mining activity unlawfully (engaged in the mining restricted area) demanding that the ore totaling 12,484,023.50 metric tons be returned and the area be restored into its previous condition or pay the compensation together with the 7.5 percent per annum interest.

The Company plead in its statement of defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, and delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim. Therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

On 2 August 2019, the Court ordered the Company to return the limestone for cement industry totaling 12,484,023.50 metric tons back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation of Baht 1,602,948,617.40 together with the interest of 7.5 percent per annum of such amount calculating from the date of being notified of the land survey result (31 August 2015) until the date of the filing of complaint (207 days) making the interest to be Baht 68,180,211.74,

making it Baht 1,671,128,829.14 in total, together with payment of 7.5 percent per annum interest on the principle amount of Baht 1,602,948,617.40 counting from the day after the complaint filing date until the payment is made in full and ordered that the Defendant pay the court fees on the Plaintiff's behalf (court fee shall be calculated from the amount of claim ordered in favor of the Plaintiff) and to pay the attorney fees of Baht 200,000.

The Company does not agree with the decision of the Court of the First Instance and filed the appeal together with the request for a delay of judgement execution on 3 December 2019. The case is pending the consideration of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order was set to be on 22 September 2020. However, the said date of hearing of judgement was postponed, due to the fact that the case is under mediation during the appeal.

7) On 2 March 2017, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the district attorney of the Office of the Attorney General (the "Plaintiff"), filed a complaint against the Company (the "Defendant") at the Civil Court, Environmental Law Department (the Black Case No. SorWor.1/2560) with the lawsuit amount of Baht 344,882,135.15 claiming that the Company partially engaged its mining activity in the area designated in the Prathanabat unlawfully requesting that the shale totaling 1,220,559.82 metric tons be returned to the area and the area be restored into its previous condition or to pay compensation together with the 7.5 percent per annum interest.

The Company plead in its statement of defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim. Therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

On 13 December 2019, the Civil Court ordered the Company to return the shale for cement production industry totaling 1,220,559.82 metric tons back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation consisting of the value of the shale and royalty fee to the government in the amount totaling Baht 326,499,751.86 together with 7.5 percent per annum interest calculating from the date of the violation (2 June 2016) until the date of the complaint filing (274 days) making the interest to be Baht 18,382,383.29. The total amount from combining the principal and interest, is the amount of Baht 344,882,135.15. The Court also ordered that the interest on the principal amount of Baht 326,499,751.86 in the rate of 7.5 percent per annum be paid counting from the day after the complaint filing date until the payment is made in full together with the court fees in behalf of the Plaintiff and attorney fee of Baht 200,000.

The Company filed the appeal with the request for delay of judgement execution to Court on 5 June 2020. The case is pending consideration of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order is set to be on 27 April 2021.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines' filling of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

Incidentally, the information regarding cases 1) - 7) above are under the consideration of the court, the above cases are not final. The Company and its legal advisors hereby opines that based on the evidence and information the Company possesses, the Company did not commit any wrongful acts against the plaintiff as detailed in the complaints; the plaintiff claimed that the defendant committed wrongful action against the plaintiff, therefore, the plaintiff has the burden of proof to prove that the defendant had committed such act as the plaintiff claimed and since the plaintiff had not presented the evidence which show that, in fact, the defendant had committed wrongful acts against the plaintiff, then the court could consider dismissing the case. However, the judgment depends on the consideration and discretion of the court. As at 31 December 2020, the outcome of the lawsuits is not yet final, and the Company has not recorded a provision for liability of lawsuit in its financial statements.

8) On 16 December 2019, individuals, 222 people in total, sued the Energy Regulatory Commission (ERC) et al to the Central Administrative Court, with a subsidiary listed as the 5th Defendant. The Plaintiffs requested that the approval of an Environmental and Health Impact Assessment (EHIA) report for the project of a 150 megawatts thermal power plant, the license to operate an electricity generating business and the construction approval of the subsidiary be revoked. The Plaintiffs also requested that the Court take evidence out of

Court and issued an interim measure and ordering that the electricity generating system be temporarily stopped until the final decision is reached.

On 25 December 2019, the Court inquired of both Parties in considering the request for an interim measure and rendered its decision on 28 January 2020 denying the request for interim measure due to the lack of reason to believe that the license to operate electricity generating business of the subsidiary is unlawful.

On 31 January 2020, the Court issued an order accepting the compliant and requesting the subsidiary to file the answer. The lawyer submitted the answer to the Court on 1 July 2020. The case is under the Court's consideration.

On 7 December 2020, the Court sent the objection to the answer of the 5th Defendant and requested the subsidiary to submit additional answers to the Court within the prescribed period which shall be due on 20 February 2021; the case is in the process of preparing the additional answer.

The subsidiary's legal consultant considered the complaint and its appendixes and hereby opines that the subsidiary lawfully and transparently received the license to operate the electricity generating business and the construction approval from the competent authorities, in accordance with the applicable laws and that the relevant public officials have lawfully and honestly performed their duties without any conflict of interest in issuing the said license. The complaint of the Plaintiffs is untrue. As the case is in the preparation for a. answer, the subsidiary has causes to relieve itself of any liability generated from the complaint depending on the Central Administrative Court Decision. Moreover, the subsidiary has pressed charges against the 222 Plaintiffs to the Muak Lek police station, Saraburi, for taking the false information to charge the person in the Court. The case is under the investigation of the police. For all above lawsuits, the Group's legal consultant opines that, based on the Company's evidence and information, the Company has a chance to defend itself in the court trial depending on the consideration of each court.

4.2 Regular Contact Financial Institutions

Debenture Registrar and Debenture Holders' Representative

Debentures	Debenture Registrar	Debenture Holders' Representative
Debentures of TPI Polene Public Company Limited No.2/ 2015 Series 4 Due A.D.2021	CIMB Thai Bank Plc. 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330 Telephone +66 (0) 2626-7507-8, +66(0) 2626-7591 Fax +66(0) 2657-3390	CIMB Thai Bank Plc. 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330 Telephone +66 (0) 2626-7507-8, +66(0) 2626-7591 Fax +66(0) 2657-3390
Debentures of TPI Polene Public Company Limited No.2/ 2015 Series 5 Due A.D.2022		
Debentures of TPI Polene Public Company Limited No.1/ 2016 Series 1 Due A.D.2021		
Debentures of TPI Polene Public Company Limited No.1/ 2016 Series 2 Due A.D.2022		
Debentures of TPI Polene Public Company Limited No.1/ 2016 Series 3 Due A.D.2023		
Debentures of TPI Polene Public Company Limited No.1/ 2018 Due A.D.2021		
Debentures of TPI Polene Public Company Limited No.1/ 2019 Due A.D.2022	Bank of Ayudhya Plc. 1222, Rama 3 Road, Bang Phongphang Sub- district, Yan Nawa District, Bangkok 10120 Telephone +66 (0) 2296-2000, +66 (0) 2296-5696 Fax +66 (0) 2683-1302	Bank of Ayudhya Plc. 1222, Rama 3 Road, Bang Phongphang Sub- district, Yan Nawa District, Bangkok 10120 Telephone +66 (0) 2296-2000, +66 (0) 2296-5696 Fax +66 (0) 2683-1302
Debentures of TPI Polene Public Company Limited No.2/ 2019 Due A.D.2022	CIMB Thai Bank Plc. 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330 Telephone +66 (0) 2626-7507-8, +66(0) 2626-7591 Fax +66(0) 2657-3390	-
Debentures of TPI Polene Public Company Limited No.3/ 2019 Series 1 Due A.D.2023	CIMB Thai Bank Plc. 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330 Telephone +66 (0) 2626-7507-8, +66(0) 2626-7591 Fax +66(0) 2657-3390	Bank of Ayudhya Plc. 1222, Rama 3 Road, Bang Phongphang Sub- district, Yan Nawa District, Bangkok 10120 Telephone +66 (0) 2296-2000, +66 (0) 2296-5696 Fax +66 (0) 2683-1302
Debentures of TPI Polene Public Company Limited No.3/ 2019 Series 2 Due A.D.2025		
Debentures of TPI Polene Public Company Limited No.1/ 2020 Due A.D.2023		
Debentures of TPI Polene Public Company Limited No.2/ 2020 Due A.D.2024		
Debentures of TPI Polene Public Company Limited No.3/ 2020 Series 1 Due A.D.2024	CIMB Thai Bank Plc. 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330 Telephone +66 (0) 2626-7507-8, +66(0) 2626-7591 Fax +66(0) 2657-3390	Asia Plus Securities Co., Ltd. 11/F, Sathorn City Tower, 175 South Sathorn Road, Thungmahamek, Sathorn, Bangkok 10120 Telephone +66 (0) 2680-1362 Fax +66 (0) 2285-1900-1
Debentures of TPI Polene Public Company Limited No.3/ 2020 Series 2 Due A.D.2025		
Debentures of TPI Polene Power Public Company Limited No.1/2018 Due A.D.2021	Bank of Ayudhya Plc. 1222, Rama 3 Road, Bang Phongphang Sub- district, Yan Nawa District, Bangkok 10120 Telephone +66 (0) 2296-2000, +66 (0) 2296-5696 Fax +66 (0) 2683-1302	Bank of Ayudhya Plc. 1222, Rama 3 Road, Bang Phongphang Sub- district, Yan Nawa District, Bangkok 10120 Telephone +66 (0) 2296-2000, +66 (0) 2296-5696 Fax +66 (0) 2683-1302
Debentures of TPI Polene Power Public Company Limited No.1/2019 Due A.D.2022	CIMB Thai Bank Plc. 44, Langsuan Road, Lumpini Subdistrict, Pathumwan District, Bangkok 10330 Telephone +66 (0) 2626-7507-8, +66(0) 2626-7591 Fax +66(0) 2657-3390	
Debentures of TPI Polene Power Public Company Limited No.1/2020 Due A.D.2024		

5. Corporate Governance Policy

5.1 Overview of Corporate Governance Policy and Guidelines

The Board of Directors place great importance and commitment to operate the business to be in compliance with the principles of good corporate governance and business ethics of TPI Polene Group, achieving sustainable goals with stable and elegant growth to enhance confidence for shareholders and all stakeholders. The Company operates the business in accordance with good corporate governance and business ethics; develops standards of operations to be at international levels. The Company has monitored and evaluated its performance to ensure that it functions effectively, which covers investments, which are jointly planned, while a clear roadmap will be set, followed up and reported on the progress of operations regularly, as well as formulating strategies and long-term goals for sustainable growth development. The Board of Directors recognizes the role of the leader of the organization and understands the benefits and a consistent implementation of good corporate governance principles in the organization to be acceptable internationally.

Throughout 2020, the Company's Directors acknowledged best practice for directors of a listed company as their principle guideline. The Directors, the management, and all levels of staff carry out their duties with honesty, integrity, and good ethics. All realize that the Company is a long-established, leading, reputable company with a track record of over 20 years. Corporate governance practices of the Company can be divided into 5 sections as follows:

Section 1. Stakeholder Rights

The Company realizes and respects the importance of the rights of all shareholders. The Company has policies to protect shareholders fundamental rights and ensure equitable treatment under the law as follows:

1. Shareholders' Meeting

The Company schedules an annual general meeting of the shareholders ("AGM") within 4 months of the annual closing date of its accounting books. In case there are emergency issues that might affect the interest of the shareholders and/or related to the terms and regulations or any legal issues, to be proposed for approval in the meeting. The extraordinary shareholders' meeting will be held as the case may be. On December 31, 2020, the Annual General Shareholders' meetings were held on August 4, 2020 at the Conference Room on the 9th floor of TPI Tower, 26/56 Chan Tat Mai Rd, Thungmahamek, Sathorn, Bangkok. A total of 14 directors attended the AGM.

The Audit Committee of the Company and the Legal Advisor acted as the agents for the ballot throughout the meeting and the Chairman allocates sufficient time for each item and facilitates the meeting appropriately according to related governing laws and all respective agenda were proposed and resolved in the meeting.

2. Delivering Meeting Notices

After the Company's Board of Directors approved and resolved the Annual General Shareholders Meeting, the Company will disclose the Invitation to the Annual General Shareholders Meeting with all relevant documents on the Company's website at <http://www.tpipolene.co.th> for shareholders' consideration in advance of the meeting.

The Company assigned Thailand Securities Depository Co., Ltd., its SEC Securities Registrar, to mail meeting notices together with details of the agenda and accompanying documents (both supplementary and supporting) for the decisions of the Board of Directors. The Securities Registrar mails the opinion of the Board, minutes of the previous meeting, the annual report, all meeting documents, and proxy forms designed by the Ministry of Commerce, to shareholders at least 7 days ahead of the meeting date. An invitation to the AGM is also announced in newspapers for 3 consecutive days in advance of the meeting.

3. Facilitating Shareholders

The Company treats all shareholders in a fair manner. The Company always allows registration of shareholders at least one hour before each meeting. A barcode system summarizing details of each shareholder is printed on the registration form, or the proxy form, to facilitate registration and save time. A suitable reception is also extended to all shareholders.

4. Conduct of Shareholders' Meetings

Before the meeting, the Chairman explains clearly the rules on voting and vote counting for individual agenda items. Once information has been disclosed for each item, the Chairman allocates sufficient time for each item and facilitates the meeting appropriately. During the meeting, the Chairman allows thorough expression of views and queries by shareholders before voting and summarizes the meeting's resolution on each agenda item. Minutes of the meeting must be completely and accurately recorded, with a summary of voting results on each item.

5. After the Shareholders' Meetings

The Company duly submits the resolution of the Shareholders' meeting to the SET one day after the meeting ends. The Company duly submits the minutes of the Shareholders' meeting to the SET, the Securities Registrar of Public Company, Department of Business Development, the Ministry of Commerce, within 14 days and also discloses the minutes of the Shareholders' meeting on the Company's website at www.tpipolene.co.th

Section 2. Equitable Treatment of Shareholders

The Company values and treats all shareholders equally and fairly through the following actions:

1. Conducting the meeting in sequence of agenda items as specified in the invitation and not adding agenda items without notifying shareholders in advance, to ensure they have enough time to investigate before making their decisions.

2. Appointing Proxies to maintain the rights of those shareholders who cannot attend in person: they are able to appoint proxies, or to delegate their votes to any independent director in attendance.

In addition, the Company also discloses the format of the proxies together with all details and procedures on the Company's website at <http://www.tpipolene.co.th> in advance of the meeting.

3. Encouraging shareholders to use ballots for every agenda item, voting tickets are provided for each agenda item separately.

4. All groups of shareholders can access the Company information completely, accurately, transparently, and in a timely manner. The Company has established an Investor Relations Office to take responsibility for providing information in both Thai and English to all shareholders, equally and completely, to ensure that shareholders can make appropriate investment decisions. Corporate information is disclosed on the Company's website, as well as on the websites of the SET and the SEC to facilitate access by shareholders and other interested investors.

5. Ensuring strict supervision of the use of inside information by explicitly defining in writing the misuse of inside information as part of the Code of Conduct. In addition, in order to prevent any conflicts of interest, or misuse of inside information by the Board and Management, the Company has put in place internal information controls to supervise the use of inside information as follows:

1. Directors and Management will be regularly informed of related laws and regulations pertaining to misuse of inside information, through various communication channels.
2. The Company discloses in the TPIPL annual report the shareholdings of Directors, Management (and the holdings of management equivalents in Finance and Accounting Division) in compliance with the regulations of the Office of Securities and Exchange Commission.
3. The Directors and Management of the Company are fully responsible for submitting a report of their shareholdings in the Company, and those of their spouses and minors, in accordance with provisions contained in the Securities and Exchange Act B.E. 2535.
4. Any misuse of internal information shall be subject to disciplinary action, including dismissal, as announced in the Company's rules and regulations.

6. Devising practical guidelines for potential conflict of interest in its Good Corporate Governance and Code of Conduct for the Directors. Management and employees must strictly comply with these.

Section 3. Stakeholder Roles

The Company is well aware of the roles of all stakeholders. The Company sets precise responsibilities to be prudent, fair, and respect the rights of all stakeholders, in operating its business. Hence, the Company has established a Code of Business Conduct emphasizing the balanced consideration of all stakeholders, which has been disclosed via <http://www.tpipolene.co.th>.

TPI Polene has embraced the Code of Conduct as a policy for Directors, Management, and all employees to put the Code into practice and to abide by strict moral guidelines.

All management levels have to strictly follow the Code of Conduct as best practice principles, and it is a strict policy to ensure that all employees under each relevant organization line will acknowledge, understand, and follow the Code of Conduct.

The Company has a strict policy to treat all stakeholders fairly as follows:

- 1. Shareholders:** In its business operations, the Company concentrates on establishing the greatest benefit to shareholders. The accounting and financial systems are in place to ensure that any mistakes and irregularities will be identified in due course and that financial reports are accurate, adequate and reliable. The Company's continuously strong financial potential is demonstrated in its ability to make appropriate dividend payments to shareholders.

- 2. Customers:** The Company places a great emphasis on customer satisfaction through the quality of its products and services, provided at reasonable prices. For the manufacturing of cement, plastic resin and ready-mixed concrete, the Company and its subsidiaries have also been awarded ISO 9001:2000 certifications from the International Organization for Standardization. In addition, TPI Group has gained recognition for the quality of all cement products from the Thai Industrial Standards Institute and the Office of Customer Protection Board.

In addition, the Company holds seminars for customers to enhance relationships and to educate them about the variety of products offered. We also develop customer interaction via certified agents that welcome all customer suggestions, as these lead to higher efficiency of product development, and maintain customer loyalty.

- 3. Management and Employees:** The Company realizes the importance of human resources. Hence, the Company fosters development of all levels of management and staff with internal and external training to enhance their capabilities. The Company applies compensation systems which reward and benefit management and staff appropriately and in line with remunerations in other companies in the same industry.

In addition, the Company also focuses on the safety of its human resources by adopting Health and Safety Management standards. This is reflected in the attainment of the Health and Safety Management standard TIS 18001 certification from the Anglo Japanese American Registrars (AJA) for our cement plant. For our plastic resin and ready-mixed concrete businesses, the Company was also awarded TIS 18001 certifications. These systems have been implemented to reduce accidents in the workplace.

- 4. Trade partners:** The Company ethically sets its business operation strategies, thus enhancing relationships with all trade partners through transparent and fair practices. The Company has a policy of benefit sharing and equitable treatment for trade partners and strictly adheres to contractual agreements made. The Company is independent, without strong involvement with any trade partners.

- 5. Competitors:** The Company applies equitable treatment and abides by the framework of fair competition.

- 6. Community and Society:** The Company, as a Thai Company, continues to be determined to discharge its responsibilities towards the nation, society and communities. Accordingly, the Company is continuously committed to promoting and supporting beneficial activities towards society, religion, education and youth by establishing a full-scale foundation under the name, “the Environment for Better Life Foundation” as detailed in section “TPI Polene and Society”.

- 7. Environmental Responsibility:** The Company acts as a good citizen, conscious and aware of being one part of this society. It continues to be determined to discharge its responsibilities towards relevant rules and regulations and support the community surrounding its facilities by eliminating problems and protecting the environment, thus providing better living standards for the communities near its plants. As reflected in its full support for environmental enhancement, the Company has received ISO 14001 certification for Environmental Management System as detailed in section “TPI Polene for Safety and Environment”.

Section 4. Information Disclosure and Transparency

The Company is aware of its duty to conduct business in conformity with relevant rules and regulations as follows:

- 1. Disclosure of Company information including financial reports** is executed accurately, completely and in a timely fashion as reflected in the Annual Report form (Form 56-1), the Company’s Annual Report (Form 56-2) and other reports, which are carried out in compliance with the guidelines set by the SEC and the SET.
- 2. A plant visit** is provided for interested institutional investors, shareholders and analysts to access information. In addition, the Investor Relations Unit has been established to be responsible for communicating information to institutional investors, shareholders, analysts, and relevant authorities in an equitably and fair manner.
- 3. Disclosure of Company information is made through approved communication channels** via the SET, the SEC and the Company’s Internet website in Thai and in English.
- 4. The Company pays close attention to the quality of the financial information it provides**, particularly in its accuracy and adequacy. In addition, all financial information conforms to generally-accepted accounting principles and is audited by independent auditors. Hence, the Company has provided a report of the Board of Director’s responsibility for financial statements in this Annual Report.
- 5. Functions and responsibilities of the Board and Sub-Committees are disclosed: details** are shown in Clause 7 in the topic “Corporate Governance Structure and Important Information regarding the board of directors, sub-committees, executives and employees, etc. This includes disclosure of the number of meetings and the number of meeting attendances each director attended. Details are shown in Clause 8 in the topic “Significant Corporate Governance Report”.

- 6. Disclosure of remuneration to Directors and Management Remuneration:** this is detailed above in the section “Management”. Remuneration levels are based on the operating results of the Company during the previous fiscal year; reflect duties and responsibilities fairly and reasonably; and are comparable to general practices in the industry.

Section 5. Responsibility of the Board

The Board plays a key role in supervising corporate governance to create maximum benefits for the Company. Each director represents all shareholders and takes part in promoting good corporate governance within the Company, and in maintaining the rights of, and creating benefits for, all shareholders and other stakeholders. Details as follows:

1. Structure of the Board

(1) Composition

As of 31 December 2020, the Company’s Board of Directors consists of 14 directors, of whom 7 were management team members and 7 were non-management, of whom 5 were independent directors. This exceeds one-third of the Board.

(2) Qualifications of the Company’s Directors

The Company’s Board of Directors comprises qualified members who have skills, experience, honesty, ethics, and independence. They have capabilities in diverse fields, pertinent to the Company’s businesses and, accordingly, can safeguard the interests of all shareholders.

In addition, all Directors are aware of their duties, responsibilities and nature of the Company’s businesses. They perform their duties with honesty and prudence, and regularly update themselves on new knowledge. Directors attend each Board meeting with full responsibilities.

(3) Definition of the Independent Director Qualification

The Board of Directors has defined the qualification of Independent Directors in line with the requirements of SEC and SET. Details are shown in Clause 7 in the topic “Corporate Governance Structure and Important Information regarding the board of directors, sub-committees, executives and employees, etc.”

(4) Segregation of the Power of the Chairman and the Chief Executive Officer

The Company’s Board is well organized to ensure there is clear distinction between supervision, policy-making, and day-to-day business administrative roles. The positions of the Chairman of the Board and the Chief Executive Officer are separated. This ensures separation between governing and managing duties.

(5) Independence of the Chairman

The Chairman of the Board, as an independent director, is not a member or chairman of any sub-committee and is thus able to express his views on business operations independently. This ensures a balance of power.

In addition, the Chairman’s leadership plays a key role in ensuring the Board’s efficiency and the Shareholder’s meeting promoting to be in compliance with good corporate governance.

(6) Corporate Secretary

A knowledgeable and experienced Secretary to the Board serves as an advisor to the Board regarding pertinent laws, relevant rules and regulations, and monitors compliance of the Board’s actions on a regular basis. In addition, the Secretary is also responsible for assisting in Board activities and coordinating with other relevant functions to comply with the Board’s resolutions and good corporate governance principles.

2. Sub-Committee:

The Board of Directors has appointed Directors who have knowledge and skills suitable to be members of Sub-Committees to assist in important matters. The Sub-Committees consist of the Executive Management Committee and the Audit Committee.

The Executive Management Committee is composed of 7 members who are knowledgeable, capable, ethical and experienced in diverse fields. Details are shown in Clause 7 in the topic “Corporate Governance Structure and Important Information regarding the board of directors, sub-committees, executives and employees, etc.”

The Audit Committee consists of 3 Independent Directors. Members’ qualifications meet the requirements stipulated in relevant SEC and SET announcements. The Committee is assigned to perform checks on management and secure the balance of power in various business activities to ensure reliability and integrity and serving the best interests of all stakeholders at all times. Details are shown in Clause 7 in the topic “Corporate Governance Structure and Important Information regarding the board of directors, sub-committees, executives and employees, etc.”

3. Roles, Duties and Responsibilities of the Board

(1) Good Corporate Governance and the Code of Business Conduct. The Board of Directors values good corporate governance and maintains high standards of integrity and ethics. All Directors have responsibilities in carrying out their duties and are held accountable to the Company and its stakeholders. They perform their duties with integrity, in compliance with the governing laws and regulations of the Company and based on professional standards. The Company conducts business in a transparent, honest and fair manner for the interests of all groups of stakeholders.

The Company also issued a Code of Business Conduct for its Board, Management, staff and all employees. These principles are strictly followed, together with the Company's rules and regulations.

(2) Conflict of Interest: The Board has a clear policy to execute transactions, which have potential conflicts of interest in a manner that is in the best interests of the Company and its shareholders. Transactions between the Company (and its subsidiaries) and anyone, with which a possible conflict of interest might occur, require approval under the rules and regulations imposed by the SEC and the SET concerning information disclosure. In addition, such transactions are subject to an approval process in which only unconnected persons may participate.

Details of connected transactions that may involve conflicts of interest (according to criteria of the SET and the SEC) must be disclosed in the Company's Annual Report; in the Annual Report form (Form 56-1) or declared in other reports. This also includes disclosure of information on connected transactions according to the general accepted accounting standard criteria. Details of connected transactions are disclosed in the section "Inter-Company Transactions".

In addition, pursuant to the Articles of Association, Directors shall notify the Company without delay of their interests in any contract executed with the Company or affiliated companies, and of their holding, and its increase or decrease, of shares or debentures of the Company.

(3) Internal Control and Internal Audit: The Board employs an appropriate, and effective, internal control system to ensure Management prevents and mitigates business risks and produces accurate and reliable financial statements.

To protect the assets of the Company and shareholders' investments from potential loss, an internal audit unit has been set up as a separate division, responsible for auditing and monitoring the Company's operations for efficiency and effectiveness under a sufficient and appropriate internal audit system. The internal audit unit is independent and able to report its resultant audit openly. This allows management to be notified of problems and irregularities in a timely manner and to be able to establish measures to safeguard the Company's assets and shareholders' investments against fraud in the Company or its subsidiaries. This can also be applied to improve and develop the efficiency and effectiveness of the Company's operations.

In addition, an Audit Committee has been appointed to review and evaluate internal control systems, to examine disclosure and assessment of all relevant information for investors, and to ensure that the Company performs in compliance with regulations and governing laws.

The Company evaluated five aspects of the sufficiency of the internal control systems of the Company and its subsidiaries. These were: the organization and environmental control system; the risk management system; Management control system; the information and communication system; and the monitoring system.

In addition, the Company and its subsidiaries have policies and measures in place to regulate business transactions with major shareholders, Directors and Management or connected persons so as to avoid conflicts of interest, in order to pursue the best interests of all parties concerned.

(4) Meetings of the Board: The Company arranges regular meetings of the Board at least once a month, and may hold special meetings as deemed appropriate, to continuously supervise management operations. The time allowed for each meeting is sufficient for the Board to consider all related matters. The Chairman and the Chief Executive Officer jointly establish and approve meeting agendas to ensure that all material issues are fully considered by the Board. Each Director may independently propose agenda items and freely expresses opinions. At meetings, Directors are encouraged to use discretion to consider all raised issues.

The Company convenes each meeting in compliance with the provisions of the Public Company Act. The minutes of each meeting are properly documented, are certified by the Board, and are systematically filed under tight security.

(5) Remuneration of Directors and Management

The Company rewards its Directors fairly and reasonably, taking into account directors' responsibilities and the Company's operating results. Directors' remuneration has been approved at the shareholders meeting.

The Company fairly remunerates its Management, taking into account their responsibilities, performance, the operating results of the Company, and comparability within the same field of business. Details of remuneration are disclosed in the section "Management".

(6) Training of Directors and the Executive

The Company continuously builds the corporate governance knowledge of its Directors and Management so they may carry out their business operations in compliance with good corporate governance principles. The Company supports all Directors to participate in training courses organized by the Thai Institute of Directors Association ("IOD"), so as to add to their knowledge concerning their roles in the Company and apply such learning to their job performance.

5.2 Code of Conduct

The Company has focused on driving a concrete corporate governance culture with the Code of Conduct, which is published on the Company's website at <http://www.tpipolene.co.th>. It is a common obligation to comply with the scope of responsibility to the Company and its stakeholders within the Company's legal and regulatory framework on the basis of professional ethics and maintaining transparent, honest and fair business practices, taking into account the interests of all relevant stakeholders.

The Company has a policy to be updated according to the changing situation regularly. In addition, the Board of Directors acknowledges and adheres to the good practices of the listed directors. Board of Directors Executives and employees at all levels have behaved with a conscience that adheres to integrity, morality, ethics and awareness of the company's reputation as a leading company with credibility, stability and reputation for more than 20 years.

5.3 Significant changes and developments in corporate governance policies and systems over the previous year

The Company reviewed the Corporate Governance Policy based on good corporate governance principles for listed companies in 2012 of the Stock Exchange of Thailand and the Company has followed the principles of good corporate governance for listed companies in 2017 (CG Code) of the Securities and Exchange Commission.

Currently, the Board of Directors has adopted the Principles of Good Corporate Governance for Listed Companies in 2017 or corporate governance code (CG Code) issued by the SEC. The Company takes into account the principles carefully and understands the benefits and importance of implementing the CG Code. This focuses on integrating social issues, environment and Corporate Governance in order to create value for sustainable development, 8 main categories of which can be summarized as follows:-

Principle 1 Establish clear role and responsibility of the Board of Directors as a leader of an organization that creates sustainable value for the business.

Principle 2 Define objectives and central ideas.

Principle 3: Strengthen effectiveness of committees.

Principle 4 Recruitment and Development of Senior Executives and Personnel Management (CEO and People Management).

Principle 5 Nurture Innovation and Responsible Operations.

Principle 6: Strengthen effective risk management and internal controls.

Principle 7 Ensure Disclosure and Financial Integrity.

Principle 8: Ensure engagement and communication with shareholders.

In 2020, there were several issues that the Company has not yet implemented, and the Company is currently considering to determine appropriate replacement measures as follows:

1. The Company has not established a remuneration committee and nomination committee, as the Company requires the entire Board of Directors (excluding directors, who have conflict of interests) to act on the remuneration and nomination committee.
2. The Board of Directors has not established a policy to limit the number of years in the position of independent directors because the Company considers educational background, competence and experience and the performance of each independent director who benefits all stakeholders and benefits the Company's business operations. Based on their continuing performance to hold positions of Independent Directors, each Independent Director can provide free commentary with no conflicts of interest, as well as based on the company's current business structure, continuing to hold positions should be beneficial to the Company's business operations.
3. The Company does not prohibit the Chief Executive Officer from holding the position of Chairman of the Board of Directors. However, even without such prohibition, the two positions have always been separate positions throughout the company's history.

In this regard, the Company follows non-legal guidelines and is in accordance with the company's corporate culture. The Company has determined that this does not affect the qualifications of the independence of such directors.

6. Corporate Governance Structure and Significant Information regarding the Board of Directors Sub-committees, executives, employees and others.

6.1 Information of the Board of Directors

As at 31 December 2020, the management structure of the Company consists of three Committees: the Board of Directors, the Executive Management Committee and the Audit Committee. The Board of Directors of the Company had a total of 14 directors, consisting of 5 independent directors, which exceeds one-third of the total number of directors, details of which are as follows:-

The Board of Directors as at 31 December 2020:

Name	Position
1. Mr. Khantachai Vichakkhana	Chairman and Independent Director
2. Mr. Prachai Leophairatana	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Mr. Tayuth Sriyusiri	Director
7. Miss Malinee Leophairatana	Director
8. Mr. Supoj Singsane	Chairman of the Audit Committee and Independent Director
9. Mr. Manas Sooksmarn	Audit Committee and Independent Director
10. Mr. Pises Iamsakulrat	Audit Committee and Independent Director
11. Mr. Thavich Taychanavakul	Audit Committee and Independent Director
12. Mr. Pakorn Leopairut	Director
13. Mr. Pornpol Suwanamas	Director
14. Miss Thanyarat Imsopana	Director*

Remark: * At the Company's Board of Directors' meeting no. 6/2020, held on Jun 25, 2020, has appointed Miss Thanyarat Imsopana as a director of the Company effective Jun 25, 2020 onwards; however, Mr. Nitisit Jongphitakratana is in the position of the Corporate Secretary of the Company.

Functions and Responsibilities of the Board of Directors

1. To carry out activities prudently and in compliance with related governing laws, the objectives of the Company, and the Articles of Association, in order to protect the Company's interests and for the benefit of shareholders.
2. To consider policy, vision, work plans and key strategies, as well as ethical standards for business operations, and to supervise and monitor Management, to ensure that they perform duties efficiently and are in compliance with the Company's policies.
3. To monitor the operational results of the Company and any other key progress criteria.
4. To determine interim dividends to shareholders.
5. To ensure that financial reports are complete, accurate, reliable and timely, and are prepared in compliance with generally accepted accounting principles.
6. To monitor the implementation of internal control and audit systems; to comply with all regulations and related governing laws; and to ensure appropriate risk management.
7. To ensure that the Company performs in compliance with good corporate governance policies, and focuses on fair treatment for all related parties, and discloses all relevant information that might affect the interests of related parties and the public.
8. To monitor and to prevent conflicts of interest and ensure that connected transactions and any other transactions that might affect the interests of related parties are in compliance with related rules and regulations.

6.2 The Executive Management Committee as at 31 December 2020:

Name	Position
1. Mr. Prachai Leophairatana	Chairman of Executive Management Committee
2. Dr. Pramuan Leophairatana	Executive Director
3. Mr. Prayad Liewphairatana	Executive Director
4. Mrs. Orapin Leophairatana	Executive Director
5. Mr. Tayuth Sriyuksiri	Executive Director
6. Mr. Pakorn Leopairut	Executive Director
7. Miss Thanyaratt Imsopana	Executive Director

Seven Directors are authorized to sign on behalf of the Company. Two of the seven directors must jointly sign, together with the affixation of the official company stamp.

Functions and Responsibilities of the Executive Management Committee

1. To govern and determine the operational strategy of the business, in compliance with the policy of the Board of Directors.
2. To monitor operational results of each department.
3. To select and nominate top management of the Company.
4. To nominate and remove officers of the Company, and to determine their rewards.
5. To perform their duties in relation to the general administration of the Company

The Audit Committee as at 31 December 2020:

Name	Position
1. Mr. Supoj Singsanei *	Chairman of the Audit Committee
2. Mr. Manas Sooksmarn	Audit Committee
3. Mr. Pisej Iamsakulrat	Audit Committee
4. Mr. Thavich Taychanavakul	Audit Committee

Remark: * Possesses background and experience in auditing of financial statements.

Functions and Responsibilities of the Audit Committee

1. To control and monitor the Company's financial reports to ensure that they are complete, adequate and reliable.
2. To monitor the auditing process and internal control systems of the Company to ensure that they are appropriate and efficient.
3. To select and propose the appointment of the statutory auditor of the Company.
4. To supervise and ensure that the Company acts in compliance with the regulations imposed by the SET and the SEC and related governing laws.
5. To consider the disclosure of information regarding connected transactions or transactions that might have conflicts of interest, to ensure it is accurate and complete.
6. To prepare the Audit Committee Report as disclosed in the Company's Annual Report to be in compliance with the provisions imposed by the SET and the SEC.
7. To perform any other tasks that may be stipulated in the Articles of Association of the Company.
8. To perform any other tasks that may be delegated by the Board of Directors.

6.3 The Management as at 31 December 2020:

Name	Position
1. Mr. Prachai Leophairatana	Chief Executive Officer
2. Dr. Pramuan Leophairatana	President
3. Mrs. Orapin Leophairatana	Senior Executive Vice President
4. Mr. Prasert Ittimakin	Senior Vice President - Accounting and Finance Division
5. Mr. Karan Pipitsombat	Senior Vice President - Plant Manager
6. Mr. Somkeart Srisuwan	Senior Vice President - Information Technology Division
7. Miss Chularat Danwattanachai	Vice President - Accounting and Finance Division
8. Mr. Pongsak Yiengsakun	Vice President - Finance Department
9. Mrs. Bussara Ketmanee	Asst. Vice President - Accounting Department

Functions and Responsibilities of the Chief Executive Officer

1. To carry out activities prudently; to be in compliance with the objectives of the Articles of Association; and to be in line with establishing policy as approved by the Board of Directors of the Company, in order to protect the Company's interests and for the benefit of shareholders.
2. To monitor and manage daily operational results of each department to ensure these are carried out effectively and efficiently.
3. To assign, nominate, remove and punish employees and staff of the Company to comply with Company discipline.
4. To report work progress to be in line with work plans and budgets as approved by the Board of Directors.

Authority to approve and to perform their actions in the Company's transaction

The Company determined that the Board Directors of the Company has the authority to approve and amend work plans, annual budgets, each investment expense and budget for selling and administration expense of the Company. In this regard, the Chief Executive Officer and/or President, Senior Executive Vice President have power and authority to approve the investment based on the budget as earlier approved, an allowance for budget expenses, the plan and alteration of marketing plan as well as the annual budget of the marketing department, as earlier approved, with no limited budget. In the event, the Chief Executive Officer and/or President, Senior Executive Vice President have power and authority to approve the advertising, advertising campaign, sales promotion including all other marketing activities stated or not stated in the plans within the limited budget, as earlier approved.

Business relationships or professional service relationships between independent directors and the Company, or the parent company, or its affiliates, or subsidiary companies, or associated companies, or juristic persons within the Company, that may impose conflicts of interest in an amount exceeding the restricted amount under the notification of the SEC regarding permission and approval of new shares issuance (if any), as well as the resolution and opinion of the Board of Directors approval (if any).

-None-

Selection of the Directors and the Management

The Board of Directors of the Company is responsible for the selection of Directors and Management of the Company. Selection of Directors takes into consideration their background, knowledge, experience in related fields of business, ethical behavior, standards of integrity, independence, courage in giving opinions, responsible discharge of duties, precision and honesty, and consistent attendance at all Board meetings. Their resumes and their ethical behavior are taken into consideration as well as other appropriate qualifications deemed beneficial to the Company. We also consider other factors that may impose conflicts of interest.

Selection of the directors to replace those retiring by rotation is under the criteria of the Office of Securities and Exchange Commission and the Stock Exchange of Thailand.

Selection of Management takes into consideration their background, knowledge, abilities, professional skills, and experience deemed beneficial to the Company. Management selection is in compliance with recruitment procedures of the Company.

Criteria for selection of the Independent Directors are as follows:

1. Under the criteria of the Office of Securities and Exchange Commission and the Stock Exchange of Thailand, Independent Directors:
 - 1.1 Are restricted in the number of shares they may hold to not greater than 1% of the voting shares in the Company, its affiliates, its associated companies, or its juristic persons that may impose conflicts of interest (implicitly including related persons as stated in Section 258 of the SEC's Act B.E. 2535.)

- 1.2 Have no management participation in the Company, its affiliates, or its associated companies; and are not employees or regularly paid consultants, or persons who have control over the Company, its affiliates, or its associated companies or its juristic persons that may impose conflicts of interest.
 - 1.3 Have no business relationship with the Company, its affiliates, or its associated companies; and do not have any loss or gain, directly or indirectly, in the finance or management of the Company, its affiliates, or its associated companies; or its juristic persons that may impose conflicts of interest.
 - 1.4 Have no close relatives, or persons related in a way that may lead to a lack of independence from the management or major shareholders of the Company, its affiliates, or its associated companies, or its juristic persons that may impose conflicts of interest; nor may they be appointed to protect the interest of any director or major shareholders.
 - 1.5 Maintain consistent attendance at all board meetings and follow and monitor the business performance and operations of the Company.
2. Independent Directors must be capable, talented and knowledgeable, with backgrounds and experience deemed beneficial to the Company; such as backgrounds in engineering, accounting, finance etc.
 3. Independent Directors must perform their duties with great care and loyalty in the best interest of the shareholders, without conflict of interest with/for their own businesses or former businesses, or related parties.

6.3.2 Remuneration of the Directors

In 2020, remuneration awarded to the Company's 6 Executives including salaries and bonuses was Baht 205,281,900 compared to Baht 238,320,190 for total of 7 persons in 2019.

Company shares held by the Directors and the Management (including couple marriage and their off-spring) as at 30 December 2020

Name	Shareholding As at 4 August 2020 (shares)	Shareholding As at 30 December 2020 (shares)	Change Increase/ (decrease) During year 2020 (shares)
1. Mr. Prachai Leophairatana	874,346,240	874,346,240	-
2. Dr. Pramuan Leophairatana	808,900,000	808,900,000	-
3. Mr. Prayad Liewphairatana	867,122,740	867,122,740	-
4. Mrs. Orapin Leophairatana*	*	*	*
5. Mr. Manas Sooksmarn	-	-	-
6. Mr. Pisej Iamsakulrat	8,128,400	8,128,400	-
7. Mr. Thavich Taychanavakul	270,800	270,800	-
8. Mr. Tayuth Sriyusiri	94,425,890	94,425,890	-
9. Mr. Khantachai Vichakkhana	27,760	27,760	-
10. Miss Malinee Leophairatana	8,143,080	8,143,080	-
11. Mr. Supoj Singsane	-	-	-
12. Mr. Pakorn Leopairut	862,745,810	862,745,810	-
13. Mr. Pornpol Suwanamas	-	-	-
14. Miss Tanyaratt Iamsopana**	-	-	-
15. Mr. Prasert Ittimakin	10,480	10,480	-
16. Mr. Karan Pipitsombat	29,000	29,000	-
17. Mr. Somkeart Srisuwan	-	-	-
18. Miss Chularat Danwattanachai	-	-	-
19. Mr. Pongsak Yiengsakun	-	-	-
20. Mrs. Bussara Ketmanee	6,000	6,000	-

Remark: * Included in shareholding changes of Mr. Prachai Leophairatana to comply with the provisions contained in the SEC Act, article 258.

** At the Company's Board of Directors' meeting on 25 June 2020, it passed a resolution to approve the appointment of Miss Tanyaratt Iamsopana to the position of Director of the Board.

6.4 Employee Information

As at 31 December 2020, The Company and its subsidiaries have total of 9,896 employees and 157 executives, totaling 10,053 persons, divided into line of business as follows:-

Company / Business Group	Number of Employees		
	Head Office	Plant	Total
1. TPI Polene Public Co., Ltd. (Head Office)	1,113	-	1,113
2. Cement plant and Cement Distribution Terminal	-	4,490	4,490
3. LDPE plant , Rayong Province	-	590	590
4. Concrete Roof Tiles plant and Fiber Cement plant , Saraburi Province	-	811	811
5. TPI Concrete Co., Ltd.	203	1,274	1,477
6. TPI Polene Bio Organics Co., Ltd.	36	44	80
7. TPI Polene Power Public Co., Ltd. and subsidiaries.	103	1,070	1,173
8. TPI Refinery (1997) Co., Ltd.	2	-	2
9. Master Achieve (Thailand) Co., Ltd.	-	42	42
10. Thai Nitrate Co., Ltd.	10	72	82
11. TPI All Seasons Co., Ltd.	-	193	193
Total	1,467	8,586	10,053

Personnel Remuneration

As of 31 December 2020, total remuneration (not including the management) for the year 2020 was Baht 5,735.81 million. (This remuneration comprises salary, commissions, bonuses and other benefits)

Human Resource Development Policy

The Company strongly believes that highly competent employees are the key driver for corporate success. To this end, the Company has focused on continuous development of our human resources in addition to aiming for our employees to perform their duties ethically, responsibly, and with integrity and to embrace corporate social responsibilities. Furthermore, the Company strongly believes that offering training and progression to our employees will further reinforce the sustainable growth of our organization.

In addition to the aforementioned activities, the Company has taken the following initiatives in order to further enhance our employees' competency:

- Development courses and training programs: The Company fosters staff development at all levels. Each year, the Company schedules training programs specifically designed for each business unit to educate and to provide employees at different levels with an understanding of their tasks and responsibilities with safety. Scheduled training programs for this year were organized through survey needs from employees in each respective department to respond to the necessity for employees to join development courses and training programs.
- External Training: The Company encourages employees to acquire external education by subsidizing independent courses and seminars to be in line with job descriptions. The Company also regularly provides our employees with training courses and seminars both internally and externally in order to update our employees with outside prospective and keep up with new modern managerial styles. Employees are also supported to attend course seminars through the Skill Development Center and Safety Committee, for further preparation to be professional lecturers and auditors for technician classification at the factory. This includes the training courses providing to employees, such as, Digital Nation on Data Governance, A Joint Cooperation between Exim Thailand and NEXI, High Quality Recycled Concrete Towards a resource-saving recycling society, international trade law, strategic executives, IT compliance courses, it's time to turn the pollution crisis into decades of renewable energy, Service Innovation Masterclass 2020 "Innovative Services Strategy for Digital Transformation", Digital Business Solutions Summit 2020, meeting to hear about measures to discontinue the use of chrysotile as raw materials (asbestos tile and cement pipes), open laws, clear tax problems with tax gurus, prepare to obtain a license for a special engineering department in civil engineering, precautions for the preparation of financial statements, closing and presentation of financial statements, keeping pace with accounting for accountants in accordance with accounting guidelines, factory audit standards, etc.

- **In-house Training:** To develop our employees' ways of thinking, potential, and knowledge to perform their duties to be in line with our corporate objectives and competitive circumstances, the Company provides several in-house training programs on the following topics:

New Employee Orientation: To enroll the employees in the new employee welcome orientation and to foster an understanding of integrity and ethics. We also encourage our employees to meditate and study the ways of Dharma from notable and well-respected monks, and engage in Dharma practice, mediation practice and meditation walking during a 1-day course at Wat Rama IX Golden. The course session is held for employees to educate them in view of the cement production process, types, and quality of our products such as cement, concrete roof tiles, nano paints and organic fertilizers to ensure their confidence and pride in the Company, to encourage ethics and integrity, as well as to build positive working attitudes and relations with colleagues.

Dhamma Practice Course in Workplace and Dhamma Teachings: TPI Polene consistently arranges and supports employees to attend the annual programs, "Think Good, Behave Good, Happy Life and Cheerful Work". The aim is to cultivate and create self-consciousness and apply Buddha teachings as a guideline to live and work in a truthful way.

Management Training Program for Management: The training course includes a workshop for employees and executives of all levels to develop management skills in line with the company's business operations and keep up-to-date with current events. The training program includes job control and monitoring, targeting and planning work, coaching skills, coaching skills for supervisors, Personal Data Protection Act B.E. 2562 (2019), practical issues, etc.

Soft Skill Coursework: This includes team building success, communication and coordination techniques, consciousness of ownership and commitment to the organization, integrity, corporate love and dharma in mind, etc.

Course Seminars for Sales and Marketing Training Program: To develop and strengthen sales techniques and marketing skills to employees in the relevant departments such as sales planning for pro sales, modern sales and marketing techniques 4.0, etc.

Products and their Specifications Training Program: techniques to use products, such as TPIPL products, overview of products specification of TPIPL products etc.

Hygiene and Safety Management Standard: Course training arranged for heads of safety guards, and safety in the workplace for heads of departments.

Training on product knowledge and techniques on how to use products such as TPI products and application techniques, review knowledge of TPI products, etc.

Occupational health and safety courses such as supervisor-level occupational safety officers, etc.

Professional courses to be aware of new legal regulations that should always be up-to-date in operations, such as:

- Accounting tasks such as BOI tax benefits, exchange rate guidelines, system-wide VAT guidelines, tax conventions stacked with tax liabilities paid abroad, open laws clearing tax problems with tax gurus, Joint Cooperation between Exim Thailand and NEXI, etc.
- Human Resource Management Such as Personal Data Protection Act B.E. 2562 (2019), fraud, prevention, investigation, prosecution of corrupt employees, fighting lawsuits in court, etc.
- IT Compliance, Digital Business Solutions Summit 2020, Digital Nation on Data Governance, Service Innovation Masterclass 2020, "Service Innovation, Strategy for Digital Transformation", etc.
- Engineering such as factory inspection standards, preparing for professional licenses, controlled engineering, special engineers, civil engineering, etc.

Training Course Program for Management: To provide knowledge and management skills for employees at management level to develop their professional work to be efficient as well as to gain new knowledge and new revolution to be able to catch up with dynamic circumstances. The course training programs include: Digital Development Executive, Strategic Executive, Handling & Transporting Chemicals & Dangerous Goods Summit 2020, It's time to turn the pollution crisis into a decade. Renewable Energy, Service Innovation Masterclass 2020, "Service Innovation, Strategy for Digital Transformation" etc.

Energy Saving Course: The course session for energy management standards system: ISO50001, TSV Energy Chart & Energy Equation and Awareness of Energy Preservation.

In addition, the Company is focused on a policy to improve standards of living for employees, for them to be safe in both their lives and possessions as follows:

- The Company strictly prohibits drug activities; therefore, we have been certified as a “White Factory,” which signifies a sustainable “Drug-Free” zone. Random alcohol breath tests are regularly set up during long holiday periods to regularly protect and prevent accidents.
- The Company is committed to supporting disabled people to join the workplace by encouraging and promoting equal opportunities and equal treatment of people with disabilities. The Company has clear rules and regulations on employment to be strictly applied, regardless of sex, age, generic information, races, religious, education background which also includes equal opportunities for employees to progress in their careers as well as compensation. The employment policies and conditions of work are based on job requirements.

Quality and Productivity Enhancement: In addition to our emphasis on HSE, OSHA and CSR as delineated above, we made a full commitment to improve our productivity and to ensure product quality control and assurance. The Company provides various training to our employees on Quality Management System pursuant to ISO 9000, Environmental Management System pursuant to ISO 14001 and OHSAS, and Occupational Health and Safety Management System pursuant to Mor.Or.Kor. 18001 and CSR implementation for the employees and management. Training programs have been performed to encourage Office Improvement (“OI”) to be in line with Total Productive Management (“TPM”), in those departments that support (rather than being directly involved in) production. These “OI” programs focus on improving working processes, reducing waste, and increasing work efficiency, in order to effectively increase productivity.

Other than the employee performance evaluation of the annual review conducted by the supervisors of each respective department, the Company has implemented a new system of annual performance evaluation, with the objective that employees actively acknowledge and are involved in understanding the requirements of their jobs and are together responsible for the performance of the plants, particularly total production costs, expenses, safety of operations of each respective department and activity involvement in TPM.

Efficient Time Management: The Company also encourages employees to participate in social activities during their free time. Available activities include a Buddhism club and athletic clubs, such as a petanque club, a football club, a golf club, and volunteer club, etc.

Encourage saving program: TPI Polene and TPI Concrete have established a co-operative saving program for employees to encourage saving money. This also includes financial assistance in the form of loan offerings to employees at a lower interest rate as compared with financial institutions.

Employee welfare: The Company also strives to support equal opportunities for employees to progress and to be secure in their career by providing assessment standards of job appraisal, regardless of sex, age, generic information, race, religion, or educational background. The employment policies and conditions of work are based on job requirements. In addition, the Company offers special care for employees who perform their work in particular areas by providing remuneration in the form of salary and bonuses; the Company also provides subsidized healthcare benefits in the form of OPD medical expenses (outpatient department) to employees and their family members, including father, mother, spouses and legal offspring. The Company also provides free annual health check-ups; life and healthcare benefits are offered in the form of health insurance packages and accident insurance coverage. Financial assistance is also offered for funeral rites of the employees, as well as the family members of employees who pass away. The establishment of a “Funeral Assistance Association” among the Company’s employees was allowed to assist the members of the Association foundation to offer financial assistance for funeral rites of the employees. In addition, the Company offers special care for employees who perform their work in particular areas by providing free health check-ups at medical centers and free vaccination against tetanus and hepatitis B (HBV) to all employees and to ensure that all levels of the Company’s staff have received annual healthcare check-ups. Any employees found ill or with other physical impairments will be sent for repeated healthcare check-ups and put on other job rotations. Also, the Company provides mobile medical units for check-up services for the people in the surrounding community and encourages employees to jointly donate blood to Saraburi Center Hospital and Saraburi Red Cross every three months. TPI Polene also supported athletic activities such as the matches of “Association Football” between each department, held at our cement plant, to encourage coordination and harmonization between the management team and staff of the Company. The Company also entered an agreement with the Government Housing Bank and Government Savings Bank to grant sources of funds for home loans for employees at a relatively low interest rate.

Employee welfare: The Company also provides educational support for children of employees by granting scholarships and provides additionally subsidized welfare to them.

Provide opportunities to the disabled to work in the Company

The Company strives to support equal opportunities in society, and it has clear rules and regulations on employment that are strictly applied. These also include equal opportunities for employment regardless of sex, age, generic information, races, religion, educational

background as well as compensation and career paths. The employment policies and conditions of work are based on job requirements and the qualifications of that particular person.

Personnel Management System: The personnel management system at our cement plant is an online system. The program provides several services online; for instance, employee online attendance system and compensation leave system. This includes online personnel management system linkage through all units of operation, such as online attendance system and leave system, by applying finger scan for recording work attendance. This also includes an employee performance appraisal system and payroll. CCTV has been installed in particular spots in the workplace. Throughout 2019, the personnel management system has been improved by connecting the HR management system through an online system with the employee's mobile phone, which allows review of the employee's basic data, such as work time attendance, leave of absence data, medical expenses, as well as checking correspondence and parcels. To this end, employees can check their personal data through the online network at any location and time and directly connect with Human Resources. This makes it possible to access information regarding the Company's announcements or news to employees in a timely manner. The establishment of small group activities according to the Office Improvement in Total Production Management system, which could save annual costs and expenses in the amount of 214,276 Baht. The system involves reduction of work procedures with the implementation of IT and reduced usage of paper. It also means the Company doesn't have to hire more employees to replace those who resign from their positions.

The Company has set up a group on the "LINE Application" as a secure group of all departments of the Company, with the CEO in conjunction with all employees in the departments, to optimize communication between the CEO, management and all employees.

6.5 Other key information

6.5.1 Corporate Secretary

The Company has appointed Mr. Nitisit Jongpitakrat as the Company Secretary since June 30, 2006, as approved and resolved in the Company's Board of Directors' meeting no. 6/2549 on June 30, 2006, with duties and responsibilities as defined in the Securities Act. Details about the Company's Secretary appear in the section titled, "Details of the Board of Directors, Executives and Corporate Secretary".

6.5.2 Audit Fees

1. The Company and its subsidiaries paid audit fees for 2020 as follows:-

- (1) The statutory auditor of the Company for the financial year ended 2020 in the amount of Baht -0-
- (2) The office of the statutory auditor of the Company, or other persons or related enterprises relating to the statutory auditor of the Company for year 2020 in the amount of Baht 11,600,000.

2. Non-Audit Fees

TPIPL and its subsidiaries paid a fee to KPMG Phoomchai Audit Limited to review the report of promotional privileges and benefits of exemption from payment of corporate income tax by virtue of the promotional certificates of the Board of Investment in 2020 for a total of Baht 240,000.

7. Report on performance of Corporate Governance

7.1 Development and Training of Directors

The Company has consistently arranged for Directors to participate in the training course programs organized by the Thai Institute of Directors Association (IOD) to enhance their knowledge of directorship. In 2020, the Board of Directors participated in the Directors Association Program (DAP) session no. 196/2020 with the Thai Institute of Directors Association. In addition, the Company has always provided Directors with information relating to good corporate governance practices.

7.2 Meeting attendance of the Board of Directors' Meeting and the Audit Committee of the Company

In 2020, the Board of Directors and the Audit Committee convened meetings a total of 12 times and 5 times, respectively, with attendance as detailed below:

Name	Position	Number of Meeting Attendance	
		The Board of Directors 12 Times / 2020	The Audit Committee 5 Times / 2020
1. Mr. Prachai Leophairatana	Director	12/12	-
2. Dr. Pramuan Leophairatana	Director	12/12	-
3. Miss Malinee Leophairatana	Director	12/12	-
4. Dr. Chavin Iamsopana ^{1/}	Director	3/12	-
5. Mr. Prayad Liewphairatana	Director	12/12	-
6. Mrs. Orapin Leophairatana	Director	12/12	-
7. Mr. Manas Sooksmarn	Independent Director and Audit Committee	12/12	5/5
8. Mr. Pises Iamsakulrat	Independent Director and Audit Committee	12/12	4/5
9. Mr. Thavich Taychanavakul	Independent Director and Audit Committee	11/12	4/5
10. Mr. Tayuth Sriyusiri	Director	12/12	-
11. Mr. Khantachai Vichakkana	Chairman and Independent Director	12/12	-
12. Mr. Supoj Singsane	Chairman of the Audit Committee and Independent Director	12/12	5/5
13. Mr. Pakorn Leopairut	Director	11/12	-
14. Mr. Pornpol Suwanamas	Director	12/12	-
15. Miss Tanyaratt Iamsopana ^{2/}	Director	6/12	-

Remarks:1/. Dr. Chavin Iamsopana, Independent Director of the Company passed away on 6 May 2020

2/. At the Company's Board of Directors' meeting on 25 June 2020, it passed a resolution to approve an appointment of Miss Tanyaratt Iamsopana to be in the position of Director of the Board.

7.3 Remuneration of the Directors and the Management and Audit Committee

Remuneration in monetary terms

(1) Remuneration of the Directors

In 2020, remuneration awarded to the Company's 15 directors in the form of meeting allowances and bonuses was Baht 28,618,528 compared to Baht 24,571,575 in 2019 for 15 directors. Details of remuneration in 2020 are as follows:

Unit: Baht

No.	Name	Position	Meeting allowances	Bonus	Total
1.	Mr. Khantachai Vichakkhana	Chairman	1,804,908	280,818	2,085,726
2.	Mr. Prachai Leophairatana	Director	1,804,908	280,818	2,085,726
3.	Dr. Pramuan Leophairatana	Director	1,804,908	280,818	2,085,726
4.	Mr. Supoj Singsanei	Director	1,804,908	280,818	2,085,726
5.	Miss Malinee Leophairatana	Director	1,804,908	280,818	2,085,726
6.	Dr. Chavin Iamsopana ^{1/}	Director	601,636	280,818	882,454
7.	Mr. Prayad Liewphairatana	Director	1,804,908	280,818	2,085,726
8.	Mrs. Orapin Leophairatana	Director	1,804,908	280,818	2,085,726
9.	Mr. Manas Sooksmarn	Director	1,804,908	280,818	2,085,726
10.	Mr. Pisej Iamsakulrat	Director	1,804,908	280,818	2,085,726
11.	Mr. Tayuth Sriyuksiri	Director	1,804,908	280,818	2,085,726
12.	Mr. Thavich Taychanakul	Director	1,804,908	280,818	2,085,726
13.	Mr. Pakorn Leopairut	Director	1,804,908	280,818	2,085,726
14.	Mr. Pornpol Suwanamas	Director	1,804,908	-	1,804,908
15.	Miss Tanyaratt Iamsopana ^{2/}	Director	902,454	-	902,454
Total			24,967,894	3,650,634	28,618,528

Remarks: 1. Dr. Chavin Iamsopana, Director of the Company passed away on 6 May 2020.

2. At the Company's Board of Directors' meeting on 25 June 2020, it passed a resolution to approve the appointment of Miss Tanyaratt Iamsopana to be in the position of Director of the Company.

Remuneration of the Directors in subsidiaries (Thai Nitrate Co., Ltd.)

No.	Name	Position	Meeting allowances	Bonus	Total
1.	Mr. Prachai Leophairatana	Director	120,000	120,000	120,000
2.	Dr. Pramuan Leophairatana	Director	80,000	80,000	160,000
3.	Mr. Prayad Liewphairatana	Director	80,000	80,000	160,000
4.	Mrs. Orapin Leophairatana	Director	80,000	80,000	160,000
5.	Mr. Pakorn Leopairut	Director	80,000	80,000	160,000
Total			440,000	440,000	880,000

(2). Other remuneration

Other remuneration to the Management includes company cars for each position.

7.4 Supervision of subsidiaries and associated companies

The Company has a policy of investing in subsidiaries and/or associated companies with policies in line with the Group's vision and growth plan, which will enable the Group to generate high profit and achieve its goals of being a leading entrepreneur in the business and to support the Company's core business operations as well as to be convenient and responsive and effective in business operation and increases competitiveness based on factors such as legal provisions, financial structure, taxation and risk management, etc.

The Company has a strategy to manage TPI Polene Group so that the subsidiaries are required to conduct business in accordance with the Company's policies in order to have systematic management and supervision in the same direction. As for management of subsidiaries and/or associated companies, the Company has sent representatives to be in the position of the Executive Directors to jointly make decisions about its policies and operational plans with an adherence to good corporate governance principles, ethics in conducting business in order to operate the business efficiently, transparently, fairly and achieve the set objectives.

7.5 Supervision of compliance with corporate governance policies and practices

The Company has followed up to ensure compliance with good corporate governance as follows:

Supervision of the use of inside information

The Company values supervision to ensure all groups of shareholders can access the Company's information equitably and fairly. The inside information or undisclosed information which might have a direct impact on share price of the Company is considered confidential information for internal use to operate the Company's business. The Directors and the Management and all levels of employees have to keep internal information confidential. The Company has put in place the use of inside information as follows:

1. Employees shall keep information of the Company's clients as confidential and shall not trade information and not disclose such information, except to the extent required to be disclosed by applicable law or approved by the Board of Directors of the Company.
2. Any disclosure of information which might have any effect on the Company must be carried out by authorized persons or by obtaining authorization from an authorized person.
3. The inside information involving business operations and administration is considered confidential. Disclosure of such inside information to the public might have an effect on the Company.
4. All employees and related persons shall not disclose non-public information to the public and shall not sell or purchase securities of the Company or of any Companies by using non-public information.
5. Important documents and confidential information must be carefully kept, taken care of, and easily accessible under special methods at each level or for each type of information (document or electronic). After the expiry period of the data retention, the responsible employee has to destroy information properly and correctly as some documents are to be kept to comply with governing laws (as the case may be).

The Company has a policy to regulate the Directors and the Management to use inside information, that is not disclosed to the public, for their benefit including purchasing and selling securities as follows:

1. The Company will advise the Directors, the Management and the person who is in charge of the Accounting & Finance department to understand their duties to submit a report of ownership in the Company, including their spouses and children not yet of legal age, to the SEC to be in accordance with provision contained in section 59 and section 257 of the Securities and Exchange Act B.E. 2535. This includes a report of their acquisition and sales of securities in the Company, including their spouses and children not yet of legal age, to the SEC to be in accordance with the section 246 and section 298 of the Securities and Exchange Act B.E. 2535.
2. The Company requires the Board, the Management and executive persons in charge of the Accounting or Finance department, including their spouses and children not yet of legal age, to prepare and submit reports of their ownership in the Company to the corporate secretary prior to filing such report to the SEC. Such a report shall be prepared and submitted to the corporate secretary within 30 days from the date when they first hold the position. After that, they shall report every transaction within three business working days from the purchasing or selling date.
3. Prohibition of the Board of Directors and employees in related departments, including their spouse and children not yet of legal age, of purchasing or selling the Company's securities within 1 month before quarterly and yearly financial reports are due to be released publicly and within 24 hours from the disclosure date of such financial statements to the public.

In addition, the Board of Directors and employees in related departments, including their spouse and children not yet of legal age, are prohibited from purchasing or selling the Company's securities by using undisclosed information, which might affect the price of the Company's securities, up until the expiration of the 24-hour period after such information has been disclosed to the public.
4. The Company has set up criteria and guidelines for penalties for offenders for use of inside information for personal advantage. The penalties include a letter of employee reminder, waiver of wage payment, temporary work suspension without payment, and layoffs. The penalties will be considered subject to the intent of the action and the seriousness of the offense.

8. Internal Controls and Inter-Company Transactions

8.1 Internal Controls

At the Board of Directors' meeting no. 1/2564, held on 28 January 2021, attended by the 3 Audit Committees, the Board considered and evaluated the sufficiency of the internal control systems of the Company by investigating the Management and other relevant departments, and considering an assessment report which was prepared by the Management and reviewed by the Audit Committee. These were 5 aspects of internal control systems as follows:

1. The organization and environmental control system
2. The risk management system
3. Management control system
4. Information and communication system
5. The monitoring system

The resultant assessment showed that the internal control systems of the Company operated appropriately and sufficiently. The Company provided sufficient employees to efficiently follow-up the internal control systems, and to sufficiently monitor the operations of the Company to safeguard the Company's assets including transactions which a possible conflict of interest might occur. The Board also considered that other aspects of the internal control systems are sufficient.

8.2 Inter-Company Transactions

Disclosure of information about inter-company transactions, and other transactions that might have the potential to involve conflicts of interest, is in compliance with the rules and regulations imposed by the SET and the SEC.

The Audit Committee has performed its duties and responsibilities to review inter-company transactions. The procedures used in inter-company transactions have always been subject to the normal terms and conditions of business and reflect applicable market prices. The Company established procedures for the above transactions in the same manner as for transactions with general customers and all inter-company transactions reflect applicable market prices to ensure that there are no conflicts of interest.

As of 31 December 2020, the Company and its subsidiaries had inter-company transactions with related persons, which might have the potential to involve conflicts of interest. The Directors and/or Management have considered the reasonableness of the above inter-company transactions, and all were undertaken for the maximum benefit of the Company and were subject to the normal terms and conditions of business to reflect applicable market prices and in compliance with the rules and regulations imposed by the SET and the SEC. Details of the inter-company transactions are contained in Note 4 of the consolidated financial statements as at December 31, 2020, which can be summarized as follows:

Company (Description of relationship)	Description of transaction	Baht million	Necessity and reasonableness
1. United Grain Industry Co., Ltd. ("UGI") (There are 5 common Directors. Mr. Prachai Leophairatana Dr. Pramuan Leophairatana Mr. Prayad Liewphairatana Mrs. Orapin Leophairatana Miss Malinee Leophairatana)	The Company and its subsidiaries paid UGI for cement bags. Accounts Payable	8.577 3.636	Transactions are always undertaken at market rates to support normal business operations of the Company.
2. Thai Plastic Film Co., Ltd. (There are 7 common Directors. Mr. Prachai Leophairatana Mr. Prateep Leopairut Dr. Pramuan Leophairatana Mr. Prayad Liewphairatana Mrs. Orapin Leophairatana Miss Malinee Leophairatana)	The Company sells plastic resin to Thai Plastic Film Co., Ltd. The Company hires Thai Plastic Film Co., Ltd. to produce cement bags at the rate of Baht 2.00 to 2.60 per bag. (This rate includes labor cost, rental charges, electricity and other related expenses) The Company and its subsidiaries paid Thai Plastic Film Co., Ltd. for cement bags. Accounts Payable	0 112.734 73.321 137.076	Transactions are always undertaken at market rates to support normal business operations of the Company.
3. Thai Plastic Product Co., Ltd. (There are 7 common Directors. Mr. Prachai Leophairatana Mr. Prateep Leopairut Dr. Pramuan Leophairatana Mr. Prayad Liewphairatana Mrs. Orapin Leophairatana Miss Malinee Leophairatana)	The Company and its subsidiaries purchased cement bags for export from Thai Plastic Product. Accounts Payable The Company sold plastic resin to Thai Plastic Product Co.,Ltd.	379.098 210.678 0	Transactions are always undertaken at market rates to support normal business operations of the Company.
4. Bangkok Union Insurance Plc. (BUI) (There are 4 common Directors. Mr. Prachai Leophairatana Miss Malinee Leophairatana Mr. Thavich Taychanavakul Miss Tanyaratt Iamsopana)	The Company and its subsidiaries paid insurance premium to BUI.	288.507	Transactions are always undertaken at market rates to support normal business operations of the Company.
6. Bangkok Union Life Insurance Plc. (There are 4 common Directors. Dr. Pramuan Leophairatana Mr. Prayad Liewphairatana Miss Malinee Leophairatana Miss Tanyaratt Iamsopana)	The Company and its subsidiaries paid life insurance premium to Bangkok Union Life Insurance Plc.	28.133	Transactions are always undertaken at market rates to support normal business operations of the Company.

The details of the connected transactions for the year 2020 are disclosed in the annual report of the Company through the Company's website (www.tpipolene.co.th)

Procedures to approve Related Transactions

Since the Company is a listed company, its practices regarding related transactions are conducted according to the rules and regulations of the SET and the SEC. The Company is highly aware of the sensitivity of this issue and closely monitors any situation in which a potential related transaction could occur. The above inter-company transactions were subject to the normal terms and conditions of business to reflect applicable market prices. Directors of the Company who are not deemed to be connected parties to such transactions are responsible for making decisions in regard to the said connected transactions.

The process for approval of connected transactions will be carried out under the standards of integrity and be reviewed by the Audit Committee to be in the best interests of the Company and its shareholders. This complies with SEC and SET regulations. The Company will disclose types and values of transactions that might present conflicts of interest accurately and completely. For any transactions that are considered to have potential conflicts of interest, market prices will be used as criteria to consider those transactions.

Potential Future Related Transactions

The Company expects to continue its business transactions with subsidiaries, the Joint Venture Company, affiliated companies, and related companies in the normal course of its business. Inter-company transactions are subject to normal terms and there is no conflict of interest. The Company adheres to practices for the above transactions that comply with the SET regulations, and regulations of other relevant governmental authorities, with regard to the reasonableness of the conditions and fair prices.

9. Social Responsibility Policy

As per details in Attachment 4.

Board of Directors and Corporate Secretary as at 31 December 2020

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Mr. Khantachai Vichakkhana 73 years of age -no relationship	Master of Political Science, (Public Administration), Thammasat University	0.00	Jun 25 2018-Present	Chairman and Independent Director	TPI Polene Plc.
	Bachelor of Law, Thammasat University		Jan 2016-Present	Independent Director	TPI Polene Power Plc.
	Directors Accreditation Program (DAP- No.112/2014) Thai Institute of Directors (IOD)		Aug8,2014-Present	Independent Director, Director, Audit Committee, the Nomination, Remuneration and Corporate Governance committee	L.P.N. Development Public Co.,Ltd.
	Role of Compensation Committee (RCC-No.19/2014) Thai Institute of Directors (IOD)		2002-2008	Independent Director	Tong Hua Holding Plc.
	Directors Certification Program (DCP- No.119/2015) Thai Institute of Directors (IOD)		2000-2002	Deputy Director -General Directors: Land Registration Bureau	Department of Lands Department of Lands
	Guest Speaker Training Program- Land Class 2: Department of Land (1979)		2000	Staff Plan & Policy Analysis (Land)	Department of Lands
	Internal Security Operations Command Program (ISOC): Royal Thai Army (1979)		1999-2000	Inspector-General	Department of Lands
	Advance Land Management School Program Class 3: Department of Lands (1984)		1998-1999	Director of Bureau Authority Land	Department of Lands
	Advance administration Program: Class 30, Institute of Administration Development, Department of Provincial Administration (1993)		1995-1998	Land Management Division	Department of Lands
	High Level Information Technology Executives (CIO) Seminar (2003)		1992-1995	Department of Important book	Department of Lands
	Political Development in Democratic Governance for Executives Program Class 8, King Prajadhipok's Institute (2004)		1990-1992	Land Officer- Chonburi	Department of Lands
			1989-1990	Land Officer- Phuket	Department of Lands
			1988-1989	Land Officer- Nonthaburi and Bangyai District	Department of Lands
			1986-1988	Land Officer- Nakhornnayok	Department of Lands
			1986	Land Officer- Uttaradit	Department of Lands
			Extracurricular	Council Member	Rajamangala University or technology Bangkok
				Assets Management Committee	Thai Red Cross Council
				Inquiry Committee	Election Commission of Thailand
				Advisor	Islamic Bank of Thailand
				Committee	Executive Public Administration Foundation (EPAF) TriamudomsuksaAlumni Foundation
				Committee	Retired Government Officials' Pension Association of Interior Foundation
				Committee	EPA Thammaasat University
				Committee	Anan Anantakool Foundation
				Committee	Dr.Suk Pookayaphon Foundation Hospital & phrapiya school Foundation
				Assets Management Committee	Srisavarindhira Thai Red Cross Institute of Nursing

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Mr. Prachai Leophairatana 77 years of age Younger brother of Miss Malinee Leophairatana, elder brother of Mr. Prateep Leopairut, Dr. Pramuan Leophairatana and Mr. Prayad Liewphairatana	Honorary Doctorate Degree in Industrial Engineering, Rajamangala University of Technology Krungthep M.S.(EE) University of California (Berkeley) U.S.A. B.E.(EE) (1 st Class Hons.) University of Canterbury, New Zealand Directors Accreditation Program (DAP- No.35/2005) Thai Institute of Directors (IOD)	0.00	2001-Present	Chief Executive Officer	TPI Polene Plc.
			1991-Present	Chairman	TPI Polene Power Plc.
			Jan2016-Present	Chairman of the Management Committee	TPI Polene Power Plc.
			April 2012-Present	Director	Bangkok Union Insurance Public Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Deep Sea Port Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Polene Power (Songkhla) Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Wind Power Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Solar Power Co.,Ltd.
			2000-2006	Chairman Executive Director	Bangkok Union Insurance Public Co.,Ltd.
			1978-2006	Chief Executive Officer	Thai Petrochemical Industry Public Co.,Ltd. and TPI Polene Group of Companies.
			1992-2000	Senator	Parliamentary Commission
			1969-1997	Chairman	Cathay Finance & Securities Plc.
Dr. Pramuan Leophairatana 72 years of age Younger brother of Miss Malinee Leophairatana, Mr. Prachai Leophairatana and Mr. Prateep Leopairut, elder brother of Mr. Prayad Liewphairatana	M.S., SC.D. Massachusetts Institute of Technology (MIT), U.S.A. B.S. (Honors) University of California (Berkeley), U.S.A. Directors Accreditation Program (DAP- No.39/2005) Thai Institute of Directors (IOD) National Defense College No.41 and National Defense College in cooperation with the private sector No.11, King Prajadhipok's Institute	4.22	2001-Present	President	TPI Polene Plc.
			1973-Present	Director	Leophairatana Enterprises Co.,Ltd.
			1988-Present	Director	Thai Plastic Product Co.,Ltd.
			1989-Present	Director	Thai Plastic Film Co.,Ltd.
			1989-Present	Director	United Grain Industry Co.,Ltd.
			1991-Present	Vice Chairman	TPI Polene Power Plc.
			1991-Present	Executive Director	TPI Concrete Co.,Ltd.
			1997-Present	Executive Director	Bangkok Union Life Insurance Public Co.,Ltd.
			2002-Present	Chairman	Polene Plastic Co.,Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co.,Ltd.
			Jul.2014-Present	Executive Director	Mondo Thai Co.,Ltd.
			Aug.2016-Present	Executive Director	Thai Nitrate Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Polene Power (Songkhla) Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Solar Power Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Wind Power Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Deep Sea Port Co.,Ltd.
			Oct.2013-Jan.2015	Executive Director	Thai Nitrate Co.,Ltd.
			1996-Jul.2014	Executive Director	Mondo Thai Co.,Ltd.
			1990-Aug.2013	Executive Director	Thai Nitrate Co.,Ltd.
			1978-2006	Director	Thai Petrochemical Industry Plc.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Miss Malinee Leophairatana 79 years of age Elder sister of Mr.Prachai Leophairatana, Mr.Prateep Leopairut, Dr.Pramuan Leophairatana and Mr.Prayad Liewphairatana	Master Degree in Actuarial Science Georgia State University, U.S.A. Bachelor of Commerce and Accounting Major in Statistics (Second Honour) Chulalongkorn University Directors Certification Program (DCP) No.22/2002 Thai Institute of Directors (IOD) Certified as Actuary under Section 78/2 of The Non-Life Insurance Act B.E.2535 as Amended by Non-Life Insurance Act (No.2), B.E.2551	0.04	April 2016-Present	Director	TPI Polene Plc.
			Jan 2016-Present	Director	TPI Polene Power Plc.
			Present	Director	Leophairatana Enterprises Co., Ltd.
			2011-Present	Chairman Executive Officer	Bangkok Union Insurance Plc.
			1997-Present	Director	Bangkok Union Life Insurance Plc.
			1987-1989	President	Thai General Insurance Association
Mr. Prayad Liewphairatana 70 years of age Younger brother of Miss Malinee Leophairatana, Mr. Prachai Leophairatana, Mr. Prateep Leopairut, and Dr. Pramuan Leophairatana	M.S.C.E. University of Michigan (ANN ARBOR) U.S.A. Directors Accreditation Program (DAP- No.29/2004) Thai Institute of Directors (IOD)	4.521	1987-Present	President	TPI Polene Plc.
			1973-Present	Director	Leophairatana Enterprises Co.,Ltd.
			1988-Present	President	Thai Plastic Product Co.,Ltd.
			1988-Present	President	United Grain Industry Co.,Ltd.
			1989-Present	President	Thai Plastic film Co.,Ltd.
			1991-Present	Executive Director	TPI Polene Power Plc.
			1991- Present	Executive Director	TPI Concrete Co.,Ltd.
			1996-Present	Executive Director	Mondo Thai Co.,Ltd.
			1997- Present	Executive Director	BUI Life Insurance Co.,Ltd.
			2002-Present	Executive Director	Polene Plastic Co.,Ltd.
			Aug 2, 2016-Present	Executive Director	Thai Nitrate Co.,Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co.,Ltd.
			1981-2006	Director	International Plastic Trading Co.,Ltd.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Mrs. Orapin Leophairatana 74 years of age Mr. Prachai Leophairatana's wife	Political Science (2 nd Class Honors) Chulalongkorn University Directors Accreditation Program (DAP- No.35/2005) Thai Institute of Directors (IOD)	4.56	1998-2003,	Director/Senior Executive	TPI Polene Plc.
			2005-Present	Vice President	
			1998-Present	Executive Director	TPI Concrete Co., Ltd.
			2002-Present	Executive Director	Polene Plastic Co.,Ltd.
			2007-Present	Vice Chairman	TPI Polene Power Plc.
			2009-Present	Executive Director	TPI All Season Co., Ltd.
			2010-Present	Executive Director	United Grain Industry Co.,Ltd.
			2010-Present	Executive Director	Thai Petrochemical Industry Co.,Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co.,Ltd.
			Jul.2014-Present	Executive Director	Mondo Thai Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Polene Power (Songkhla) Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Solar Power Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Wind Power Co.,Ltd.
			Oct2019-Present	Executive Director	TPI Deep Sea Port Co.,Ltd.
			Oct.2013-Jan.2015	Executive Director	Thai Nitrate Co.,Ltd.
			2009-Aug2013	Executive Director	Thai Nitrate Co.,Ltd.
			2001-2011	Director	Thai Listed Company Association
			April-Dec1997	Director	Association of Finance Companies
			1986-1997	Director	Bangkok Stock Trading Center
			1995-1997	Chairman	Association of the Securities Brokerage
			1995-1997	Managing Director	Cathay Finance & Securities Plc.
			1977- 1982	Third Secretary	Ministry of Foreign Affairs
Mr. Supoj Singsane 72 years of age -no relationship	M.B.A. Finance, Michigan State University, U.S.A. Bachelor of Accounting (Honor), Thammasat University Directors Certification Program (DCP-No.90/2007) Thai Institute of Directors (IOD) The Role of Chairman Program (RCP) No.18/2008 Thai Institute of Directors (IOD) Successful Formulation & Execution of Strategy (SFE) No.4/ 2009 Thai Institute of Directors (IOD)	-	Jun 25, 2018-Present	Chairman of the Audit Committee and Independent Director	TPI Polene Plc.
			Apr 25, 2018- Jun 2018	Independent Director and Audit Committee	TPI Polene Plc.
			2016- Present	Director	Marui Real Estate Co., Ltd.
			1988- Present	Director	Pisant Co., Ltd.
			2018- Present	Chairman and Chairman of the Audit Committee	Saksiam Leasing Plc.
			2018- Present	Chairman and Chairman of the Audit Committee	Samart Aviation Solutions Plc.
			2019- Present	Director	Sabaijai Money Co.,Ltd.
			1995-2015	Audit Partner and Senior Consultant	KPMG Phoomchai Audit Co., Ltd.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Mr. Manas Sooksmarn 86 years of age -no relationship	Master of Science in Industrial Engineering and Management, Oklahoma State University, U.S.A. Post Graduate diploma Industrial Development Programming. (Economics) Institute of Social Studies (ISS), The Hague, Netherlands Master of Political Science, Ramkhamhaeng University B.E. (Industrial Engineering), Chulalongkorn University. National Defense College No.31 Directors Accreditation Program (DAP- No.47/2005) Thai Institute of Directors (IOD)	-	2005-Present	Member of the Audit Committee and Independent Director	TPI Polene PLC.
			1996-2000	Senator	The Senate of Thailand
			1996-1997	Committee	Express Authority of Thailand
			1997	Advisor to Deputy Minister	Ministry of Interior
			1997, 2001	Advisor to Deputy Minister	Ministry of Agriculture and Cooperatives
			2006	Honorable Committee	The Constitutional Court
			Oct1,1992-Sep30,1993	Department of Industrial Promotion	Ministry of Industry
			1993-1995	Deputy Permanent of Industrial Promotion	Ministry of Industry
			1995-1996	Deputy Permanent Secretary	Ministry of Industry
Mr. Pises Iamsakulrat 57 years of age -no relationship	Master of International Trade, Golden Gate University, U.S.A. Bachelor Degree, Business Administration, Menlo College, California, U.S.A Directors Accreditation Program (DAP- No. 140/2017) Thai Institute of Directors (IOD)	0.04	Mar1,2018-Present	Independent Director and Audit Committee	TPI Polene PLC.
			2008- Present	Director	TPI Polene PLC.
			1987- Present	Managing Director	Iamsakulrat Co., Ltd.
			1990- Present	Managing Director	Lampang Food Products Co., Ltd.
			1995- Present	Vice President	Laos Industrial-Agriculture Co., Ltd.
			1997- Present	Director	K. Cotton & Gloss Co., Ltd.
			1997- Present	Director	TPI Holding Co., Ltd.
			2004- Present	Managing Director	Maekong Inter Trade Co., Ltd.
Mr. Thavich Taychanavakul 72 years of age -no relationship	Bachelor Degree, Business Administration Kinki University, Japan National Defense College No. 366 Directors Accreditation Program (DAP- No. 6/2003) Thai Institute of Directors (IOD) Finance for Non-finance Director (FND) No.30/2006 Thai Institute of Directors (IOD)	0.01	Mar1,2018-Present	Audit Committee	TPI Polene PLC.
			2008-Present	Independent Director	TPI Polene PLC.
			2013-Present	Chairman Executive Director	Mae Fah Luang University Council
			2012-Present	Advisor	Thai Industrial Estate Association
			2012-Present	Chairman Executive Director	Hi-Tech Kabin Logistics Co.,Ltd.
			1999-Present	Chairman Executive Director	Ayutthaya Technology Hi-Tech Center Co.,Ltd.
			1990- Present	Chairman Executive Director	Thai Industrial Estate Co., Ltd.
			May15, 2014-Present	Audit Committee/Independent Director	Bangkok Union Insurance Plc.
			Mar18, 2019-Present	Chairman Executive Director	Inter Far East Energy Corporation Plc.
Mr.Tayuth Sriyüksiri 67 years of age -no relationship	Master Of Business Administration, Boston University, U.S.A. Bachelor's Degree, Engineering, Mechanic, Worcester University, U.S.A. Director Accreditation Program (DAP- No.29/2004) Thai Institute of Directors (IOD)	0.49	2008-Present	Executive Director	TPI Polene Public Plc.
			1982- Present	Managing Director	K. Cotton & Gloss Co., Ltd.
			1994- Present	Director	TPI Holdings Co., Ltd.
			1999- Present	Director	Micro Fiber Industry Co., Ltd.
			2005- Present	Director	Hua Thai Manufacturing Plc.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Miss Tanyaratt Iamsopana 44 years of age -no relationship	Master of Science, Technical University Berlin, Germany. Bachelor's Degree, Engineering, Thammasat University Directors Accreditation Program (DAP- No.58/2006) Thai Institute of Directors (IOD) The Executive Program for Young Professionals (EYP) 2/2016 Ministry of Finance	-	2008-Present	Executive Director	TPI Polene Plc.
			1982-Present	Managing Director	K. Cotton & Gloss Co., Ltd.
			1994-Present	Director	TPI Holdings Co., Ltd.
			1999-Present	Director	Micro Fiber Industry Co., Ltd.
			2005-Present	Director	Hua Thai Manufacturing Plc.
Mr. Pakorn Leopairut 41 years of age -no relationship	Master of Public and Private Management NIDA CEDI-BABSON ENTREPRENEURIAL LEADERSHIP PROGRAM No. 1/ 2556 Young F.T.I Eite No. 1 The Federation Of Thai Industries Executive Development Program No.10 Ministry of Finance FP0:Forum Economic Guru Seminar No.3 Ministry of Finance Energy Executive Program No. 1 The Federation Of Thai Industries Directors Accreditation Program (DAP- No.132/2016) Thai Institute of Directors (IOD) Tisco Wealth Enhancement Program (WEP 4) No.4 (2016) The Young Executive Program in Energy Literacy for a Sustain- able Future (YTEA) No.7 (2019)	4.50	2007-Present	Executive Director	TPI Polene Power Plc.
			Jan 2016-Present	Member of the Management Committee	TPI Polene Power Plc.
			Feb 2016-Present	President	TPI Polene Power Plc.
			2019-Present	Executive Director	TPI Polene Plc.
			2008-Present	Assistant Vice President	TPI Polene Plc.
			2009-Present	Executive Director	TPI All Seasons Co., Ltd.
			2010-Present	Executive Director	TPI Polene Bio Organics Co., Ltd.
			2010-Present	Executive Director	TPI Service Co., Ltd.
			2010-Present	Executive Director	TPI Polene Power (International) Co., Ltd.
			2014-Present	Executive Director	TPI Commercial Co., Ltd.
			Jul 2015-Present	Executive Director	TPI Healthcare Co., Ltd.
			Jul 2015-Present	Executive Director	TPI Refinery (1997) Co., Ltd.
			2006-Present	Executive Director	Thai Petrochemical Industry Co., Ltd.
			2007-Present	President	Thai Nitrate Co., Ltd.
			Oct2019-Present	Executive Director	TPI Polene Power (Songkhla)
			Oct2019-Present	Executive Director	TPI Solar Power Co., Ltd.
			Oct2019-Present	Executive Director	TPI Wind Power Co., Ltd.
			Oct2019-Present	Executive Director	TPI Deep Sea Port Co., Ltd.
			2007-2008	Investment Analyst	MFC Asset Management Plc.
			2002-2007	Supervisor	Thai Petrochemical Industry Plc.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Mr. Pornpol Suwanamas 42 years of age -no relationship	Bachelor of Humanities, Srinakharinwirot University Master of Technology and printing / Mind and Brain Learning of Oxford Brookers University PhD. Of Buddhist theology at Wat Bowoniwet school in Bangkok Certification of No.29 Meditation instructor Course from Willpower Institute, Wat Tham Mongkol. Certification of No.13 teacher training from Willpower Institute , Wat Tham Mongkol. Intermediate Certificate Course of Political Leadership in the new era , King Prajadhipok's Institute Advanced Certificate Course in Promotion of a Peaceful Society. King Prajadhipok's Institute	-	2019-Present	Director	TPI Polene Plc.
			2008-Present	Director and Secretary	Mind Management Promotion Foundation under patriarchal patronage
			2008-Present	Director and Secretary	Paendin Dham Foundation under patriarchal patronage
			2010-Present	Director and Secretary	Novice promotion foundation under patriarchal patronage
			2013-Present	Vice Chairman	Rojana Dhamma Foundation
			2017-Present	Director	The National council on social welfare of Thailand
			2018-May,2019	Working Group	Ministry of Labor
			1982-Dec20,2019	Assistant secretary to the abbot of the Rama IX Kanchanaphisek Temple.	
			2013-Dec20,2019	Assistant secretary to Chiang Rai lord abbot of Buddhist monastery	
			2019	-Junior of Budget Commission	
				-Consultant of Junior of Religion Commission	
				-Consultant of Junior of labor commission senator	
			2018-May, 2019	Advisor of chairman	Rojana Industrial Park PCL.
				Director	Pathumwan Demonstration School
					Srinakarinwirot University (primary school)
					Pathumwan Demonstration School
Mr. Nitisit Jongphitakratana 51 years of age -no relationship	Master of Law, Thammasat University	-			Srinakarinwirot University (Secondary school)
				Monk teacher- morality course	Navaminthrachinuthit Bodidecha School.
				Monk teacher- morality course	Rama IX Kanchanaphisek School
				Monk teacher- morality course	Udomsuksa School
				Monk teacher- morality course	Kasetsart University laboratory school
				Special Lecturer	Fa Sai Wittaya School
Mr. Nitisit Jongphitakratana 51 years of age -no relationship	Master of Law, Thammasat University	-	2006-Present	Secretary	TPI Polene Plc.
			2011-Present	Asst.Vice President Department	TPI Polene Plc.
			2006-2011	Manager Department	TPI Polene Plc.

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
OTHER EXECUTIVES					
Mr. Prasert Ittimakin 61 years of age -no relationship	M.B.A. Finance University of St. Thomas, U.S.A.	0.00	2001-Present	Senior Vice President Account- ing and Finance Division	TPI Polene Plc.
	Bachelor of Accounting, Chulalongkorn University		1998-2001	Vice President Accounting and Finance Division	TPI Polene Plc.
			1990-1998	Vice President Corporate Finance Department	Asia Credit & Securities Plc.
Mr. Karan Pipitsombat 61 years of age -no relationship	Master of Public Administration (MPPM) NIDA	0.00	2006-Present	Senior Vice President (Plant Manager)	TPI Polene Plc.
	Bachelor of Engineering, Me- chanical, Chiang Mai University		2001-2006	Vice President (Asst. Plant Manager)	TPI Polene Plc.
Mr. Somkeart Srisuwan 62 years of age -no relationship	M.B.A. of Kasetsart	0.00	2012-Present	Senior Vice President Information Technology Division	TPI Polene Plc.
	Bachelor of Accounting, Chulalongkorn University		1999-2012	Senior Manager (SVP) Office of Procurement and Administration Division	CIMB THAI Bank
			1993-1999	Senior Manager (SVP) System Development Department Division	Krung Thai Thanakit Finance Co.,Ltd.
Miss Chularat Danwattanachai 59 years of age -no relationship	M.B.A. Thammasart University	-	2001-Present	Vice President Accounting and Finance Division	TPI Polene Plc.
			1999-2001	Asst.Vice President Accounting and Finance Division	TPI Polene Plc.
			1989-1998	Asst. Vice President Corporate Finance Department	Asia Credit & Securities Plc.
Mr. Pongsak Yiengsakun 66 years of age -no relationship	Bachelor of Business Administration Banking and Finance, Chulalongkorn University	-	2012-Present	Vice President Financial Operation Departmen	TPI Polene Plc.
			2001-2012	Asst.Vice President Financial Operation Department	TPI Polene Plc.
			1992-2001	Manager of Finance Department	TPI Polene Plc.
Mrs. Bussara Ketmanee 57 years of age -no relationship	Bachelor of Accounting, Ramkhamhaeng University	-	2018-Present	Asst.Vice President Accounting Department	TPI Polene Plc.
			2012-2018	Manager of Accounting Department	TPI Polene Plc.
			1987-1997	Manager of Accounting Department	Cathay Finance & Securities Plc.

Remarks: * Percentage of shareholding above includes shares held by spouses and offspring.

Attachment 2

Positions of the Management and Controlling Persons over the Company, its Subsidiaries, the Joint Venture Company, Associated Companies and other related Companies as at 31 December 2020.

Name	TPI Polene	The Affiliated Company 2/																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Mr.Prachai Leophairatana	//	//x	//x	//x	//x	//x	//x	//x	//	//x	-	//x	//x	//x	//x	//x	//x	//x	//x
2. Dr.Pramuan Leophairatana	//	//	//	//	//	//	//	//	//	//	//x	//	//	-	//	//	//	-	//
3. Mr.Prayad Liewphairatana	//	//	//	//	//	//	//	//	//	//	//	//	//	-	//	//	//	-	//
4. Mrs.Orapin Leophairatana	//	//	-	//	//	//	//	//	-	//	-	//	//	//	//	//	//	//	//
5. Mr.Manas Sooksmarn	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Mr.Pisej Iamsakulrat	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7. Mr.Thavich Taychanavakul	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8. Mr.Tayuth Sriyusiri	//	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9. Mr.Khantachai Vichakkhana	/x	-	-	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10. Miss Malinee Leophairatana	/	-	-	/	-	-	-	-	/	-	//	//	//	-	-	-	-	-	-
11. Mr.Supoj Singsane	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12. Mr.Pakorn Leophairatana	//	//	//	//	//	//	//	//	-	-	-	//	//	//	//	//	//	//	//
13. Mr.Pornpol Suwanamas	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Miss Tanyaratt Iamsopana	//	-	-	-	-	-	-	-	-	-	/	-	-	-	-	-	-	-	-

Note: 1. / = Director X = Chairman // = Executive Director
2. / = Names of the Companies

No.	The Affiliated Company	Status
1	TPI Concrete Co.,Ltd.	Subsidiary company
2	Thai Propoxide Co.,Ltd.	Subsidiary company
3	TPI Polene Power Plc.	Subsidiary company
4	TPI All Seasons Co.,Ltd.	Subsidiary company
5	Polene Plastic Co.,Ltd.	Subsidiary company
6	TPI Polene Bio Organics Co.,Ltd.	Subsidiary company
7	Thai Nitrate Co.,Ltd.	Subsidiary company
8	Thai Special Steel Plc.	Associated company
9	Mondo Thai Co.,Ltd.	Subsidiary company
10	Bangkok Union Life Insurance Public Co.,Ltd.	Associated company
11	United Grain Industry Co.,Ltd.	Associated company
12	Pornchai Enterprises Co.,Ltd.	Related company
13	TPI Commercial Co.,Ltd.	Subsidiary company
14	TPI Service Co.,Ltd.	Subsidiary company
15	TPI Healthcare Co.,Ltd.	Subsidiary company
16	TPI Refinery (1997) Co.,Ltd.	Subsidiary company
17	Master Achieve (Thailand) Co.,Ltd.	Subsidiary company
18	TPI Bio Pharmaceuticals Co.,Ltd.	Subsidiary company

The Board of Directors - TPI Concrete Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Dr. Pramuan Leophairatana	Director
3. Mr. Prayad Liewphairatana	Director
4. Mrs. Orapin Leophairatana	Director
5. Mr. Panya Tangsingtrong	Director
6. Mr. Pakorn Leopairut	Director

The Board of Directors - TPI Polene Power Plc. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Dr. Pramuan Leophairatana	Vice Chairman
3. Mrs. Orapin Leophairatana	Vice Chairman
4. Mr. Prayad Liewphairatana	Director
5. Mr. Pakorn Leopairut	Director
6. Miss Pattrapan Leopairut	Director
7. Mr. Pakapol Leopairut	Director
8. Miss Nitawan Leophairatana	Director
9. Mr. Manue Leohairoj	Director
10. Mr. Thiraphong Vikitset	Director
11. Mr. Apichai Chantarsaen	Director
12. Mr. Khantachai Vichakkhana	Director
13. Miss Malinee Leophairatana	Director
14. Mr. Wanchai Manosutthi	Director

The Board of Directors-TPI Polene Bio Organics Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Miss Pattrapan Leopairut	Director
7. Mr. Pakorn Leopairut	Director
8. Mr. Pakapol Leopairut	Director
9. Mrs. Achira Chatdarong	Director
10. Mrs. Nitawan Leophairatana	Director
11. Mr. Thanakorn Liewphairatana	Director
12. Miss Chutinan Liewphairatana	Director
13. Mr. Vipot Kotbua	Director
14. Mr. Pakpoom Thongsorn	Director

The Board of Directors - TPI All Seasons Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Mr. Panya Tangsingtrong	Director
7. Mr. Pakorn Leopairut	Director
8. Mrs. Nitawan Leophairatana	Director
9. Mrs. Achira Chatdarong	Director
10. Mr. Virat Chatdarong	Director
11. Mr. Porakrit Leophairatana	Director

The Board of Directors - Mondo Thai Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director

The Board of Directors - TPI Commercial Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mrs. Orapin Leophairatana	Director
3. Mr. Pakorn Leopairut	Director
4. Miss Pattrapan Leopairut	Director
5. Mr. Pakkapol Leopairut	Director
6. Mrs. Achira Chatdarong	Director
7. Mrs. Nitawan Leophairatana	Director
8. Mr. Thanakorn Liewphairatana	Director
9. Miss Chutinan Liewphairatana	Director
10. Mr. Prasert Ittimakin	Director
11. Mr. Vipot Kotbua	Director
12. Mr. Pakpoom Thongsorn	Director
13. Mr. Chairat Kittithorn	Director

The Board of Directors - TPI Service Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Mr. Pakorn Leopairut	Director
7. Mr. Pakkapol Leopairut	Director
8. Mrs. Achira Chatdarong	Director
9. Mrs. Nitawan Leophairatana	Director
10. Mr. Thanakorn Liewphairatana	Director

The Board of Directors - Thai Nitrate Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Dr. Pramuan Leophairatana	Director
3. Mr. Prayad Liewphairatana	Director
4. Mrs. Orapin Leophairatana	Director
5. Mr. Pakorn Leopairut	Director
6. Mr. Pakkapol Leopairut	Director

The Board of Directors - Master Achieve (Thailand) Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mrs. Orapin Leophairatana	Director
3. Mr. Pakorn Leopairut	Director
4. Mr. Pakkapol Leopairut	Director
5. Mrs. Achira Chatdarong	Director
6. Mrs. Nitawan Leophairatana	Director
7. Miss Pattraparn Leopairut	Director
8. Mr. Thanakorn Liewphairatana	Director
9. Miss Chutinan Liewphairatana	Director

The Board of Directors - TPI Bio Pharmaceuticals Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Miss Pattraparn Leopairut	Director
7. Mr. Pakorn Leopairut	Director
8. Mr. Pakkapol Leopairut	Director
9. Mr. Thanakorn Liewphairatana	Director
10. Miss Chutinan Liewphairatana	Director
11. Mr. Porakrit Leophairatana	Director

The Board of Directors - TPI Healthcare Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Miss Pattrapan Leopairut	Director
7. Mr. Pakorn Leopairut	Director
8. Mrs. Nitawan Leophairatana	Director
9. Mr. Pakkapol Leopairut	Director
10. Mr. Porakrit Leophairatana	Director

The Board of Directors - TPI Refinery (1997) Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Mr. Pakorn Leopairut	Director
7. Mrs. Nitawan Leophairatana	Director
8. Mr. Pakkapol Leopairut	Director
9. Mrs. Pannee Liewphairatana	Director
10. Mrs. Achira Chatdarong	Director
11. Mr. Thanakorn Liewphairatana	Director
12. Mr. Porakrit Leophairatana	Director

The Board of Directors - Thai Propoxide Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Miss Pattrapan Leopairut	Director
7. Mr. Pakorn Leopairut	Director
8. Mr. Pakkapol Leopairut	Director
9. Mr. Thanakorn Liewphairatana	Director
10. Miss Chutinan Liewphairatana	Director

The Board of Directors - Polene Plastic Co., Ltd. as at 31 December 2020

1. Mr. Prachai Leophairatana	Chairman
2. Mr. Prateep Leopairut	Director
3. Dr. Pramuan Leophairatana	Director
4. Mr. Prayad Liewphairatana	Director
5. Mrs. Orapin Leophairatana	Director
6. Miss Pattrapan Leopairut	Director
7. Mr. Pakorn Leopairut	Director
8. Mr. Pakkapol Leopairut	Director
9. Mr. Thanakorn Liewphairatana	Director
10. Miss Chutinan Liewphairatana	Director

Detail of Internal Audit Manager as at 31 December 2020

NAME/AGE/ FAMILY RELATION AMONG DIRECTORS & EXECUTIVES	EDUCATIONAL BACKGROUND/TRAINING	% SHARE HOLDING*	WORK EXPERIENCE		
			DURATION	POSITION	COMPANY/ BUSINESS
Mr. Somchai Kitpipit -no relationship	M.B.A. Business Law Ramkhamhaeng University	0.00	2006-Present	Asst. Vice President Internal Audit Department	TPI Polene Plc.
	Bachelor of Business Administration (Accounting), Ramkhamhaeng University Tax Auditor		1992-2006	Internal Audit Manager Internal Audit Department	Agro Industry business, Securities business, Petrochemical business, Cement business, Printing equipment business

Training about Internal Audit Manager

No.	TRAINING	DURATION	TRAINING COMPANY
1.	Personal Data Protection Act 2019	September 25, 2020	Personnel Department, TPIPL
2.	Land and building tax, Accounting for investment property and update new laws.	November 21-22, 2020	Kritsomboon Seminar and Training (approval of Federation of Accounting Professions and The Revenue Department)
3.	Going Concern, Financial instruments and update new laws.	November 23-24, 2019	Kritsomboon Seminar and Training (approval of Federation of Accounting Professions and The Revenue Department)
4.	Internal control and monitoring	May 29-30, 2019	Professional Internal Audit Service (PIAS)
5.	Performing an audit in accordance with auditing standards, presentation of financial statement and update new laws. Professions and The Revenue Department)	November 3-4, 2018	Kritsomboon Seminar and Training (approval of Federation of Accounting Professions and The Revenue Department)
6.	Transforming IA for the digital age	August 6, 2018	The Institute of Internal Auditors of Thailand

Social Responsibility

1. Overview of Policy

The Company Group has a policy to pursue its business operations under well-managed administration practices with an adherence to creating a corporate culture in good corporate governance in parallel with social conservation and environmental preservation. The Company also realizes the importance of educational support, public well-being and safety, art, cultural preservation and social development with an aim to respond the need of the people in the local community to further enhance the sustainable growth in all respects, which can be partly reported below.

11.1 Business Operation with Fairness

The company aims to conduct business according to the Corporate Governance Policy and Code of Conduct of the company (Please see details under Section 2.11 Corporate Governance -11.1 Corporate Governance Policy) and is determined to promote the firm to be an organization that does business with transparency, ethics, and responsibility for shareholders and stakeholders.

The Board of Directors is determined to conduct business according to good corporate governance, focusing on justice, transparency, fairness, responsibility for society, culture and the environment, together with building sustainable development for all staff, customers, the community, and all stakeholders under the management.

“Transparent Thailand where all citizens live happily”

The Company's Board of Directors specifies principles of Good Corporate Governance for the Board, Management, and all employees of the company to hold as follows:

- (1) Directors hold on to the principles of universal Corporate Governance and are determined to improve Good Corporate Governance continuously i.e. shareholders rights, equitable treatment of shareholders, shareholder roles, information disclosure and transparency, and responsibility of the Board.
- (2) Directors, Management and staff concentrate to apply the Principles of Corporate Governance i.e. Creation Shared Value, Responsibility, Equitable treatment, Accountability, Transparency, and Ethics (C.R.E.A.T.E.) to use as a guideline to conduct business and to strictly abide by laws and related regulations of invested countries.
- (3) Directors establish the management structure to treat Directors, Management and shareholders with fairness, and consider policy, vision, work plans and key strategies, and supervise and monitor business operations, and ensure appropriate risk management. They are independent and responsible for business operations to conform to Good Corporate Governance by being an ethical leader and a good example to follow the Corporate Governance and Code of Conduct as well as promote the culture of Corporate Governance. They are responsible for all related stakeholders and to promote human rights, consumer rights, and fair labor as well as to establish a system to follow up, evaluate, and review for all employees to practice Corporate Governance in a complete and sustainable manner.

In addition, the Company makes a written announcement of a Code of Conduct for all stakeholders with shared values principles between the Company and stakeholders whereas the top management is responsible for the participation of all stakeholders and improves communication channels to continuously allow for the expression of opinions to the responsible business units. The Company has a strict policy to treat all stakeholders fairly including shareholders, customers, employees, trade partners, competitors, community and society. The Management and employees put the Code of Conduct into practice, so they clearly understand how to fairly treat shareholders, trade partners, and customers, etc.

1.2 Anti-Corruption Policy

The Company is committed to pursuing its business operations with an emphasis on transparency with ethics and responsibility to shareholders, customers, employees, society and others stakeholders. The Directors, the Management and all levels of employees are prohibited from operating or accepting, soliciting, demanding, or accepting assets or other benefits to other persons in business dealing with the Company, whether directly or indirectly, as a motive for them to do or refrain from doing any act to acquire or keep benefits that are unsuitable to the business, except as allowed by the laws, rules, regulations, local customs or tradition, or business customs, to create the balanced consideration of all related parties and fair treatment to all parties concerned. The Company has conducted Anti-Corruption awareness as guideline policies for the management and employees of the group to perform in compliance with the principles of good corporate governance, Code of Conducts and/or related to the terms and regulations or any legal issues to create sustainable value and long-term growth of the business.

Objectives

1. All levels of employees must not induce to act or refrain from actions that may lead to malfeasance and corruption, by not being involved in corruption, whether directly or indirectly.
2. To support all levels of employees' roles and responsibilities to take part in the activities of Anti-Corruption Policy Corruption, not to solicit, demand, or accept assets or other benefits from other persons in business dealing with the Company,
1. To conduct its business with fairness and enhance the confidence to its stakeholders.

Scope of Anti-Corruption Policy

Stakeholders of the Company who are involved in Anti-Corruption Policy Corruption are classified into 2 major groups as follows:

1. **Internal :** Director, Management Team, and all level of staff/employees
2. **External:** Customer or suppliers, contractor's sub-contractors, business partners, creditors, governmental authorities and private officers.

Anti-Corruption Definition

Corruption means any types of bribery; an offering, agreement to give, giving, promising to give, soliciting, or receiving of money, asset, or other inappropriate benefits from the government officers, government sectors, private sectors, or responsible person either in direct or indirect action so that such person could proceed or disregard his/her function in order to acquire, retain the business, recommend a specific company to the entity, or achieve any improper benefits in the business transaction. Exceptions shall be applied in case of laws, regulations, statements, standards, customs, or business traditions.

Roles and Responsibilities

1. The Board of Directors is responsible for determining the policy, and monitoring, and forming an effective system supporting anti-corruption acts in order to affirm that the Management Team intensively concerns, emphasizes, and cultivates an anti-corruption mindset as part of the Company's culture.
2. Presidents and the Management are responsible for determining an anti-corruption system, promoting, and encouraging anti-corruption manners conveyed to all staff and related parties. This also includes reconsideration on systems or regulations in order to best adjust with business changes, regulation, standard, and laws.
3. The Audit Committee is responsible for the revision of financial and accounting reports, internal control, internal audit function, and risk management so that such operations are concise, appropriate, effective, and conform to global standards.
4. The Internal Audit Director is responsible for auditing, assessment, and evaluations in business transactions whether they are accurate and comply with guidelines, approval authority, standards, laws, and policies in such monitored departments in order to ensure that the internal controls are sufficient and suitable for probable risk in corruption. This shall be directly reported to the Audit Committee.

Anti-Corruption Guidelines

1. Staff shall not be negligent in any corruption conditions involved directly with the Company. All staff must notify such acts to supervisors or responsible persons provided in particular channels, including collaborate with the fact-finding investigations.
2. A person who is involved in corruption is considered to have committed a disciplinary offense. This means such person needs to be considered for disciplinary action according to the Company's standards. Legal conviction may be applied in case such acts violate the laws.
3. The Company shall provide fairness and safeguard staff who inform Management of corruption cases relating to anti-corruption information.
4. The Company is concerned about the importance of dissemination, knowledge sharing, and constant communication with employees.
5. The Internal Audit Department of the Company will be responsible for reviewing and evaluating internal control systems, disclosure of Company information, and to review implementation of the provisions and risk management systems that can mitigate risks against corruption and report directly to the Audit Committee.

Provision in Implementation

Implementation of Anti-Corruption Policy (to interact properly with business partners and the related parties who have conflicts of interest)

All levels of employees will be responsible for the anti-corruption policy in connection with customers, suppliers and all parties concerned. (Hereafter called "related parties who have conflicts of interest" who have a direct impact on business operations)

1. The employees must comply with the anti-corruption policy and measures, the Company's corporate governance principles and code of business conduct and hospitality activities from other persons in business dealing with the Company.
2. The employees must not accept gifts, entertainment and hospitality offerings, gifts or entertainment and hospitality activities from other persons in business dealing with the Company, whether directly or indirectly.
3. Employees must not be corrupt or accept corruption in any form in any circumstance, covering the business without otherwise getting prior approval from the direct supervisors. Any acceptance thereof as above from other persons must comply with the Anti-Corruption policy and measures, the Company's corporate governance principles and code of business conduct and must not have any impact in business decision of such employee.
4. Employees must not perform any act to acquire or keep benefits from their positions in the Company or to accept gifts, entertainment and hospitality offerings, gifts or entertainment and hospitality activities from other persons in business dealing with the Company.
5. Whenever the employees advise the personnel to the Company, those actions must not go against the benefits and/or recruitment of the Company or refrain from doing any act to acquire or keep benefits that are against related laws and regulations.
6. There are no close relationships between supervisors and those under their supervision within the same departments such as: married couples, parents or offspring, that may impose conflicts of interest.
7. Business relations and procurement process with the public sector or all types of bribery or illegal payments are prohibited in all business transactions, operations, and connections to the government.
8. Corrupt persons who violate or fail to comply with the anti-corruption measures must face punishment under the Company's rules and may also face prosecution if the action violates the law.
9. Employees must be granted an approval from their supervisors before offering all types of gifts (such as the Company's products) or entertainment and hospitality activities to other persons covering the business to be in compliance with the anti-corruption policy and measures, the Company's corporate governance principles and code of business conduct. In case of emergency that in any circumstances, it has not been granted approval from their supervisors in advance, such employees are deemed to get an approval from their supervisors whatsoever after offering all types of gifts (such as the Company's products) or all forms in any circumstances, to other persons covering the business.
10. The employees must not acquire or take benefits from their position in the Company to engage in inappropriate relationships, sexual harassment and other verbal or physical harassment of a sexual nature, any kinds of treatment or consideration of, or making a distinction in favor of or against (such discrimination based on race, sex, disabilities or religious). This also includes burglary, threats, force or any other kind of the action that violates the law.
11. Employees should ask or use request forms to get opinions from their supervisors or responsible persons when the employees face or doubt any act that is considered corruption in order to avoid any argument.

File complaints or reports of fraud

1. Complaints or recommendations

- 1.1 A complaint if encountering any acts that are considered corruption, direct or indirect.
- 1.2 Any act that is considered corruption and/or have a direct effect on the internal control of the Company cooperate in the fact-finding investigation stipulated by the Company's regulations.
- 1.3 Any act that has a direct impact on the Company's reputation and benefits.
- 1.4 Any misconduct that is against the law, morals and/or business ethics.

2. Suitable report channel to file a complaint

When they face or doubt any act that might be considered corruption, employees have a responsibility to notify supervisors or responsible persons or through suitable report channels.

3. Channels of Communication between the Company and its Employees (Internal complaint)

1. Head of the Internal Control Department/ Head of the Human Resources Department or Head of Legal Department.
2. Mail Box
3. E-Mail : orapinr@tpipolene.co.th

4. Channels of Communication between the Company and outsiders (External complaints)

1. Letters : Mrs. Orapin Leophairatana
Senior Executive Vice President
TPI Polene Power Public Company Limited
26/56 Chan Tat Mai Road, Thungmahamek,
Sathorn, Bangkok 10120
2. E-Mail : orapinr@tpipolene.co.th
3. Letters : The Audit Committee
TPI Polene Public Company Limited
26/56 Chan Tat Mai Road, Thungmahamek,
Sathorn, Bangkok 10120
4. Tel. no. 02-285-5090 or 02-213-1039 Internal Audit Department

Identities and confidentiality protected

1. Identities protected

As the whistleblower or the person filing the grievance in good faith is greatly beneficial to the Company and all employees, therefore, the whistleblower or the person subject to such grievance and parties involving in the fact-finding and reporting process, no matter what difficulties they might have, the Company will ensure that no employees shall be demoted, penalized or be otherwise affected because they honestly decline to participate in corruption.

The Company has a policy to investigate such reports with equal transparency, care and fairness and subject them to a proper investigation; information will be kept confidential and only be revealed when necessary while we will take into consideration the safety and damage of the whistleblower or the person filing the grievance, which will be carried out in a confidential manner to ensure staff who make the reports will have their identities protected.

2. Names and Confidentiality Protected

The whistleblower or the person filing the grievance (various groups of stakeholders or employee) may choose not to reveal his/her name, address or contact number unless he/she feels that such a disclosure will enable the Company to inform him/her of progress. Information will be kept confidential and only be revealed when necessary while we will take into consideration safety and damage of the whistleblower or the person filing grievance. The Company will hear all such reports with equity, transparency, care and fairness and subject them to a proper investigation, which will be carried out in a confidential manner to ensure the staff member who makes the reports will have their identities protected with fair treatment.

Fact-finding process and Penalty

1. Having received the grievance, the Management Representatives, whose members consist of the Compliance Unit and the Audit Committee, will be responsible to conduct an investigation.
2. Under the fact-finding process, the Management Representatives and the Audit Committee might assign Management Representatives to keep them informed of the progress of further investigation.
3. In case tips or the grievance are found to contain materiality, the person committing corruption or violating or failing to comply with the anti-corruption measures will be notified. The Company will grant opportunities for the persons committing corruption or proved to be guilty to acknowledge the reasons and reserve the right for them to prove themselves by providing additional information or evidence that they aren't involved in any corruption or are guilty of violating or failing to comply with the anti-corruption measures as accused.
4. In case the person who has committed corruption or violating or failing to comply with the anti-corruption measures, are proven to be guilty, the Company will take actions in accordance with the established procedures to investigate and levy disciplinary punishment on employees at fault, relating to corruption matters. Such person will be considered for discipline according to the Company's standards. Legal conviction may be applied in case such an act violates the laws. The Management's decision is considered the final judgment for punishment on employees at fault, relating to corruption matters.

Disclosure of the Anti-Corruption Policy

1. The Company announces the written publication of the anti-corruption policy and measurements as a principal guideline for employees to follow.
2. The Company discloses the written publication of the anti-corruption policy and measures through the Company's channels, such as letters, the Company's website and annual report, etc.
3. The anti-corruption policy needs to be reviewed regularly, including with a possible revision of such policy and implementation provision in order to be in accordance with business changes, regulations, standards, and laws.

1.3 Respecting Human Rights

The company realizes that the community and the environment are susceptible to its activities and business conduct; hence, the Board, the Management, and all employees must respect the law, customs, traditions and local cultures where the company is conducting business. The Company consequently set the following guidelines:

- (1) Employees must treat any person in the areas of the establishment with respect, on the basis of human dignity, justice and respect for each other. They also comply with all applicable laws in the country.
- (2) The Company promotes diversity in employment and provides opportunities to grow and advance in career path without discrimination in favor or against any person, race, nationality, religion, country, education, age, sex, status, disability, and so on.
- (3) Employees must carefully handle stakeholder information.
- (4) Employees will not disclose confidential information of stakeholders to unauthorized persons, except for the written consent of the stakeholder or the authorized person of the company.
- (5) Employees must limit disclosure, use and access of stakeholder information as necessary.
- (6) Prohibiting employees from harassing or causing sexual nuisances in the workplace.

In addition, the operation and management of the security of the Company's area must comply with voluntary compliance with security and human rights principles.

1.4 Fair Labor Practices

The Company values its employees, focusing on all employees to progress, to have welfare and security, to develop their potential, and to be safe to work. To treat employees fairly, the guidelines are as follows:

- (1) The company has plans and training courses to teach the job to be done or relevant issues for employees to understand and to work properly, safely and suitably with the employees in each job position.
- (2) The Company organizes training for knowledge development, competitive advantage of its employees to support its growth and the progress of the employees
- (3) The company encourages the transfer of knowledge, teaching, and work learning among employees.
- (4) The Company provides opportunities and support for employee education, and training to increase knowledge both inside and outside the organization following proper job description.
- (5) The Company has clear and strict employment regulations, including progress in the job with no restriction on gender, age, social status, race, ethnic, religious, educational institutions. The employment policies and working conditions are based on the needs of the job.
- (6) The company will not employ migrant workers including contractors and subcontractors.
- (7) The Company provides a channel for listening to employees' feedback and suggestions.
- (8) The Company provides benefits and welfare, equivalent to other companies in the same industry.
- (9) The Company creates a good working environment and a safe place to work.

1.5 Consumer Responsibility

The Company is committed to providing customers or consumers who buy products and services from the Company benefits and satisfaction with the product by producing fair-priced, good quality products which show responsibility to customers and consumers. It needs to serve customers and consumers quickly and without discrimination. It also maintains sustainable relationships with customers and consumers. The guidelines are as follows.

- (1) To develop quality products and give full service by continuously delivering goods and services quickly to meet the needs of customers and consumers. The employees must also be fully dedicated to meeting customer needs with reasonable prices and without restrictions on consumer rights.

- (2) Not to commit any fraud or deception in the quality of the company's product and services by producing products and services that are safe, reliable and non-hazardous to the health of consumers. The warning signs and documentation must be specified in accordance with international quality management standard systems.
- (3) To store customer data in a secure system and not to disclose customers' data illegally and specify the fair price of the products and services.
- (4) To provide an agency responsible for providing adequate recommendation knowledge and understanding of products and services including counseling and offering solution. We also receive complaints in order to maximize customer satisfaction in products and services.

1.6 Environmental protection

The main business of the Company is the production and distribution of electricity and service stations for fuel and natural gas (NGV). It focuses on power plants that use waste heat and RDF fuels. Most of businesses are eco-friendly.

1.7 Community or social development

Commitment to social and community development, promoting quality of life, and maintaining the environment so that the industry can live in harmony with society and the community, are what the Company, as a company of Thai people, values along with its business operations. The Company has focused on developing sustainable practices in various areas.

1.8 Innovative use and dissemination of innovations that are socially and environmentally responsible.

The Company is focused on innovation through the maximization of resources. The Company is focused on generating electricity from waste heat and RDF which uses waste as raw material for production. The use of alternative energy reduces carbon dioxide (CO₂) emissions into the atmosphere; thus, it is deemed an environmental-friendly innovation. The Company has publicized this principle to the community and people to learn and understand the Company's operations on various occasions.

In addition, RDF is produced from waste which is derived from local communities and factories. The Company's business is an innovative business to recycle waste and also helps the community reduce waste, which is a national problem. It also helps reduce waste disposal processes of other public and private sectors organizations, which saves energy indirectly, in accordance with the Company's philosophy to create balance between business growth and environmental protection, and to create a strong Thai society and to be a driving force for the Thai economy and Thai society.

2. Implementation and Reporting (CSR in Process)

The Company Group has a clear policy on CSR and is committed to working on such a policy to ensure that it helps create a quality society and environment. The company policy has been implemented for the benefit of the community and society as follows:

- (1) The Company is committed to implementing the guidelines of "Zero Waste" and has consistently followed this policy by regulating, supervising, and developing processes to ensure that the rate of waste emissions from operations is below the highest level allowed by the law. Also the Company reuses the waste heat from the cement production process to produce electricity power.
- (2) The Company is focusing on ways to reduce carbon dioxide (CO₂) emissions into the atmosphere, which cause greenhouse effects for the community. As a result, the Company has focused on operating the RDF power plant.
- (3) The Company is committed to reducing community waste by utilizing community waste for alternative RDF projects. The use of such alternative fuels to generate electricity helps community waste management and reduces the quantity of the waste and the space for garbage collection.
- (4) The Company continues to use the waste monitoring system to monitor the emission of waste from the combustion process of the power plant and keeps track of and controls the oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) in each combustion process. And it controls the temperature and fuel-to-air ratio during the combustion process to maintain the level of waste discharge to the level required by law.
- (5) The Company shall cooperate and comply with the regulations, laws and other requirements related to the environment.

3. Businesses that affect social responsibility

- None -

4. Additional Guidelines on Prevention of Corruption Involvement

The Company Group has a policy against corruption. The Company focuses on promoting morality, ethics, transparency in business operations according to the business ethics of the Company. It also operates a business using a management system that is efficient, transparent, and auditable. In addition, the Company encourages its personnel at all levels not to deal with corruption directly and indirectly and to participate in preventing and combating corrupted practices related to the Company's business.

The Company Group has a policy regarding gifts and other benefits from/to the person or company that conducts business with the Company. To avoid any conflict of interest, the employees of the company must not accept or claim, directly or indirectly, any gifts or bribes, special remuneration or incentives that are valued by outsiders who are involved in business. And if any employees need to do that, one must receive approval by the direct supervisor before. The receipt of such gift must comply with the rules, business practices or business etiquette and it must have no influence on business decisions of employees.

In addition, the Company Group has a policy that does not allow or encourage unlawful payments or bribe a government agency. It also provides a way to clearly report clues or complaints when people see the wrong action. The investigation and penalties are set out in the Company's Anti-Corruption Policy.

Report of the Board of Directors' Responsibilities for Financial Statements

The Board of Directors of the Company are aware of their duties and responsibilities to ensure that the financial reports of the Company and its subsidiaries are accurate, complete, and transparent, and are prepared in compliance with generally accepted accounting principles and reflect the application of an appropriate and consistent accounting policy. Such reports must be prepared prudently and on a reasonable basis and must reflect the Company's financial position and operational performance fairly and precisely for the benefit of shareholders and general investors.

In this regard, the Board of Directors have entrusted an Independent Audit Committee to be responsible for the review of accounting policy and financial reports, internal controls, internal audit and risk management systems. Comments on these issues have been included in the Audit Committee Report, which thereby forms a part of this Annual Report.

The Board of Directors are of the opinion that the overall internal control systems of the Company and its subsidiaries have functioned satisfactorily and credibly to ensure that the financial statements of the Company and its subsidiaries present financial positions, operational results and financial cash flow which are accurate and reliable in all material aspects.

Sincerely Yours,



Mr. Khantchai Vichakkana
Chairman of the Board



Mr. Prachai Leopairatana
Chief Executive Officer

Independent Auditor's Report

To the Shareholders of TPI Polene Public Company Limited

Opinion

I have audited the consolidated and separate financial statements of TPI Polene Public Company Limited and its subsidiaries (the "Group") and of TPI Polene Public Company Limited (the "Company"), respectively, which comprise the consolidated and separate statements of financial position as at 31 December 2020, and the consolidated and separate statements of 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 2020 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 requirements of 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 judgment, 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.

Valuation of inventory	
Refer to Note 4 and 8 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>Inventory is a significant balance. There is slow moving in some type of inventory. There is a risk arising from the degree of judgment involved in assessing the net realisable value which is based on assumptions concerning future events and activities.</p> <p>Due to the high level of management's judgment and the significant carrying amounts involved, this is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none">• understanding the Group's business plan and process on estimate the net realisable value derived from business plan;• considering the management's significant assumptions used in their assessment of the net realisable value of inventory, which included comparing them to internally and externally derived data;• assessing the appropriateness of the methodology used to calculate the net realisable value at year end, considering the reasonableness of selling price used by comparing to the selling price during subsequent sales and assessing the accuracy of the calculation; and• evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards.

<i>Impairment assessment of property, plant and equipment in consolidated financial statements and loan to and investment in subsidiaries in separate financial statements</i>	
Refer to Note 6 and 14 to financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>The continuous loss in operation of two subsidiaries; TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. indicated that property, plant and equipment and loan to may be impaired.</p> <p>Since the consideration of impairment of assets depend on the management's judgments and assumptions in respect to the forecast of operating results, discount rate, economic conditions and key assumptions used to estimate the recoverable amount of aforementioned business, this is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> • understanding the management's process of identifying impairment indicator, defining significant increase in credit risk and impairment testing, estimate recoverable amount and expected credit loss; • evaluating key assumptions used in discounted future cash flows such as growth rate, future outcomes, and economic conditions used to measure the credit loss and considering the reasonableness of forecasts by comparing historical estimation with the actual results as well as assessing the appropriateness of discount rate used; • evaluating credit risk and considering the reasonableness of supporting information; • assessing the accuracy of the calculation; and • evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards.

<i>Recognition of deferred tax assets</i>	
Refer to Note 4 and 31 to the financial statements.	
The key audit matter	How the matter was addressed in the audit
<p>The Group has recognised deferred tax assets for unused tax losses that it believes are recoverable.</p> <p>The recoverability of recognised deferred tax assets is in part dependent on the Group's ability to generate future taxable profits sufficient to utilise tax losses (before the latter expire).</p> <p>Due to the inherent uncertainty in forecasting the amount and timing of future taxable profits, this is one of the key judgmental areas that my audit is concentrated on.</p>	<p>My audit procedures in this area included, among others:</p> <ul style="list-style-type: none"> • understanding the method of the management's recognition of deferred tax assets and the assessment of assumptions used in projecting the Group's future taxable profits; • considering the reasonableness of the forecast of future taxable profits by comparing the past forecast to the actual operating results and the operation plans and evaluating assumption used by management by comparing to operation plan and external information; • assessing the accuracy of the calculation; and • evaluating the adequacy of disclosure in accordance with the related Thai Financial Reporting Standards.

Emphasis of Matter

Without modifying my opinion, I draw attention to the following matters:

- (a) I draw attention to note 3(C) to the financial statements describing the effect of the Company's changes in accounting policy for investments in subsidiaries and associates in separate financial statements. The corresponding figures presented are based on the audited financial statements as at and for the year ended 31 December 2019 after making the adjustments described in note 3(C).
- (b) I draw attention to notes 38(2) and 38(4) to 38(7) to the financial statements, which described the uncertainty related to the outcome of lawsuits filed against the Company in relation to its operation of mining. The Civil Court issued a judgement as follows:
 - 1) On 2 August 2019, the Civil Court had an order on the Black Case No. SorWor.5/2559, engaging the mining activity unlawfully (engaging in the mining restricted area), that the Company has to return the limestone for cement industry back to the area where the mining activity was done and restore the area into its previous condition or pay the compensation of Baht 1,603 million with interest at 7.5 percent per annum from the date of being notified of the land survey result until the date that payment is made in full. The Company filed the appeal together with a delay of judgement execution on 3 December

2019. The case is pending the consideration of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order was set to be on 22 September 2020, however, the said date of hearing of judgement had been postponed because the case is under mediation during the appeal.

- 2) On 13 December 2019, the Civil Court had an order on the Black Case No. SorWor.4/2559, the Black Case No. SorWor.6/2559 and the Black Case No. SorWor.1/2560, engaging the limestone and shale mining activity in the area outside its concession area and engaging the mining activity unlawfully, that the Company has to return the limestone and shale for cement industry back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation of Baht 4,688 million with interest at 7.5 percent per annum from the discovery date of the unlawful of mining activity or the date of violation of mining until the date that payment is made in full. The Company filed the appeal together with a delay of judgement execution on the Black Case No. SorWor.4/2559 and the Black Case No. SorWor.6/2559 on 8 May 2020. For the Black Case No. SorWor.1/2560, the Company filed the appeal together with a delay of judgement execution on 5 June 2020. The date of hearing the Court of Appeal's judgement or order was set to be on 27 April 2021. All cases are pending the considering of the Court of Appeal.
- 3) On 24 March 2020, the Civil Court had an order on the Black Case No. SorWor.2/2561, conducting the shale mining unlawfully in the area which has not been granted, that the Company has to return the shale back to the original area where the Company conducted the shale mining unlawfully and restore the area into its previous condition or pay the compensation consisting of the value of the shale and royalty fee in the amount of Baht 67 million with interest at 7.5 percent per annum from the date of violation until the date that payment is made in full. The Company filed the appeal together with a delay of judgement execution on 19 August 2020. The case is pending the considering of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order was set to be on 20 May 2021.

The Company has an opinion that the outcome of lawsuit is not yet final and uncertain, the Company has not recorded the provision for liability of lawsuit.

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 judgment 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.



(Bunyarit Thanormcharoen)
Certified Public Accountant
Registration No. 7900

KPMG Phoomchai Audit Ltd.
Bangkok
19 February 2021

Statement of financial position

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

(in thousand Baht)

Assets	Note	Consolidated financial statements		Separate financial statements		
		31 December 2020	31 December 2019	31 December 2020	31 December 2019 (Restated)	1 January 2019 (Restated)
Current assets						
Cash and cash equivalents	7	6,657,879	2,743,845	2,034,928	962,604	2,178,247
Trade accounts receivable	6, 35	4,675,711	4,472,456	6,237,977	4,093,572	3,939,913
Other receivables		853,591	879,898	575,380	622,515	499,845
Short-term loans to related parties	6	-	-	478,014	478,396	268,801
Receivables and advances to related parties	6	60,240	79,070	254,442	262,886	238,262
Inventories	8	11,112,402	14,178,058	8,543,237	11,715,704	12,292,063
Other current financial assets	35	3,448,590	2,650,696	1,702,353	-	300,000
Other current assets		486,494	373,504	199,586	149,821	147,952
Total current assets		27,294,907	25,377,527	20,025,917	18,285,498	19,865,083
Non-current assets						
Other non-current financial assets	35	34,979	34,970	18,400	18,351	35,440
Investments in associates	9	805,101	752,558	805,101	752,558	772,197
Investments in subsidiaries	10	-	-	24,911,629	24,591,555	23,469,055
Long-term investments in related parties	6, 12	45,653	45,653	45,653	45,653	45,870
Receivables and advances to related parties	6	-	-	421,076	420,945	420,750
Investment properties	13	506,269	372,750	74,044	74,044	74,044
Property, plant and equipment	14	92,924,990	86,252,301	53,522,755	50,390,531	50,060,551
Right-of-use assets	3, 15	619,236	-	324,990	-	-
Intangible assets	16	501,665	136,550	493,649	136,550	176,170
Advances payment for plant and equipment		93,552	438,713	34,757	268,075	299,215
Deferred tax assets	31	913,788	671,853	688,308	506,621	347,845
Other non-current assets	6	168,762	285,270	127,583	213,768	196,176
Total non-current assets		96,613,995	88,990,618	81,467,945	77,418,651	75,897,313
Total assets		123,908,902	114,368,145	101,493,862	95,704,149	95,762,396

The accompanying notes form an integral part of the financial statements.

Statement of financial position

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

(in thousand Baht)

Liabilities and equity	Note	Consolidated financial statements		Separate financial statements		
		31 December 2020	31 December 2019	31 December 2020	31 December 2019 (Restated)	1 January 2019 (Restated)
Current liabilities						
Short-term loans from financial institutions	17, 35	1,314,807	2,939,529	1,075,182	2,607,863	1,685,614
Trade accounts payable	6, 18	2,877,681	2,535,610	2,453,991	2,307,482	2,910,219
Other payables	19	2,880,830	3,734,776	1,748,956	1,802,895	1,774,191
Short-term loans from related parties	6	-	-	-	-	44,217
Payables and advances from related parties	6	39,271	9,827	936,231	581,604	264,086
Current portion of long-term loans						
from financial institutions	17, 35	1,607,914	1,605,033	1,607,914	1,605,033	1,576,515
Current portion of lease liabilities						
(2019: Current portion of finance lease liabilities)	3, 15, 17, 35	132,369	-	83,553	-	775
Current portion of debentures	17, 35	17,180,000	7,205,000	13,180,000	7,205,000	7,750,000
Interest payable		348,777	313,840	298,235	281,416	253,363
Current income tax payable		85,178	62,373	-	-	-
Other current liabilities		251,469	254,596	100,499	97,370	69,704
Total current liabilities		26,718,296	18,660,584	21,484,561	16,488,663	16,328,684
Non-current liabilities						
Long-term loans from financial institutions	17, 35	1,380,711	2,984,304	1,380,711	2,984,304	6,235,392
Lease liabilities	3, 15, 17, 35	323,626	-	120,815	-	-
(2019: Finance lease liabilities)						
Debentures	17, 35	40,506,200	38,495,000	32,744,200	30,675,000	28,250,000
Deferred tax liabilities	31	50,994	59,578	-	-	-
Non-current provisions for employee benefit	20	2,326,482	2,337,557	1,956,682	1,970,539	1,298,077
Other non-current liabilities		430,856	337,676	252,945	168,531	168,531
Total non-current liabilities		45,018,869	44,214,115	36,455,353	35,798,374	35,952,000
Total liabilities		71,737,165	62,874,699	57,939,914	52,287,037	52,280,684

The accompanying notes form an integral part of the financial statements.

Statement of financial position

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

Liabilities and equity	Note	Consolidated financial statements		Separate financial statements	
		31 December 2020	31 December 2019	31 December 2020	31 December 2019 (Restated)
					1 January 2019 (Restated)
Equity					
Share capital:	21				
Authorised share capital (23,805,500 thousand ordinary shares, par value at Baht 1 per share)		<u>23,805,500</u>	<u>23,805,500</u>	<u>23,805,500</u>	<u>23,805,500</u>
Issued and paid-up share capital (19,180,500 thousand ordinary shares, par value at Baht 1 per share)		19,180,500	19,180,500	19,180,500	20,190,000
Share premium:					
Share premium on ordinary shares		60,600	60,600	60,600	60,600
Other surpluses		9,840,436	9,840,436	9,840,436	9,840,436
Share premium on treasury shares	22	135,058	35,218	135,058	35,218
Retained earnings					
Appropriated					
Legal reserve	23	925,766	850,858	925,766	850,858
Treasury shares reserve	22	259,637	-	259,637	-
Unappropriated		13,307,213	13,341,336	13,307,213	13,341,336
Treasury shares	22	(259,637)	-	(259,637)	-
Other components of equity		<u>104,375</u>	<u>108,164</u>	<u>104,375</u>	<u>108,164</u>
Equity attributable to owners of the parent		43,553,948	43,417,112	43,553,948	43,417,112
Non-controlling interests	11	<u>8,617,789</u>	<u>8,076,334</u>	<u>-</u>	<u>-</u>
Total equity		52,171,737	51,493,446	43,553,948	43,417,112
Total liabilities and equity		123,908,902	114,368,145	101,493,862	95,762,396

The accompanying notes form an integral part of the financial statements.

Statement of comprehensive income

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

		Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
	Note	2020	2019	2020	2019 (Restated)
Income					
Revenue from sale of goods	24, 32	34,275,770	37,040,563	23,252,776	26,901,561
Cost of sales of goods	8	(24,937,101)	(28,404,067)	(20,197,351)	(24,312,664)
Gross profit		9,338,669	8,636,496	3,055,425	2,588,897
Transportation income		1,113,565	1,166,524	1,175,558	1,216,592
Net foreign exchange gain		-	404,780	-	337,228
Investment income		59,151	106,125	69,280	60,128
Other income	25	738,177	550,482	650,345	699,817
Profit before expenses		11,249,562	10,864,407	4,950,608	4,902,662
Cost of distributions and transportations	26	(3,164,115)	(4,032,386)	(2,801,669)	(3,589,241)
Administrative expenses	27	(1,748,261)	(2,111,251)	(1,080,343)	(1,398,435)
Impairment loss of assets	14	(1,601,820)	-	-	-
Net foreign exchange loss		(11,943)	-	(29,655)	-
Total expenses		(6,526,139)	(6,143,637)	(3,911,667)	(4,987,676)
Profit from operating activities		4,723,423	4,720,770	1,038,941	(85,014)
Finance costs	30	(2,014,903)	(1,959,023)	(1,750,581)	(1,797,714)
Share of profit of subsidiaries accounted for using equity method	10	-	-	1,971,783	3,128,976
Share of profit (loss) of associates accounted for using equity method	9	56,321	(18,704)	56,321	(18,704)
Profit before income tax expense		2,764,841	2,743,043	1,316,464	1,227,544
Tax income	31	74,325	21,528	181,688	165,981
Profit for the year		2,839,166	2,764,571	1,498,152	1,393,525

The accompanying notes form an integral part of the financial statements.

Statement of comprehensive income

TPI Polene Public Company Limited and its Subsidiaries

	Note	Consolidated financial statements		Separate financial statements	
		Year ended 31 December		Year ended 31 December	
		2020	2019	2020	2019 (Restated)
Other comprehensive income (expense)					
<i>Items that will be reclassified subsequently to profit or loss</i>					
Exchange differences on translating financial statements		(18)	(250)	-	-
Gain (loss) on measurement of financial assets	35	6	(111)	-	(126)
Share of other comprehensive income (expense)					
of subsidiaries accounted for using equity method	10	-	-	(13)	(237)
Share of other comprehensive income (expense) of					
associates accounted for using equity method	9	(3,778)	(935)	(3,778)	(935)
Income tax relating to items that will be reclassified	31	-	25	-	25
Total items that will be reclassified subsequently to profit or loss		(3,790)	(1,271)	(3,791)	(1,273)
<i>Items that will not be reclassified to profit or loss</i>					
Gain on investments in equity instruments designated at fair value through other comprehensive income (expense)	35	3	-	3	-
Share of other comprehensive income (expense) of					
subsidiaries accounted for using equity method	10	-	-	-	(30,608)
Losses on remeasurements of defined benefit plans	20	-	(245,792)	-	(207,436)
Income tax relating to items that will not be reclassified	31	(1)	49,235	(1)	41,487
Total items that will not be reclassified to profit or loss		2	(196,557)	2	(196,557)
Other comprehensive income (expense) for the year, net of tax		(3,788)	(197,828)	(3,789)	(197,830)
Total comprehensive income for the year		2,835,378	2,566,743	1,494,363	1,195,695
Profit (loss) attributable to:					
Owners of the parent		1,498,152	1,393,525	1,498,152	1,393,525
Non-controlling interests		1,341,014	1,371,046	-	-
Profit for the year		2,839,166	2,764,571	1,498,152	1,393,525
Total comprehensive income (expense) attributable to:					
Owners of the parent		1,494,363	1,195,695	1,494,363	1,195,695
Non-controlling interests		1,341,015	1,371,048	-	-
Total comprehensive income for the year		2,835,378	2,566,743	1,494,363	1,195,695
Basic earnings per share (in Baht)	33	0.079	0.073	0.079	0.073

The accompanying notes form an integral part of the financial statements.

Statement of change in equity
TPI Polene Public Company Limited and its Subsidiaries

Consolidated financial statements														(in thousand Baht)	
Note	Other surpluses (deficits)			Retained earnings				Other components of equity					Equity attributable to owners of the parent	Non-controlling interests	Total equity
	Issued and paid-up share capital	Share premium on ordinary share	Share holding changes in Group	Share premium on treasury share	Legal reserve	Treasury Share reserve	Treasury Share	Translation reserve	Fair value reserve	Share of other comprehensive income (expense) of associates using equity method	Total other components of equity				
Year ended 31 December 2019															
	20,190,000	60,600	9,840,436	35,218	836,921	1,682,625	12,409,100	(1,682,625)	92	(7)	109,352	109,437	43,481,712	7,454,877	50,936,589
Transactions with owners, recorded directly in equity															
Contributions by and distributions to owners of the parent															
22	-	-	-	-	-	301,270	(301,270)	(301,270)	-	-	-	-	(301,270)	-	(301,270)
22	(1,009,500)	-	-	-	-	(1,983,895)	1,009,500	1,983,895	-	-	-	-	-	-	-
34	-	-	-	-	-	-	(959,025)	-	-	-	-	-	(959,025)	(749,591)	(1,708,616)
Total transaction with owners, recorded directly in equity															
	(1,009,500)	-	-	-	-	(1,682,625)	(250,795)	1,682,625	-	-	-	-	(1,260,295)	(749,591)	(2,009,886)
Comprehensive income (expense) for the year															
Profit	-	-	-	-	-	-	1,393,525	-	-	-	-	-	1,393,525	1,371,046	2,764,571
Other comprehensive income (expense)	-	-	-	-	-	-	(196,557)	-	(250)	(88)	(935)	(1,273)	(97,830)	2	(197,828)
Total comprehensive income (expense) for the year															
	-	-	-	-	-	-	1,196,968	-	(250)	(88)	(935)	(1,273)	1,195,695	1,371,048	2,566,743
23	-	-	-	-	13,937	-	(13,937)	-	-	-	-	-	-	-	-
Balance at 31 December 2019															
	19,180,500	60,600	9,840,436	35,218	850,858	-	13,341,336	-	(158)	(95)	108,417	108,164	43,417,112	8,076,334	51,493,446

The accompanying notes form an integral part of the financial statements.

Statement of change in equity

TPI Polene Public Company Limited and its Subsidiaries

Consolidated financial statements

(in thousand Baht)

(in thousand Bahr)																
		Other surpluses (deficits)			Retained earnings			Other components of equity				Equity attributable to owners of the parent	Non-controlling interests	Total equity		
	Note	Issued and paid-up share capital	Share premium on ordinary share	Shareholding changes in Group	Share premium on treasury share	Legal reserve	Treasury Share reserve	Unappropriated	Treasury Share	Translation reserve	Fair value reserve	Share of other comprehensive income (expense) of associates using equity method	Total other components of equity			
Year ended 31 December 2020																
Balance at 31 December 2019 -as reported																
	3/4)	19,180,500	60,600	9,840,436	35,218	850,858	-	13,341,336 (60,040)	-	(158)	(95)	108,417	108,164	43,417,112 (60,040)	8,076,334	51,483,446
Impact of changes in accounting policies																
Balance at 1 January 2020																
		19,180,500	60,600	9,840,436	35,218	850,858	-	13,281,296	-	(158)	(95)	108,417	108,164	43,357,072	8,076,334	51,433,406
Transactions with owners, recorded directly in equity																
Contributions by and distributions to owners of the parent																
	22	-	-	-	-	-	453,531 (259,637)	(453,531)	(453,531)	-	-	-	-	(259,637)	-	(259,637)
	22	-	-	-	99,840	-	(193,894)	-	193,894	-	-	-	-	99,840	-	99,840
	34	-	-	-	-	-	-	(1,137,690)	-	-	-	-	-	(1,137,690)	(799,560)	(1,937,250)
Total transaction with owners, recorded directly in equity																
		-	-	-	99,840	-	259,637 (1,397,327)	(259,637)	(259,637)	-	-	-	-	(1,297,487)	(799,560)	(2,097,047)
Comprehensive income (expense) for the year																
	Profit	-	-	-	-	-	-	1,498,152	-	-	-	-	-	1,498,152	1,341,014	2,839,166
	Other comprehensive income (expense)	-	-	-	-	-	-	-	-	(18)	7	(3,778)	(3,789)	(3,789)	1	(3,789)
Total comprehensive income (expense) for the year																
		-	-	-	-	-	-	1,498,152	-	(18)	7	(3,778)	(3,789)	1,494,363	1,341,015	2,835,378
Transfer to legal reserve																
	23	-	-	-	-	74,908	-	(74,908)	-	-	-	-	-	-	-	-
Balance at 31 December 2020																
		19,180,500	60,600	9,840,436	135,058	925,766	259,637	13,341,336	(259,637)	(176)	(88)	104,639	104,375	43,553,948	8,617,789	52,171,737

The accompanying notes form an integral part of the financial statements.

Statement of change in equity
TPI Polene Public Company Limited and its Subsidiaries

Separate financial statements												(in thousand BnR)	
Other surpluses (deficits)			Retained earnings					Other components of equity					
	Note	Issued and paid-up share capital	Share premium	Shareholding changes in Group	Share premium on treasury share	Legal reserve	Treasury Share reserve	Unappropriated	Treasury Share	Measuring financial asset	Share of other comprehensive income (expense) of subsidiaries and associates using equity method	Total other components of equity	Total equity
Year ended 31 December 2019													
Balance at 1 January 2019 - as reported													
	3(C)	20,190,000	60,600	-	-	836,921	1,682,625	10,828,299	(1,682,625)	(152)	-	(152)	31,915,668
Impact of changes in accounting policies													
		-	-	9,840,436	35,218	-	-	1,580,801	-	-	109,589	109,589	11,566,044
Balance at 1 January 2019 - restated													
		19,180,500	60,600	9,840,436	35,218	836,921	1,682,625	12,409,100	(1,682,625)	(152)	109,589	109,437	43,481,712
Transactions with owners, recorded directly in equity													
Contributions by and distributions to owners of the parent													
	22	-	-	-	-	-	301,270	(301,270)	(301,270)	-	-	-	(301,270)
	22	(1,009,500)	-	-	-	-	(1,983,895)	1,009,500	1,983,895	-	-	-	-
	34	-	-	-	-	-	-	(959,025)	-	-	-	-	(959,025)
Total transaction with owners, recorded directly in equity													
		(1,009,500)	-	-	-	-	(1,682,625)	(250,795)	1,682,625	-	-	-	(1,260,295)
Comprehensive income (expense) for the year													
		-	-	-	-	-	-	1,393,525	-	-	-	-	1,393,525
		-	-	-	-	-	-	(196,557)	-	(101)	(1,172)	(1,273)	(197,830)
Total comprehensive income (expense) for the year													
		-	-	-	-	-	-	1,196,968	-	(101)	(1,172)	(1,273)	1,195,695
Transfer to legal reserve													
	23	-	-	-	-	19,917	-	(13,937)	-	-	-	-	-
Balance at 31 December 2019													
		19,180,500	60,600	9,840,436	35,218	850,838	-	13,341,336	-	(253)	108,417	108,164	43,417,112

The accompanying notes form an integral part of the financial statements.

Statement of change in equity

TPI Polene Public Company Limited and its Subsidiaries

Separate financial statements												(in thousand Baht)	
	Note	Other surpluses (deficits)		Retained earnings					Other components of equity			Total equity	
		Issued and paid-up share capital	Share premium	Shareholding changes in Group	Share premium on treasury share	Legal reserve	Treasury Share reserve	Unappropriated	Treasury Share	Measuring financial asset	Share of other comprehensive income (expense) of subsidiaries and associates using equity method		Total other components of equity
Year ended 31 December 2020													
Balance at 31 December 2019 - as reported		19,180,500	60,600	-	-	850,858	-	10,676,370	-	(253)	-	(253)	30,768,075
Impact of changes in accounting policies	3(C)	-	-	9,840,436	35,218	-	-	2,664,966	-	-	108,417	108,417	12,649,037
Balance at 31 December 2019 - restated		19,180,500	60,600	9,840,436	35,218	850,858	-	13,341,336	-	(253)	108,417	108,164	43,417,112
Impact of changes in accounting policies	3(A)	-	-	-	-	-	-	(60,040)	-	-	-	-	(60,040)
Balance at 1 January 2020		19,180,500	60,600	9,840,436	35,218	850,858	-	13,281,296	-	(253)	108,417	108,164	43,357,072
Transactions with owners, recorded directly in equity													
Contributions by and distributions to owners of the parent													
Treasury shares purchased	22	-	-	-	-	-	453,531	(259,637)	(453,531)	-	-	-	(259,637)
Writing off the treasury shares	22	-	-	-	99,840	-	(193,894)	-	93,894	-	-	-	99,840
Dividends	34	-	-	-	-	-	-	(1,137,690)	-	-	-	-	(1,137,690)
Total transaction with owners, recorded directly in equity		-	-	-	99,840	-	259,637	(1,397,327)	(259,637)	-	-	-	(1,297,487)
Comprehensive income (expense) for the year													
Profit		-	-	-	-	-	-	1,498,152	-	-	-	-	1,498,152
Other comprehensive income (expense)		-	-	-	-	-	-	-	-	2	(3,791)	(3,789)	(3,789)
Total comprehensive income (expense) for the year		-	-	-	-	-	-	1,498,152	-	2	(3,791)	(3,789)	1,494,363
Transfer to legal reserve	23	-	-	-	-	74,908	-	(74,908)	-	-	-	-	-
Balance at 31 December 2020		19,180,500	60,600	9,840,436	135,058	925,766	259,637	13,307,213	(259,637)	(251)	104,626	104,375	43,553,948

The accompanying notes form an integral part of the financial statements.

Statement of cash flows

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	Year ended 31 December		Year ended 31 December	
	2020	2019	2020	2019 (Restated)
<i>Cash flows from operating activities</i>				
Profit for the year	2,839,166	2,764,571	1,498,152	1,393,525
<i>Adjustments to reconcile profit (loss) to cash receipts (payments)</i>				
Depreciation and amortisation	3,124,488	3,189,045	1,882,762	2,040,662
Interest income	(48,347)	(90,640)	(41,870)	(36,370)
Finance costs	2,014,903	1,959,023	1,750,581	1,797,714
Dividend income	(6)	(5)	(6)	(5)
Unrealised (gain) loss on foreign exchange	21,640	(70,521)	7,404	(8,630)
Reversal of bad and doubtful debt expense	(8,743)	(5,820)	-	-
Reversal of losses on decline in value of inventories	(14,973)	(35,374)	(10,988)	(35,374)
Provision for employees benefits	32,751	611,523	23,466	512,050
Loss on sale and write-off of plant and equipment	1,298	26,100	9,960	30,255
Loss on impairment of exploration assets	1,601,820	-	-	-
Gain from sale investment properties	(29,000)	-	-	-
Gain on disposal of investments in subsidiary	-	-	-	(6,276)
Share of (profit) loss of subsidiaries and associates accounted for using equity method	(56,321)	18,704	(2,028,104)	(3,110,272)
Tax income	(74,325)	(21,528)	(181,688)	(165,981)
	9,404,351	8,345,078	2,909,669	2,411,298
<i>Changes in operating assets and liabilities</i>				
Trade accounts receivable	(201,847)	(164,211)	(2,144,760)	(153,659)
Other receivables	(5,694)	(170,428)	10,777	(63,068)
Receivable and advances to related parties	17,558	(18,237)	6,166	(24,624)
Inventories	3,080,629	191,226	3,183,455	611,733
Other current assets	(97,068)	12,308	(34,993)	19,436
Other non-current assets	(54,057)	(27,182)	(39,374)	(17,592)
Trade accounts payable	338,690	(465,634)	143,117	(602,748)
Other payables	(420,890)	170,130	(193,091)	79,111
Payable and advances from related parties	29,444	(9,769)	354,627	317,518
Other current liabilities	(3,127)	54,298	3,129	27,666
Provision for employee benefits	(43,826)	(60,928)	(37,323)	(47,024)
Other non-current liabilities	1,150	105,343	-	-
Cash generated from operating	12,045,313	7,937,378	4,161,399	2,558,047
Net tax received (paid)	(169,312)	(167,241)	(14,772)	27,411
Net cash from operating activities	11,876,001	7,770,137	4,146,627	2,585,458

The accompanying notes form an integral part of the financial statements.

Statement of cash flows

TPI Polene Public Company Limited and its Subsidiaries

	Consolidated financial statements		Separate financial statements	
	Year ended 31 December		Year ended 31 December	
	2020	2019	2020	2019 (Restated)
<i>Cash flows from investing activities</i>				
Interest received	27,291	109,786	15,895	(23,941)
Dividend received	6	5	1,972,381	1,995,504
(Increase) decrease in equity and debt instruments	(797,394)	1,609,956	(1,702,353)	300,000
Decrease in other long-term investments	-	26,942	-	17,000
Decrease in long-term investments in related party	-	217	-	217
Acquisition of investment properties	(14,074)	-	-	-
Acquisition of property, plant and equipment	(10,736,815)	(9,088,372)	(4,173,106)	(2,014,897)
Acquisition of intangible assets	(320,680)	(1,054)	(312,664)	(1,054)
Proceeds from sale of investment properties	29,000	-	-	-
Proceeds from sale of plant and equipment	21,057	9,888	13,479	1,616
Advance payment for plant and equipment	(399,808)	(815,377)	(164,144)	(318,582)
Cash outflow on loans to related parties	-	-	(319,629)	(251,049)
Proceeds from repayment of loans to related parties	-	-	2,000	21,352
Acquisition of subsidiary, net of cash acquired	(2,959)	-	-	-
Proceeds from disposal of investments in subsidiary	-	-	-	105,988
Net cash outflow on addition investment in subsidiary	-	-	-	(99,000)
Cash outflow for decommissioning	(795)	(1,621)	-	-
Net cash used in investing activities	(12,195,171)	(8,149,630)	(4,668,141)	(266,846)

The accompanying notes form an integral part of the financial statements.

Statement of cash flows

TPI Polene Public Company Limited and its Subsidiaries

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	Year ended 31 December		Year ended 31 December	
	2020	2019	2020	2019 (Restated)
<i>Cash flows from financing activities</i>				
Finance cost paid	(2,281,358)	(2,021,474)	(1,930,224)	(1,817,461)
Dividend paid to owners of the Company	(1,937,250)	(1,708,616)	(1,137,690)	(959,025)
Payment of lease liabilities				
(2019: Finance lease payments)	(135,450)	(775)	(85,932)	(775)
Increase (decrease) in short-term loans from financial institutions	(1,624,782)	298,653	(1,532,681)	922,373
Proceeds from short-term loan from related party	-	-	695,000	-
Repayment of short-term loans from related parties	-	-	(695,000)	(43,873)
Proceeds from long-term loans from financial institutions	-	2,727,600	-	2,727,600
Repayment of long-term loans from financial institutions	(1,605,033)	(5,942,445)	(1,605,033)	(5,942,445)
Proceeds from issue of debentures	19,544,000	13,450,000	15,600,000	9,630,000
Repayment of debentures	(7,555,800)	(7,750,000)	(7,555,800)	(7,750,000)
Proceeds from sale treasury shares	293,734	-	293,734	-
Payment of treasury shares	(453,531)	(301,270)	(453,531)	(301,270)
Net cash from (used in) financing activities	4,244,530	(1,248,327)	1,592,843	(3,534,876)
Net increase (decrease) in cash and cash equivalents,				
before effect of exchange rates	3,925,360	(1,627,820)	1,071,329	(1,216,264)
Effect of exchange rate changes	(11,801)	5,105	995	621
Cash and cash equivalents from changes in holding of				
investments in subsidiary	475	-	-	-
Net increase (decrease) in cash and cash equivalents	3,914,034	(1,622,715)	1,072,324	(1,215,643)
Cash and cash equivalents at 1 January	2,743,845	4,366,560	962,604	2,178,247
Cash and cash equivalents at 31 December	6,657,879	2,743,845	2,034,928	962,604
<i>Non-cash transactions</i>				
Advances of plant and equipment	-	438,713	-	268,075
Other payables - plant and equipment	737,159	1,396,662	161,310	22,158
Other non-current liabilities - intangible assets	84,414	-	84,414	-

The accompanying notes form an integral part of the financial statements.

Notes to the financial statements

For the year ended 31 December 2020

TPI Polene 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 authorised for issue by the audit committee, as appointed by the Board of Directors of the Company, on 19 February 2021.

1 General information

TPI Polene Public Company Limited, the “Company”, is incorporated in Thailand and has its registered office at 26/56, TPI Tower, Chan Tat Mai Road, Tungmahamek, Sathorn, Bangkok.

The Company was listed on the Stock Exchange of Thailand in November 1990.

The Company operates in 3 major industries and has 18 distribution terminals around the country. It operates in the cement industry at Kang-Khoi, Saraburi and has 8 plants consisting of 4 cement manufacturing plants and 4 dry mortar manufacturing plants. It operates in the construction materials industry at Amphur Chalermprakiet, Saraburi and has cement roof tiles and fibre cement board manufacturing plants. It operates in the plastic industry at Amphur Muang, Rayong and has 2 LDPE and EVA plastic manufacturing plants. Details of the Company's subsidiaries as at 31 December 2020 and 2019 are given in note 10.

2 Basis of preparation of the financial statements

(a) Statement of compliance

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.

New and revised TFRS are effective for annual accounting periods beginning on or after 1 January 2020. The initial application of these new and revised TFRS has resulted in changes in certain of the Group's accounting policies.

The Group has initially applied TFRS - Financial instruments standards which comprise TFRS 9 Financial Instruments and relevant standards and interpretations and TFRS 16 Leases and disclosed impact from changes to significant accounting policies in note 3(A) and 3(B).

In addition, the Group has not early adopted a number of new and revised TFRS, which are not yet effective for the current period in preparing these financial statements. The Group has assessed the potential initial impact on the financial statements of these new and revised TFRS and expects that there will be no material impact on the financial statements in the period of initial application.

(b) Functional and presentation currency

The financial statements are prepared in Thai Baht, which is the Company's functional currency.

(c) Use of judgements and estimates

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 accounting policies. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

(i) Judgements

Information about judgements made in applying accounting policies that have the most significant effects on the amounts recognised in the financial statements is included in the following notes:

4(k) and 15 Leases:

- whether an arrangement contains a lease;
- whether the Group is reasonably certain to exercise extension options;
- whether the Group exercise termination options;
- whether the Group has transferred substantially all the risks and rewards incidental to the ownership of the assets to lessees.

4(u) Revenue recognition:

- whether performance obligations in a bundled sale of products and services are capable of being distinct;
- whether revenue from sales of products is recognised over time or at a point in time;
- commission revenue: whether the Group acts as an agent in the transaction rather than as a principal;
- whether long-term advances received from customers have significant financing component;

- 5 Impact of COVID-19 Outbreak ; and
- 9, 10 Equity-accounted investees: whether the Group has significant influence over an investee.
- (ii) Assumptions and estimation uncertainties
- Information about assumption and estimation uncertainties at 31 December 2020 that have a significant risk of resulting in a material adjustments to the carrying amounts of assets and liabilities in the next financial year is included in the following notes:
- 4(k) Determining the incremental borrowing rate to measure lease liabilities;
- 4(u) Revenue recognition: estimate of expected returns;
- 5 Impact of COVID-19
- 8 Measurement of allowance for decline in value of inventories adjusted to net realisable value
- 14 Impairment test of key assumptions underlying recoverable amounts
- 20 Measurement of defined benefit obligations: key actuarial assumptions;
- 38 Recognition and measurement of provisions and contingencies: key assumptions about the likelihood and magnitude of an outflow of resources;
- 35 Measurement of ECL allowance for trade receivables: key assumptions in determining the weighted-average loss rate;
- 31 Recognition of deferred tax assets: availability of future taxable profit against which deductible temporary differences and tax losses carried forward can be utilised; and
- 35 Determining the fair value of financial instruments on the basis of significant unobservable inputs.

3 Changes in accounting policies

From 1 January 2020, the Group has initially applied TFRS - Financial instruments standards, TFRS 16. And at the Board of Directors' meeting of the Company held on 28 January 2021, the Board of Directors' acknowledged the changes of its accounting policies of investments in subsidiaries and associates in separate financial statement from the cost method to the equity method and retrospectively adjusted to the financial statements.

		(in thousand Baht)		
		Consolidated financial statements	Separate financial statements	
	Note	Retained earnings	Retained earnings	Other components of equity
Impact on changes in accounting policies				
At 31 December 2018 - as reported		12,409,100	10,828,299	(152)
<i>Increase (decrease) due to:</i>				
Change in accounting policy for investments in subsidiaries and associates in separate financial statements	(C)	-	1,580,801	109,589
At 1 January 2019 - restated		12,409,100	12,409,100	109,437
At 31 December 2019 - as reported		13,341,336	10,676,370	(253)
<i>Increase (decrease) due to:</i>				
Adoption of TFRS - Financial instruments standards				
Impairment losses on financial assets	(A)	(60,040)	(60,040)	-
Change in accounting policy for investments in subsidiaries and associates in separate financial statements	(C)	-	2,664,966	108,417
At 1 January 2020 - restated		13,281,296	13,281,296	108,164

(A) TFRS - Financial instruments standards

The Group has adopted TFRS - Financial instruments standards by adjusting the cumulative effects to retained earnings on 1 January 2020. Therefore, the Group did not adjust the information presented for 2019. The disclosure requirements of TFRS for financial instruments have not generally been applied to comparative information.

These TFRS - Financial instruments standards establish requirements related to definition, recognition, measurement, impairment and derecognition of financial assets and financial liabilities, including accounting for derivatives and hedge accounting. The impact from adoption of TFRS - Financial instruments standards are as follows:

Impairment - Financial assets

TFRS 9 introduces the 'expected credit loss' (ECL) model whereas previously the Group estimates allowance for doubtful account by analysing payment histories and future expectation of customer payment. TFRS 9 requires considerable judgement about how changes in economic factors affect ECLs, which will be determined on a probability-weighted basis. The new impairment model applies to financial assets measured at amortised cost and debt investments measured at FVOCI except for investments in equity instruments.

The Group has determined that the application of TFRS 9's impairment requirements at 1 January 2020 results in an additional allowance for impairment loss as follows:

	(in thousand Baht)	
	Consolidated financial statements	Separate financial statements
Allowance for impairment losses at 31 December 2019		
Allowance for doubtful debts - other receivables	-	-
	-	-
<i>Additional impairment loss recognised at 1 January 2020 on:</i>		
- Other receivables	60,040	60,040
Allowance for impairment losses at 1 January 2020	60,040	60,040

The Group has opted to recognise the increase of impairment loss as an adjustment to retained earnings as at 1 January 2020.

(B) TFRS 16 Leases

From 1 January 2020, the Group has initially adopted TFRS 16 on contracts previously identified as leases according to TAS 17 Leases and TFRIC 4 Determining whether an arrangement contains a lease using the modified retrospective approach.

Previously, the Group as a lessee, recognised payments made under operating leases and relevant lease incentives in profit or loss on a straight-line basis over the term of the lease. Under TFRS 16, the Group assesses whether a contract is, or contains, a lease. If a contract contains lease and non-lease components, the Group allocates the consideration in the contract based on stand-alone selling price (transaction price). As at 1 January 2020, the Group and the Company recognised right-of-use assets and lease liabilities, as a result, the nature of expenses related to those leases was changed because the Group recognised depreciation of right-of-use assets and interest expense on lease liabilities.

On transition, the Group also elected to use the following practical expedients:

- do not recognise right-of-use assets and lease liabilities for leases with less than 12 months of lease term;
- use hindsight when determining the lease term;
- apply a single discount rate to a portfolio of leases with similar characteristics; and
- exclude initial direct costs from measuring the right-of-use asset.

	(in thousand Baht)	
	Consolidated financial statements	Separate financial statements
Impact from the adoption of TFRS 16		
At 1 January 2020		
Increase in right-of-use assets	626,762	325,790
Decrease in other receivables	(1,486)	(14)
Decrease in receivables and advances to related parties	(1,272)	(1,712)
Decrease in other non-current assets	(170,565)	(125,559)
Increase in lease liabilities	(453,439)	(198,505)
Measurement of lease liability		
Operating lease commitment as disclosed at 31 December 2019	623,208	276,957
Recognition exemption for short-term leases	(31,882)	(24,203)
Service agreement that does not qualify	(83,008)	(81,599)
Extension option of the lease term	53,929	46,009
	562,247	217,164
Present value of remaining lease payments, discounted using the incremental borrowing rate at 1 January 2020	453,439	198,505
Finance lease liabilities recognised as at 31 December 2019	-	-
Lease liabilities recognised at 1 January 2020	453,439	198,505
Weighted-average incremental borrowing rate (% per annum)	3.89 - 4.51	3.89

Right-of-use assets and lease liabilities shown above were presented as part of Construction Materials, Petrochemical & Chemicals, Energy & Utilities and Agriculture segments.

(C) Changes in accounting policy for investments in subsidiaries and associates in separate financial statements

The Company changed the accounting policy for recognition and subsequent measurement of investments in the separate financial statements from the cost method to the equity method. Under the cost method the investments are carried at cost and only dividends received by the Company from the subsidiaries and associates are recognised in profit. Under the equity method investments in subsidiaries and associates are initially recognised at cost. Subsequently the carrying value of the investments are adjusted for the Company's share in profit or loss, other comprehensive income and dividends received. As the Company has significantly expanded its business through investment in subsidiaries and associates, the Company believes that the equity method better reflects the rights of its shareholders to profit and loss, other comprehensive income and accumulated equity from subsidiaries and associates than the cost method. The change in this accounting policy is carried out in accordance with Thai Accounting Standard No. 27, *Separate Financial Statements*. The Company has applied this policy since 1 January 2020 and retrospectively adjusted the previous periods' separate financial statements for comparison purpose as follows;

(in thousand Baht)

	Separate financial statements					
	At 1 January 2019			At 31 December 2020		
	As reported	Impact of change in accounting policies	Restated	As reported	Impact of change in accounting policies	Restated
Statement of financial position						
Current assets						
Short-term loans to related parties	268,801	-	268,801	499,171	(20,775)	478,396
Non-current assets						
Investments in subsidiaries	12,444,474	11,024,581	23,469,055	12,443,762	12,147,793	24,591,555
Investments in associates	229,500	542,697	772,197	229,500	523,058	752,558
Receivables and advances to related parties	421,984	(1,234)	420,750	421,984	(1,039)	420,945
	<u>13,364,759</u>	<u>11,566,044</u>	<u>24,930,803</u>	<u>13,594,417</u>	<u>12,649,037</u>	<u>26,243,454</u>
Equity						
Retained earnings						
- unappropriated	10,828,299	1,580,801	12,409,100	10,676,370	2,664,966	13,341,336
Other surpluses	-	9,840,436	9,840,436	-	9,840,436	9,840,436
Share premium on treasury shares	-	35,218	35,218	-	35,218	35,218
Other components of equity	(152)	109,589	109,437	(253)	108,417	108,164
	<u>10,828,147</u>	<u>11,566,044</u>	<u>22,394,191</u>	<u>10,676,117</u>	<u>12,649,037</u>	<u>23,325,154</u>

(in thousand Baht)

	Separate financial statements		
	For the year ended 31 December 2019		
	As reported	Impact of change in accounting policies	Restated
Statement of comprehensive income			
Investment income	2,055,627	(1,995,499)	60,128
Share of profit of subsidiaries accounted for using equity method	-	3,128,976	3,128,976
Share of profit (loss) of associates accounted for using equity method	-	(18,704)	(18,704)
Profit for the year	278,752	1,114,773	1,393,525
Other comprehensive income (expense)			
Share of other comprehensive income (expense) of subsidiaries accounted for using equity method	-	(30,845)	(30,845)
Share of other comprehensive income (expense) of associates accounted for using equity method	-	(935)	(935)
Other comprehensive income (expense) for the year, net of tax	(166,050)	(31,780)	(197,830)
Total comprehensive income (expense) for the year	112,702	1,082,993	1,195,695
Earning per share (basic) (in Baht)	0.015	0.058	0.073

(in thousand Baht)

Separate
financial statements
For the year ended
31 December 2020

Statement of comprehensive income

Decrease in investment income	(1,972,376)
Increase in share of profit of subsidiaries accounted for using equity method	1,971,783
Increase in share of profit (loss) of associates accounted for using equity method	56,321
Increase in profit (loss) for the year	55,728
Decrease in share of other comprehensive income (expense) of subsidiaries accounted for using equity method	(13)
Decrease in share of other comprehensive income (expense) of associates accounted for using equity method	(3,778)
Decrease in other comprehensive income (expense) for the year, net of tax	(3,791)
Increase in total comprehensive income (expense) for the year	51,937
Increase in earning per share (basic) (in Baht)	0.003

4 Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

(a) Basis of consolidation

The consolidated financial statements relate to the Company and its subsidiaries (together referred to as the “Group”) and the Group’s interests in associates.

Business combinations

The Group applies the acquisition method for all business combinations when control is transferred to the Group, as describe in subsidiaries section, other than those with entities under common control.

The acquisition date is the date on which control is transferred to the acquirer.

Goodwill is measured as the fair value of the consideration transferred including the recognised amount of any non-controlling interest in the acquiree, less the net recognised amount (generally fair value) of the identifiable assets acquired and liabilities assumed, all measured as of the acquisition date. Any gain on bargain purchase is recognised in profit or loss immediately.

Consideration transferred includes the fair values of the assets transferred, liabilities incurred by the Group to the previous owners of the acquiree, and equity interests issued by the Group. Consideration transferred also includes the fair value of any contingent consideration and share-based payment awards of the acquiree that are replaced mandatorily in the business combination. If a business combination results in the termination of pre-existing relationships between the Group and the acquiree, then the lower of the termination amount, as contained in the agreement, and the value of the off-market element is deducted from the consideration transferred and recognised in other expenses.

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.

Transaction costs that the Group incurs in connection with a business combination, such as legal fees, and other professional and consulting fees are expensed as incurred.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports 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.

Subsidiaries

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.

Non-controlling interests

At the acquisition date, the Group measures any non-controlling interest at its proportionate interest in the identifiable net assets of the acquiree.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

Loss of control

When the Group loses control over a subsidiary, it derecognises the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. 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.

Interests in equity - accounted investees

The Group's interests in equity - accounted investees comprise interests in associates.

Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies.

Interests in associates are accounted for using the equity method. They are initially recognised at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence.

Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealised income or expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. Unrealised gains arising from transactions with equity-accounted investees 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.

(b) Investments in subsidiaries and associates

Investments in subsidiaries and associates in the separate financial statements of the Company are accounted for using the equity method.

Interests in subsidiaries and associates are accounted for using the equity method. They are initially recognised at cost, which includes transaction costs. Subsequent to initial recognition, the separate financial statements include the Company's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence or control ceases.

Disposal of investments in the separate financial statements

On disposal of an investment, the difference between net disposal proceeds and the carrying amount is recognised in profit or loss.

If the Company disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

(c) Foreign currencies

Foreign currency transactions

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at exchange rates at the dates of the transactions.

Monetary assets and liabilities denominated in foreign currencies at the reporting date are translated to the functional currency at the exchange rates ruling at that date.

Non-monetary assets and liabilities measured at cost in foreign currencies are translated to the functional currency at the exchange rates at the dates of the transactions.

Foreign currency differences are generally recognised in profit or loss. However, foreign currency differences arising from the translation of the following items are recognised in other comprehensive income:

- an investment in equity securities designated as at FVOCI (2019: *available-for-sale equity investments*) (except on impairment, in which case foreign currency differences that have been recognised in other comprehensive income are reclassified to profit or loss);

Foreign operations

The assets and liabilities of foreign operations, including 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 are recognised in other comprehensive income and accumulated in the translation reserve, except to extent that the translation difference is allocated to non-controlling interest.

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal. If the Group disposes of part of its interest in a subsidiary but retains control, then the relevant proportion of the cumulative amount is reattributed to non-controlling interests. When the Group disposes of only part of an associate or joint venture while retaining significant influence or joint control, the relevant proportion of the cumulative amount is reclassified to profit or loss.

(d) Financial instruments

Accounting policies applicable from 1 January 2020

(d.1) Recognition and initial measurement

Trade receivables, debt securities issued and trade payables are initially recognised when they are originated. All other financial assets and financial liabilities are initially recognised when the Group becomes a party to the contractual provisions of the instrument.

A financial asset and financial liability (unless it is a trade receivable without a significant financing component or measured at FVTPL) is initially measured at fair value plus transaction costs that are directly attributable to its acquisition or issue. A trade receivable without a significant financing component is initially measured at the transaction price. A financial asset and a financial liability measured at FVTPL are initially recognised at fair value.

(d.2) Classification and subsequent measurement

Financial assets - classification

On initial recognition, a financial asset is classified as measured at: amortised cost; fair value to other comprehensive income (FVOCI); or fair value to profit or loss (FVTPL).

Financial assets are not reclassified subsequent to their initial recognition unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified prospectively from the reclassification date.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cashflows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

All financial assets not classified as measured at amortised cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Group may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortised cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

Financial assets - business model assessment

The Group makes an assessment of the objective of a business model in which a financial asset is held at a portfolio level because this best reflects the way the business is managed and information is provided to management. The information considered includes:

- the stated policies and objectives for the portfolio and the operation of those policies in practice. These include whether management's strategy focuses on earning contractual interest income, maintaining a particular interest rate profile, matching the duration of the financial assets to the duration of any related liabilities or expected cash outflows or realising cash flows through the sale of the assets;
- how the performance of the portfolio is evaluated and reported to the Group's management;
- the risks that affect the performance of the business model (and the financial assets held within that business model) and how those risks are managed;
- how managers of the business are compensated - e.g. whether compensation is based on the fair value of the assets managed or the contractual cash flows collected; and
- the frequency, volume and timing of sales of financial assets in prior periods, the reasons for such sales and expectations about future sales activity.

Transfers of financial assets to third parties in transactions that do not qualify for derecognition are not considered sales for this purpose, consistent with the Group's continuing recognition of the assets.

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

Financial assets - assessment whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, "principal" is defined as the fair value of the financial asset on initial recognition. "Interest" is defined as consideration for the time value of money and for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs (e.g. liquidity risk and administrative costs), as well as a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Group considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable-rate features; and
- terms that limit the Group's claim to cash flows from specified assets (e.g. non-recourse features).

Financial assets - subsequent measurement and gains and losses

Financial assets at FVTPL	These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss.
Financial assets at amortised cost	These assets are subsequently measured at amortised cost using the effective interest method. The amortised cost is reduced by impairment losses. Interest income, foreign exchange gains and losses and impairment are recognised in profit or loss. Any gain or loss on derecognition is recognised in profit or loss.
Debt investments at FVOCI	These assets are subsequently measured at fair value. Interest income, calculated using the effective interest method, foreign exchange gains and losses and impairment are recognised in profit or loss. Other net gains and losses are recognised in OCI. On derecognition, gains and losses accumulated in OCI are reclassified to profit or loss.
Equity investments at FVOCI	These assets are subsequently measured at fair value. Dividends are recognised as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognised in OCI and are never reclassified to profit or loss.

Financial liabilities - classification, subsequent measurement and gains and losses

Financial liabilities are classified as measured at amortised cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognised in profit or loss. Other financial liabilities are subsequently measured at amortised cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognised in profit or loss. Any gain or loss on derecognition is also recognised in profit or loss.

(d.3) Derecognition

Financial assets

The Group derecognises a financial asset when the contractual rights to 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 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 enters into transactions whereby it transfers assets recognised in its statement of financial position, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognised.

Financial liabilities

The Group derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire. The Group 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.

On derecognition of a financial liability, the difference between the carrying amount extinguished and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognised in profit or loss.

(d.4) Offsetting

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

Accounting policies applicable before 1 January 2020

Investments in other debt and equity securities

Debt securities and marketable equity securities held for trading are classified as current assets and are stated at fair value, with any resultant gain or loss recognised in profit or loss.

Debt securities that the Group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are stated at amortised cost, less any impairment losses. The difference between the acquisition cost and redemption value of such debt securities is amortised using the effective interest rate method over the period to maturity.

Debt securities and marketable equity securities, other than those securities held for trading or intended to be held to maturity, are classified as available-for-sale investments. Available-for-sale investments are, subsequent to initial recognition, stated at fair value, and changes therein, are recognised directly in equity. Impairment losses and foreign exchange differences are recognised in profit or loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in profit or loss. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in profit or loss.

Equity securities which are not marketable are stated at cost less any impairment losses.

The fair value of financial instruments classified as held-for-trading and available-for-sale is determined as the quoted bid price at the reporting date.

Disposal of investments

On disposal of an investment, the difference between net disposal proceeds and the carrying amount together with the associated cumulative gain or loss that was reported in equity is recognised in profit or loss.

If the Group disposes of part of its holding of a particular investment, the deemed cost of the part sold is determined using the weighted average method applied to the carrying value of the total holding of the investment.

(e) Cash and cash equivalents

Cash and cash equivalents in the statements of cash flows comprise cash balances, call deposits and highly liquid short-term investments. Bank overdrafts that are repayable on demand are a component of financing activities for the purpose of the statement of cash flows.

(f) Trade and other accounts receivable

A receivable is recognised when the Group has an unconditional right to receive consideration.

A receivable is measured at transaction price less allowance for expected credit loss (*2019: allowance for doubtful accounts*) which is determined based on an analysis of payment histories and future expectations of customer payments. Bad debts are written off when incurred.

(g) Inventories

Inventories are measured at the lower of cost and net realisable value.

Cost of finished goods, diesel and natural gas, is calculated using the first in first out principle. Cost of other inventories are calculated using the weighted average cost principle. Cost comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition. 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.

A right to recover returned products is recognised when the products are expected to be returned by customers and measured by reference to the former carrying amount of the sold inventories less any expected costs to recover those products.

(h) Investment properties

Investment properties are properties which are held to earn rental income, for capital appreciation or for both, but not for sale in the ordinary course of business, use in the production or supply of goods or services or for administrative purposes.

Investment properties are measured at cost less accumulated depreciation and impairment losses.

Cost includes expenditure that is directly attributable to the acquisition of the investment property. The cost of self-constructed investment property includes the cost of materials and direct labour, and other costs directly attributable to bringing the investment property to a working condition for its intended use and capitalised borrowing costs.

Any gains and losses on disposal of investment properties are determined by comparing the proceeds from disposal with the carrying amount of investment property, and are recognised in profit or loss.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of condominium which are 20 years.

No depreciation is provided on land for rent and freehold land.

(i) Property, plant and equipment

Recognition and measurement

Owned assets

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 the cost of materials and direct labour, any other costs directly attributable to bringing the assets to a working condition for their intended use, the costs of dismantling and removing the items and restoring the site on which they are located, and capitalised borrowing costs. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment, and 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 if it is probable that 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.

Exploration assets

The Company follows the full cost method of accounting for petroleum and natural gas properties and related expenses whereby all costs associated with the exploration for productive and non-productive wells are treated as capitalised and will be charged to profit or loss when the exploratory wells have not identified proved reserves or have identified proved reserves but have not been found to be commercially producible or have abandoned.

Costs of properties comprise total acquisition costs of petroleum rights or the portion of costs applicable to properties as well as the decommissioning costs.

Depreciation

Depreciation is calculated based on the depreciable amount, which is the cost of an asset, or other amount substituted for cost, less its residual value.

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment or on units of production method of relevant assets. The estimated useful lives are as follows:

Land improvement	5 years
Leasehold improvement	8 - 10 years
Buildings and structures	10 - 49 years and per lease period
Machinery and equipment for production (concrete)	3 - 10 years
Other machinery and equipment for production	5 - 40 years
Tools and factory equipment	3 - 30 years
Furniture, fixtures and office equipment	3, 5 and 10 years
Vehicles	5 - 25 years

Machinery and equipment for production of LDPE, construction materials and machine for melt sheets and mixer trucks calculate depreciation based on units of production.

No depreciation is provided on freehold land, assets under construction and installation, and major spare parts have not been issued.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(j) Intangible assets

Concession

Cost of concessions on mining limestone and shale are include acquisition, exploration and development costs and are measured at cost less accumulated amortisation and accumulated impairment losses.

Research and development

Expenditure on research activities, undertaken with the prospect of gaining new scientific or technical knowledge and understanding, is recognised in profit or loss as incurred.

Development activities involve a plan or design for the production of new or substantially improved products and processes. 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. The expenditure capitalised includes the cost of materials, direct labour, overhead costs that are directly attributable to preparing the asset for its intended use, and capitalised borrowing costs. Other development expenditure is recognised in profit or loss as incurred.

Capitalised development expenditure is measured at cost less accumulated amortisation and accumulated impairment losses.

Other intangible assets

Other intangible assets that are acquired by the Group and have finite useful lives are measured at cost less accumulated amortisation and accumulated impairment losses.

Amortisation

Amortisation is based on the cost of the asset, or other amount substituted for cost, less its residual value.

Amortisation is recognised in profit or loss on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset.

The estimated useful lives for the current and comparative periods are as follows:

Concessions	Life of concessions :	13 - 25 years
Software licenses		3 - 12 years
Capitalised development costs		5 years

Amortisation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

(k) Leases

Accounting policies applicable from 1 January 2020

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. To assess whether a contract conveys the right to control the use of an identified asset, the Group uses the definition of a lease in TFRS 16.

As a lessee

At commencement or on modification of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease component on the basis of its relative stand-alone prices. However, for the leases of property the Group has elected not to separate non-lease components and account for the lease and non-lease components 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 lease payments made at or before the commencement date, 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 cost of the right-of-use asset reflects that 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 the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate. The lease payments also include amount under extension or termination option if the Group is reasonably certain to exercise option. Variable lease payments that do not depend on index or a rate are recognised as expenses in the accounting period in which they are incurred.

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 change in lease term, change in lease payments, change in the estimate of the amount expected to be payable under a residual value guarantee, or a change in the assessment of purchase, extension or termination options. 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 that contains a lease component and one or more additional lease or non-lease components, the Group allocates the consideration in the contract to each component on the basis of their relative standalone prices.

When the Group acts as a lessor, it determines at lease inception whether the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. If this is the case, then the lease is a finance lease; if not, then it is an operating lease.

The Group recognises lease payments received under operating leases as rental income 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 rental income in the accounting period in which they are earned.

Accounting policies applicable before 1 January 2020

As a lessee, leases in terms of which the Group substantially assumes all the risk and rewards of ownership are classified as finance leases. Property, plant and equipment acquired by way of finance leases is capitalised at the lower of its fair value and the present value of the minimum lease payments at the inception of the lease, less accumulated depreciation and impairment losses. Lease payments are apportioned between the finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are charged directly to the profit or loss.

Assets held under other leases were classified as operating leases and lease payments are recognised in profit or loss on a straight-line basis over the term of the lease. Lease incentives received are recognised in profit or loss as an integral part of the total lease expense, over the term of the lease. Contingent lease payments are accounted for by revising the minimum lease payments over the remaining term of the lease when the lease adjustment is confirmed.

As a lessor, rental income from investment property is recognised in profit or loss on a straight-line basis over the term of the lease. Lease incentives granted are recognised as an integral part of the total rental income. Contingent rentals are recognised as income in the accounting period in which they are earned.

Determining whether an arrangement contains a lease

At inception of an arrangement, the Group determines whether such an arrangement is or contains a lease. A specific asset is the subject of a lease if fulfilment of the arrangement is dependent on the use of that specified asset. An arrangement conveys the right to use the asset if the arrangement conveys to the Group the right to control the use of the underlying asset.

At inception or upon reassessment of the arrangement, the Group separates payments and other consideration required by such an arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Group concludes for a finance lease that it is impracticable to separate the payments reliably, an asset and a liability are recognised at an amount equal to the fair value of the underlying asset. Subsequently the liability is reduced as payments are made and an imputed finance charge on the liability is recognised using the Group's incremental borrowing rate.

(l) Impairment of financial asset

Accounting policies applicable from 1 January 2020

The Group recognises allowances for expected credit losses (ECLs) on financial assets measured at amortised cost (including cash and cash equivalents, trade receivables and other receivables, loans to others and related parties), debt investments measured at FVOCI, contract assets, lease receivables, and loan commitments issued which are not measured at FVTPL.

Measurement of ECLs

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the entity in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; or
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of a financial instrument.

Loss allowances for trade receivables, lease receivables and contract assets are always measured at an amount equal to lifetime ECLs. ECLs on these financial assets are estimated using a provision matrix based on the group's historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both current and forecast general economic conditions at the reporting date.

Loss allowances for all other financial instruments, the Group 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.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

The Group assumes that the credit risk on a financial asset has increased significantly if it is more than 30 days past due, significant deterioration in financial instruments' 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.

The Group considers a financial asset to be in default when:

- the debtor is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held); or
- the financial asset is more than 90 days past due.

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Increased loss allowance is recognised as an impairment loss in profit or loss. Loss allowances for financial assets measured at amortised cost are deducted from the gross carrying amount of the assets. For debt securities at FVOCI, the Group recognises an impairment loss in profit or loss with the corresponding entry in other comprehensive income.

Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortised cost and debt securities at FVOCI are credit-impaired. A financial asset is "credit-impaired" when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Evidence of credit-impairment includes significant financial difficulty, a breach of contract such as more than 90 days past due, probable the debtor will enter bankruptcy.

Write-off

The gross carrying amount of a financial asset is written off when the Group 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.

Accounting policies applicable before 1 January 2020

The carrying amounts of the Group'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.

An impairment loss is recognised if the carrying amount of an asset exceeds its recoverable amount. The impairment loss is recognised in profit or loss.

When a decline in the fair value of an available-for-sale financial asset has been recognised directly in equity and there is objective evidence that the value of the asset is impaired, the cumulative loss that had been recognised directly in equity is recognised in profit or loss even though the financial asset has not been derecognised. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that financial asset previously recognised in profit or loss.

Calculation of recoverable amount

The recoverable amount of held-to-maturity securities carried at amortised cost is calculated as the present value of the estimated future cash flows discounted at the original effective interest rate.

The recoverable amount of available-for-sale financial assets is calculated by reference to the fair value.

Reversal of impairment

An impairment loss in respect of a financial asset is reversed if the subsequent increase in recoverable amount can be related objectively to an event occurring after the impairment loss was recognised in profit or loss. For financial assets carried at amortised cost and available-for-sale financial assets that are debt securities, the reversal is recognised in profit or loss. For available-for-sale financial assets that are equity securities, the reversal is recognised in other comprehensive income.

(m) Impairment of non-financial assets

The carrying amounts of the Group'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 if the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. The impairment loss is recognised in profit or loss unless it reverses a previous revaluation credited to equity, in which case it is charged to equity.

Calculation of recoverable amount

The recoverable amount of a non-financial asset 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.

Reversal of impairment

Impairment losses recognised in prior periods in respect of non-financial assets are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. 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) Interest-bearing liabilities

Interest-bearing liabilities are recognised at cost.

(o) Trade and other accounts payable

Trade and other accounts payable are stated at cost.

Refund liabilities

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.

(p) Contract liabilities

A contract liability is the obligation to transfer goods or services to the customer. A contract liability is recognised when the Group receives or has an unconditional right to receive non-refundable consideration from the customer before the Group recognises the related revenue.

(q) Employee benefits

Defined contribution plans

Obligations for contributions to defined contribution plans are expensed as the related service is provided.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan. The Group's net obligation in respect of defined benefit legal severance pay plan is calculated by estimating 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. The discount rate is the yield at the reporting date on government bonds that have maturity dates approximating the terms of the Group's obligations and that are denominated in the same currency in which the benefits are expected to be paid.

The calculation of defined benefit obligations is 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 other comprehensive income. 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.

Short-term employee benefits

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.

(r) Provisions

A provision is recognised if, as a result of a past event, the Group 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 finance cost.

Decommissioning costs

The Group recorded provision for decommissioning cost whenever it is probable that there is an obligation as a result of the past event and reliable amount of obligation.

Decommissioning costs is based on discounting the expected future cash flows of provision for decommissioning costs. The estimates of decommissioning costs have been determined based on reviews and estimates by the Group's own engineers and managerial judgment.

(s) Fair values measurement

ûFair valueû 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 has access at that date. The fair value of a liability reflects its non-performance risk.

A number of the Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities.

When one is available, the Group measures the fair value of an instrument using the quoted price in an active market for that instrument. A market is regarded as ûactiveû if transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

If there is no quoted price in an active market, then the Group uses valuation techniques that maximise the use of relevant observable inputs and minimise the use of unobservable inputs. The chosen valuation technique incorporates all of the factors that market participants would take into account in pricing a transaction.

If an asset or a liability measured at fair value has a bid price and an ask price, then the Group measures assets and long positions at a bid price and liabilities and short 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 determines that the fair value on initial recognition differs from the transaction price and the fair value is evidenced neither by a quoted price in an active market for an identical asset or liability nor based on a valuation technique for which any unobservable inputs are judged to be insignificant in relation to the measurement, then the financial instrument is initially measured at fair value, adjusted to defer the difference between the fair value on initial recognition and the transaction price. Subsequently, that difference is recognised in profit or loss on an appropriate basis over the life of the instrument but no later than when the valuation is wholly supported by observable market data or the transaction is closed out.

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.

If the inputs used to measure the fair value of an asset or liability might be categorised in different levels of the fair value hierarchy, then the fair value measurement is categorised in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

The Group recognises transfers between levels of the fair value hierarchy at the end of the reporting period during which the change has occurred.

(t) Treasury shares

When share capital recognised as equity is repurchased, the amount of consideration paid, including directly attributable costs, is classified as treasury shares and recognised as a deduction from equity. An equal amount is appropriated from retained earnings and taken to a reserve for treasury shares within equity. When treasury shares are sold, the amount received is recognised as an increase in equity by crediting the cost of the treasury shares sold, calculated using the weighted average method, to the treasury shares account and transferring the equivalent amount back from reserve for treasury shares to retained earnings. Surpluses on the sale of treasury shares are taken directly to a separate category within equity, "Surplus on treasury shares". Net deficits on sale or cancellation of treasury shares are debited to retained earnings after setting off against any remaining balance of surplus on treasury shares.

(u) Revenue

Revenue is recognised when a customer obtains control of the goods or services in an amount that reflects the consideration to which the Group 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.

Sale of goods and services

Revenue from sales of goods is recognised when a customer obtains control of the goods, generally on delivery of the goods to the customers. For contracts that permit the customers to return the goods, revenue is recognised to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur. Therefore the amount of revenue recognised is adjusted for estimated returns, which are estimated based on the historical data.

Revenue for rendering of services is recognised over time as the services are provided. The stage of completion is assessed based on surveys of work performed. The related costs are recognised in profit or loss when they are incurred.

For bundled packages, the Group accounts for individual products and services separately if they are distinct (i.e. if a product or service is separately identifiable from other items and a customer can benefit from it) or the multiple services are rendered in different reporting periods. The consideration received is allocated based on their relative stand-alone selling prices.

Customer loyalty programme

The consideration received are allocated based on the relative stand-alone selling price of the products and the loyalty points. The amount allocated to the loyalty points is recognised as contract liabilities and revenue is recognised when loyalty points are redeemed or the likelihood of the customer redeeming the loyalty points becomes remote. The stand-alone selling prices of the points is estimated based on discount provided to customers and the likelihood that the customers will redeem the points, and the estimate shall be reviewed at the end of the reporting period.

(v) Investment income

Revenue from investments comprises rental income from investment properties and dividend and interest income from investments and bank deposits.

Rental income

Rental income from investment property is recognised in profit or loss on a straight-line basis over the term of the lease. Lease incentives granted are recognised as an integral part of the total rental income. Contingent rentals are recognised as income in the accounting period in which they are earned.

Dividend income

Dividend income is recognised in profit or loss on the date the Group's right to receive payments is established.

Interest income

Interest income is recognised in profit or loss as it accrues.

(w) Interest

Accounting policies applicable from 1 January 2020

Effective Interest Rate (EIR)

Interest income or expense is recognised using the effective interest method. The EIR is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortised cost of the financial liability.

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.

Accounting policies applicable before 1 January 2020

Interest income is recognised in profit or loss at the rate specified in the contract.

Interest expenses and similar costs are charged to profit or loss for the period in which they are incurred, except to the extent that they are capitalised as being directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial periods of time to be prepared for its intended use or sale.

(x) *Income tax*

Income tax expense for the year comprises current and deferred tax. Current and deferred tax are 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 the expected tax payable or receivable on 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 following 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 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 expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax is measured at the tax rates that are expected to be applied to the temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

In determining the amount of current and deferred tax, the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact tax expense in the period that such a determination is made.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

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. Future taxable profits are determined based on the reversal of relevant taxable temporary differences. If the amount of taxable temporary differences is insufficient to recognise a deferred tax asset in full, then future taxable profits, adjusted for reversals of existing temporary differences, are considered, based on the business plans for individual subsidiaries in the Group. 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.

(y) *Earnings per share*

The Group presents basic earnings per share (EPS) data for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to ordinary shareholders of the Company by the weighted average number of ordinary shares outstanding during the year, adjusted for own shares held.

(z) *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; a person or entity that are under common control or under the same significant influence as the Group; or the Group has direct or indirect control or joint control or has significant influence over the financial and managerial decision-making of a person or entity.

(aa) 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 corporate assets.

5 Impact of COVID-19 Outbreak

Due to the COVID-19 outbreak at the beginning of 2020, Thailand has enacted several protective measures against the outbreak, e.g. the order to temporarily shut down operating facilities or reduce operating hours, social distancing, etc. This has significantly affected economy. The management is closely monitoring the situation to manage the negative impact on the business as much as possible.

At 31 December 2020, the situation of COVID-19 outbreak is still ongoing, resulting in estimation uncertainty on the potential impact, therefore, the Group elected to apply accounting guidance on temporary accounting relief measures for additional accounting options in response to impact from the situation of COVID-19 outbreak on the following:

(a) Impairment of assets

The Group considered impairment of trade accounts receivable under simplified approach using historical loss rate and did not take forward-looking information into account.

(b) Fair value measurement

The Company elected to measure investment in non-marketable equity securities at 31 December 2020 using fair values at 1 January 2020.

(c) Deferred tax assets

The Group elected to exclude the factor of COVID-19 situation in considering sufficiency of future taxable profits to review the amount of deferred tax assets at 31 December 2020.

6 Related parties

Relationships with subsidiaries and associates are described in notes 10 and 9. Other related parties that the Group had significant transactions with during the year were as follows:

Name of entities	Country of incorporation/nationality	Nature of relationships
Key management personnel	Thailand	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.
Pornchai Enterprise Co., Ltd.	Thailand	Co-director
TPI Holding Co., Ltd.	Thailand	Co-director
Leophairatana Enterprise Co., Ltd.	Thailand	Co-director
Bangkok Union Insurance Public Co., Ltd.	Thailand	Co-director
Lampang Food Products Co., Ltd.	Thailand	Co-director
Hong Yiah Seng Co., Ltd.	Thailand	Co-director
Saraburi Ginning Mill Co., Ltd.	Thailand	Co-director
Thai Petrochemical Industry Co., Ltd.	Thailand	Co-director
Rayong Forest Co., Ltd.	Thailand	Co-director
Hong Yiah Seng Real Estates and Investment Co., Ltd.	Thailand	Co-director
TPI EOEG Co., Ltd.	Thailand	Co-director

The pricing policies for transactions with related parties are explained further below:

Transactions	Pricing policies
Sale of goods	Market price
Transportation income	Market price
Energy service for electrical manufacturing income	Agreed price
Shared service income	Agreed price
Waste disposal income	Referred to market price
Purchase of raw materials and spare parts	Referred to market price
Purchase of electricity	Referred to market price
Purchase of steam	Agreed price
Purchase of goods for sales promotion	Market price
Sale of investment	Book value
Interest income	MLR-1.5% / Agreed price
Interest expense	MLR-1.5%, 1.65% and 3.89%-4.51%
Insurance premium	Market price
Paper bag production charge	2.0 - 2.6 Baht per bag

Significant transactions for the years ended 31 December with related parties were as follows:

Year ended 31 December	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Subsidiaries				
Sales of goods	-	-	14,536,701	14,684,117
Transportation income	-	-	224,215	226,767
Purchase of raw materials and spare parts	-	-	370,105	2,897,040
Purchase of electricity	-	-	1,982,754	2,131,265
Purchase of steam	-	-	35,397	33,801
Purchase of goods for sales promotion	-	-	70,248	36,436
Sale of investment (see note 10)	-	-	-	105,988
Interest income	-	-	25,544	15,785
Interest expense	-	-	2,687	1,475
Waste disposal income	-	-	201,786	230,866
Other income	-	-	206,687	195,587
Administrative expenses	-	-	32,045	55,587
Associates				
Sale of goods	264	6,332	132	6,153
Purchase of raw materials	574,255	612,923	546,483	574,052
Interest expense	6,336	-	55	-
Other income	-	13	-	13
Insurance premium	28,133	24,165	20,350	17,826
Administrative expenses	-	2,528	-	1,568
Other related parties				
Sales of goods	3,261	5,801	933	717
Transportation income	9	20	6	20
Interest expense	3,031	-	1,769	-
Other income	499	240	499	240
Insurance premium	288,507	211,474	114,374	111,727
Administrative expenses	84,503	113,936	78,690	99,812
Key management personnel				
Key management personnel compensation				
Short-term employee benefits	372,120	393,651	290,248	314,786
Post-employment benefits	4,474	49,991	1,745	44,370
Total key management personnel compensation	376,594	443,642	291,993	359,156

(in thousand Baht)

(in thousand Baht)

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Expected credit losses (2019: <i>Bad and doubtful debts expense</i>) of loans to for the year	-	-	-	-

* Please see Note 14 impairment assessment for loan to related parties.

As at 31 December 2020, all short-term loans to related parties are promissory notes which have repayment schedules on demand.

Movements during the years ended 31 December of short-term loans to related parties were as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries				
At 1 January	-	-	497,261	267,564
Increase	-	-	319,629	251,049
Decrease	-	-	(2,000)	(21,352)
At 31 December	-	-	814,890	497,261

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Receivables and advances to related parties - current				
Subsidiaries				
TPI Concrete Co., Ltd.	-	-	3,255	3,098
TPI Polene Power Public Co., Ltd.	-	-	88,298	105,593
TPI All Seasons Co., Ltd.	-	-	29,086	26,632
TPI Refinery (1997) Co., Ltd.	-	-	324	65
Polene Plastic Co., Ltd.	-	-	5,947	4,441
TPI Polene Bio Organics Co., Ltd.	-	-	103,768	87,154
TPI Commercial Co., Ltd.	-	-	327	104
TPI Service Co., Ltd.	-	-	144	161
Thai Nitrate Co., Ltd.	-	-	187	173
TPI Polene Power (International) Co., Ltd.	-	-	65	64
TPI Polene Power (On Nut) Co., Ltd.	-	-	64	-
Mondo Thai Co., Ltd.	-	-	-	504
Thai Propoxide Co., Ltd.	-	-	64	64
TPI Healthcare Co., Ltd.	-	-	1,105	65
TPI Bio Pharmaceuticals Co., Ltd.	-	-	1,078	86
Master Achieve (Thailand) Co., Ltd.	-	-	207	4,114
TPI Polene Power Investment Co., Ltd.	-	-	34	34
Associates				
BUI Life Insurance Public Co., Ltd.	2,071	6,839	1,267	5,875
United Grain Industry Co., Ltd.	6	3,488	6	4
Other related parties				
Bangkok Union Insurance Public Co., Ltd.	57,290	67,502	19,504	24,029
Pornchai Enterprise Co., Ltd.	672	1,040	77	425
Rayong Forest Co., Ltd.	73	73	73	73
TPI Holding Co., Ltd.	64	64	64	64
TPI EOEG Co., Ltd.	64	64	64	64
Total	60,240	79,070	255,008	262,886
Less losses recognised using the equity method in excess of the investment				
TPI Bio Pharmaceuticals Co., Ltd.	-	-	(566)	-
Less allowance for expected credit loss (2019: <i>allowance for doubtful accounts</i>)	-	-	-	-
Net	60,240	79,070	254,442	262,886
Expected credit losses (2019: <i>Bad and doubtful debts expense</i>) For the year	-	-	-	-

Long-term investments in related parties

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Related parties				
Pornchai Enterprise Co., Ltd.	45,653	45,653	45,653	45,653

Receivables and advances to related parties - non-current**Subsidiary**

Thai Propoxide Co., Ltd.	-	-	421,984	421,984
Less losses recognised using the equity method in excess of the investment	-	-	(908)	(1,039)
Net	-	-	421,076	420,945

In 1997, the Company entered into an agreement to sell land to Thai Propoxide Co., Ltd. (a subsidiary) at the price of Baht 477 million, in consideration for a loan payable by August 2000, with interest of 16%. No payments of principal or interest were subsequently made by the subsidiary and consequently the Company deferred recording the gain on the sale land of Baht 40 million and interest income of Baht 155 million in income and ceased accrued interest. The deferred gain and interest income are disclosed as non-current liabilities in the statement of financial position of the separate financial statements.

The subsidiary used the land as collateral for a bank loan, the proceeds of which were subsequently loaned to the Company. In 2000, the subsidiary's bank loan was assigned to the Company. Subsequently, in 2011, the land has been released by the bank as collateral and the subsidiary has sold a part of land to the Company and repaid a part of the land loan to the Company of Baht 68 million.

At 31 December 2020, the outstanding amount of accounts receivable from the subsidiary from the sale of land total Baht 422 million (2019: Baht 422 million) and the deferred gain on the sale of Baht 35 million (2019: Baht 35 million) and deferred interest income of Baht 134 million (2019: Baht 134 million) in the statement of financial position of the separate financial statements.

Trade accounts payable - related parties

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries				
TPI Concrete Co., Ltd.	-	-	24	-
TPI Polene Power Public Co., Ltd.	-	-	3,190	4,585
TPI All Seasons Co., Ltd.	-	-	14,302	9,086
Polene Plastic Co., Ltd.	-	-	8,422	251,973
TPI Polene Bio Organics Co., Ltd.	-	-	5	16
Thai Nitrate Co., Ltd.	-	-	8,089	5,393
TPI Healthcare Co., Ltd.	-	-	8,792	7,919
TPI Bio Pharmaceuticals Co., Ltd.	-	-	2	7
Associate				
United Grain Industry Co., Ltd.	3,636	2,069	9	-
Thai Plastic Film Co., Ltd.	137,076	84,896	136,445	84,452
Thai Plastic Products Co., Ltd.	210,678	152,996	205,773	148,736
Total	351,390	239,961	385,053	512,167

	Interest rate		Separate financial statements			
	2019	2020	1 January 2020	Increase	Decrease	31 December 2020
(in thousand Baht)						
Short-term loans from related parties						
Subsidiaries						
TPI Polene Power Public Co., Ltd.	-	1.65	-	695,000	(695,000)	-
			-	695,000	(695,000)	-
Accrued interest payable			-	2,883	(2,883)	-
Total			-	697,883	(697,883)	-

Movements during the years ended 31 December of short-term loans to related parties were as follows:

(in thousand Baht)

Short-term loans from related parties	Consolidated		Separate	
	financial statements		financial statements	
Subsidiaries	2020	2019	2020	2019
At 1 January	-	-	695,000	43,873
Decrease	-	-	(695,000)	(43,873)
At 31 December	-	-	-	-

(in thousand Baht)

Payables and advances from related parties	Consolidated		Separate	
	financial statements		financial statements	
Subsidiaries	2020	2019	2020	2019
TPI Concrete Co., Ltd.	-	-	1,367	1,478
TPI Polene Power Public Co., Ltd.	-	-	911,237	569,442
TPI All Seasons Co., Ltd.	-	-	2,000	2,140
Polene Plastic Co., Ltd.	-	-	11	51
TPI Polene Bio Organics Co., Ltd.	-	-	2,903	1,488
TPI Healthcare Co., Ltd.	-	-	2,871	386
TPI Bio Pharmaceuticals Co., Ltd.	-	-	556	455
Associates				
BUI Life Insurance Public Co., Ltd.	1,017	243	993	243
United Grain Industry Co., Ltd.	2,382	2,530	-	-
Thai Plastic Film Co., Ltd.	683	585	633	547
Other related parties				
Pornchai Enterprise Co., Ltd.	803	760	443	401
Bangkok Union Insurance Public Co., Ltd.	34,213	5,560	13,043	4,867
Hong Yiah Seng Co., Ltd.	107	149	107	106
Rayong Forest Co., Ltd.	66	-	67	-
Total	39,271	9,827	936,231	581,604

(in thousand Baht)

Current portion of lease liabilities	Consolidated		Separate	
	financial statements		financial statements	
Subsidiaries	2020	2019	2020	2019
TPI Concrete Co., Ltd.	-	-	5,288	-
TPI Polene Bio Organics Co., Ltd.	-	-	3,290	-
Mondo Thai Co., Ltd.	-	-	143	-
Associates				
United Grain Industry Co., Ltd.	8,878	-	775	-
Other related parties				
Pornchai Enterprise Co., Ltd.	23,664	-	22,196	-
Hong Yiah Seng Co., Ltd.	1,556	-	537	-
Rayong Forest Co., Ltd.	11	-	11	-
Saraburi Ginning Mill Co., Ltd.	2,063	-	935	-
Leophairatana Enterprise Co., Ltd.	4,062	-	-	-
Hong Yiah Seng Real Estates and Investment Co., Ltd.	1,128	-	-	-
Total	41,362	-	33,175	-

	(in thousand Baht)			
Lease liabilities	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries				
Mondo Thai Co., Ltd.	-	-	15,031	-
Associates				
United Grain Industry Co., Ltd.	156,666	-	-	-
Other related parties				
Pornchai Enterprise Co., Ltd.	15,223	-	11,257	-
Hong Yiah Seng Co., Ltd.	795	-	1,458	-
Rayong Forest Co., Ltd.	1,458	-	1,431	-
Saraburi Ginning Mill Co., Ltd.	5,743	-	-	-
Leophairatana Enterprise Co., Ltd.	14,015	-	-	-
Hong Yiah Seng Real Estates and Investment Co., Ltd.	4,312	-	-	-
Total	198,212	-	29,177	-

Significant agreements with related parties

(a) Office building lease agreements

The Company and its subsidiary have long-term office building lease agreements with a related company. Previously, the initial lease term for each lease agreement was for 3 years, with the lease being renewable. In July 1999, the Company and a subsidiary entered into a 90 years office building lease agreement with a related company to replace the expired original office building lease agreements in which the Company and a subsidiary made one payment for the whole lease period (*the total rental for the 90 years term of the lease is Baht 40,000 per square meter, equivalent to a monthly rental, before discounting cash flows, of Baht 37 per square meter*). The annual rental is deducted from the prepaid rentals. Subsequently, on 24 July 2001, the Company and its subsidiary agreed to sign the amendments in addition to the existing office building lease agreements with a related company. The initial period of the lease is for 30 years, commencing from the original date on which the rentals of each respective agreement were prepaid. The related party warranted that the lease would be renewable for another 2 subsequent periods of 30 years under the same conditions, including rental fee as set out in the original agreements.

On 25 August 2006, the Company and its subsidiary registered the lease with the Land Department.

Should either party terminate the lease agreement, the unused prepaid rentals are refundable to the Companies. Both parties agreed in principle to execute a mortgage on the office building as security for the unused prepaid rentals. As at 31 December 2020, there was no mortgage agreement as security for the unused prepaid rentals, so the recoverability of prepaid rentals depends on the ability of the related company to repay.

(b) Electricity supply agreement

The Company entered into an electricity supply contract with a subsidiary company, to provide the waste heat to the subsidiary that will be used in the manufacturing process for electricity. The subsidiary company shall supply the electricity to the Company based on certain percentage as specified in the agreement. The agreement shall remain in full force and effect so long as, unless it is terminated by mutual agreement in writing of both parties.

(c) Office building services agreements

The Company and its subsidiaries entered into office building services agreements with related parties for 3 years. The details were as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Non-cancellable operating lease commitments				
Within one year	32,278	42,632	31,326	41,923
After one year but within five years	10,717	40,464	10,328	39,676
Total	42,995	83,096	41,654	81,599

Subsidiaries had made several land rental agreements with its related parties which specified that lessee has to decommission the assets from rental area at the end of contract, causing lessee to set up the decommissioning costs as at 31 December 2020 in amount of Baht 294.6 million (2019: Baht 286.1 million).

7 Cash and cash equivalents

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Cash on hand	3,576	16,143	2,703	15,277
Cash at banks - current accounts	32,200	20,151	20,474	6,575
Cash at banks - savings accounts	6,470,544	2,435,748	1,911,383	939,759
Cash at banks - savings accounts (Private funds)	896	13,516	10	10
Highly liquid short-term investments	150,663	258,287	100,358	983
Total	6,657,879	2,743,845	2,034,928	962,604

8 Inventories

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Finished goods	1,098,870	3,116,993	1,446,287	1,935,255
Work in process	4,154,549	4,632,290	2,157,430	4,309,508
Raw materials and chemicals	1,165,931	1,384,478	991,804	1,184,596
Packages	434,596	450,699	347,534	356,715
Oil and coal	511,214	1,127,884	424,555	1,032,484
Spare parts and general supplies	3,721,522	3,589,020	2,816,579	2,728,117
Goods in transit	406,634	272,581	402,833	223,802
Total	11,493,316	14,573,945	8,587,022	11,770,477
Less allowance for decline in value	(380,914)	(395,887)	(43,785)	(54,773)
Net	11,112,402	14,178,058	8,543,237	11,715,704
Inventories recognised in cost of sales of goods				
- Cost	24,952,074	28,439,441	20,208,339	24,348,038
- (Reversal of) write-down to net realisable value	(14,973)	(35,374)	(10,988)	(35,374)
Net	24,937,101	28,404,067	20,197,351	24,312,664

9 Investments in associates

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Associates				(Restated)
At 1 January - as reported	752,558	772,197	229,500	229,500
Impact of changes in accounting policy				
- Change in accounting policy for investments in associates in separate financial statements	-	-	523,058	542,697
At 1 January - restated	752,558	772,197	752,558	772,197
Share of profit (loss) of associates accounted for using equity method	56,321	(18,704)	56,321	(18,704)
Share of other comprehensive income (expense) of associates accounted for using equity method	(3,778)	(935)	(3,778)	(935)
At 31 December	805,101	752,558	805,101	752,558

The Group has not recognised loss relating to an investment in an indirect associate accounted for using the equity method where its share of loss exceeds the carrying amount of its investment. As at 31 December 2020, the Group's cumulative share of unrecognised loss was Baht 985 million (2019: Baht 985 million). The Group has no obligation in respect of this loss.

Investments in associates as at 31 December were as follows:

Consolidated financial statements									
	Type of business	Ownership interest		Paid-up capital		Cost		Equity	
		2020	2019	2020	2019	2020	2019	2020	2019
		(%)		(in thousand Baht)					
Associates									
BUI Life Insurance Public Co., Ltd.	Life insurance	25.00	25.00	500,000	500,000	125,000	125,000	116,535	86,695
United Grain Industry Co., Ltd.	Manufacture and sale of packaging	19.00	19.00	550,000	550,000	104,500	104,500	688,566	665,863
						229,500	229,500	805,101	752,558
Indirect associates									
Thai Special Steel Industry Public Co., Ltd.	Manufacture and sale of steel (in the process of registering the dissolution)	29.53	29.53	4,220,000	4,220,000	1,246,200	1,246,200	-	-
Thai Plastic Film Co., Ltd.	Manufacture and sale of packaging	19.00	19.00	40,000	40,000	-	-	-	-
Thai Plastic Products Co., Ltd.	Manufacture and sale of packaging	19.00	19.00	60,000	60,000	-	-	-	-
Total						1,475,700	1,475,700	805,101	752,558

		Separate financial statements							
	Type of business	Ownership interest		Paid-up capital		Cost		Equity	
		2020	2019	2020	2019	2020	2019	2020	2019
									(Restated)
		(<i>%)</i>		<i>(in thousand Baht)</i>					
Associates									
BUI Life Insurance Public Co., Ltd.	Life insurance	25.00	25.00	500,000	500,000	125,000	125,000	116,535	86,695
United Grain Industry Co., Ltd.	Manufacture and sale of packaging	19.00	19.00	550,000	550,000	104,500	104,500	688,566	665,863
						229,500	229,500	805,101	752,558

No dividend distribution from investments in associates held by the Group and the Company during years ended 31 December 2020 and 2019.

None of the Group's and the Company's associates are publicly listed and consequently do not have published price quotations.

All associates were incorporated in Thailand.

Immaterial associates

The following is summarised financial information for the Group's interest in immaterial associates based on the amounts reported in the Group's consolidated financial statements:

	(in thousand Baht)	
	2020	2019
Carrying amount of interests in immaterial associates	805,101	752,558
Group's share of:		
- Profit (loss) from continuing operations	56,321	(18,704)
- Other comprehensive income (expense)	(3,778)	(935)
- Total comprehensive income (expense)	52,543	(19,639)

10 Investments in subsidiaries

		(in thousand Baht)	
	Note	Separate financial statements	
		2020	2019 (Restated)
Subsidiaries			
At 1 January - as reported		12,443,762	12,444,474
Impact of changes in accounting policy			
- Change in accounting policy for investments in subsidiaries in separate financial statements	3(C)	12,147,793	11,023,347
At 1 January - restated		24,591,555	23,467,821
Acquisition of subsidiary		-	99,000
Share of profit of subsidiaries		1,971,783	3,128,976
Dividends income		(1,972,375)	(1,995,499)
Sale of investment		-	(99,712)
Losses recognised using the equity method in excess of the investment		320,679	21,814
Share of other comprehensive income of subsidiaries		(13)	(30,845)
At 31 December		24,911,629	24,591,555

Master Achieve (Thailand) Co., Ltd.

On 27 June 2019, the Company's Board of Directors's meeting passed the resolution to approve payment for increasing of share capital in Master Achieve (Thailand) Co., Ltd. with 100% paid up of 990,000 ordinary shares at par value of Baht 100 each, in the amount of Baht 99 million which was paid to the subsidiary in July 2019.

TPI Polene Power (International) Co., Ltd.

On 29 August 2019, the Company's Board of Directors's meeting passed the resolution to approve the sale of common share capital in TPI Polene Power (International) Co., Ltd. (formerly: Zenith International Power Co., Ltd.), the main objective is to restructure the shareholding of the Group to support business expansion. Thereafter, on 24 September 2019, the Company sold 999,980 shares or equivalent to 99.99% of the paid-up share capital at the price of Baht 105.99 per share, in the amount of Baht 105.99 million to a subsidiary and recognised gain on sale of investment in the amount of Baht 6.28 million in the separate financial statement, thereby become an indirect subsidiary of the Company.

Investments in subsidiaries as at 31 December 2020 and 2019, dividend income from those investments for the years then ended, were as follows:

Separate financial statements

Type of business	Ownership interest	Paid-up capital				Cost				Equity		Dividend	
		2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Direct subsidiaries													
TPI Concrete Co., Ltd.	99.99	99.99		2,000,000	2,000,000	1,999,999	1,999,999	1,664,654	1,421,116	-	-	-	-
TPI Polene Power Public Co., Ltd.	70.24	70.24		8,400,000	8,400,000	5,899,999	5,899,999	19,872,638	18,597,290	1,888,000	1,770,000		
TPI All Seasons Co., Ltd.	99.99	99.99		450,000	450,000	450,000	450,000	287,651	276,760	-	-	-	-
TPI Polene Bio Organics Co., Ltd.	99.99	99.99		3,300,000	3,300,000	2,654,400	2,654,400	1,668,657	1,768,849	-	-	-	-
TPI Refinery (1997) Co., Ltd.	99.99	99.99		1,300,000	1,300,000	1,299,620	1,299,620	-	1,292,297	-	-	-	-
Thai Propoxide Co., Ltd.	99.99	99.99		250	250	250	250	-	-	-	-	-	-
Thai Nitrate Co., Ltd.	99.99	99.99		468,750	468,750	784,409	784,409	1,292,544	1,111,813	84,375	187,500		
TPI Healthcare Co., Ltd.	99.99	99.99		5,050	5,050	4,950	4,950	6,387	3,310	-	-	-	-
TPI Commercial Co., Ltd.	99.94	99.94		100	100	-	-	-	-	-	-	-	-
TPI Service Co., Ltd.	95.10	95.10		4,600	4,600	4,457	4,457	9,973	7,566	-	-	-	-
Master Achieve (Thailand) Co., Ltd.	99.99	99.99		100,000	100,000	99,931	99,931	99,796	99,254	-	-	-	-
TPI Bio Pharmaceuticals Co., Ltd.	99.99	99.99		5,500	5,500	5,647	5,647	-	4,117	-	-	-	-
Indirect subsidiaries													
Mondo Thai Co., Ltd.	83.27	83.27		36,000	36,000	10,350	10,350	9,329	9,183	-	-	-	-
Polene Plastic Co., Ltd.	99.93	99.93		10,000	10,000	-	-	-	-	-	-	-	-
TPI Polene Power Investment Co., Ltd.	70.24	70.24		3,957	3,957	-	-	-	-	-	-	-	-
TPI Polene Power (Omnet) Co., Ltd.	70.23	70.23		187,500	187,500	-	-	-	-	-	-	-	-
TPI Polene Power (International) Co., Ltd.	70.23	70.23		100,000	100,000	-	-	-	-	-	-	37,999	-
(Formerly Zenith International Power Co., Ltd.)													
TPI Deep Sea Port Co., Ltd.	70.23	70.23		25,000	25,000	-	-	-	-	-	-	-	-
TPI Olefins Co., Ltd.	70.23	70.23		1,000	1,000	-	-	-	-	-	-	-	-
TPI Polene Power (Songkhla) Co., Ltd.	70.22	70.22		1,000	1,000	-	-	-	-	-	-	-	-
TPI Solar Power Co., Ltd.	70.22	70.22		1,000	1,000	-	-	-	-	-	-	-	-
TPI Wind Power Co., Ltd.	70.22	70.22		1,000	1,000	-	-	-	-	-	-	-	-
Total						13,214,012	13,214,012	24,911,629	24,591,555	1,972,375	1,995,499		

Disaggregation of finance cost are given in note 24(d).

All subsidiaries were incorporated and operated in Thailand, except TPI Polene Power Investment Co., Ltd. which was incorporated and operated in Cambodia. As at 31 December 2020, the Company is in the process of dissolution and liquidation.

None of the Company's subsidiaries are publicly listed and consequently do not have published price quotations, except for TPI Polene Power Public Co., Ltd. which is listed on the Stock Exchange of Thailand. Based on the closing price of Baht 4.28 at 31 December 2020 (2019: Baht 4.40), the fair value of the Company's investment in TPI Polene Power Public Co., Ltd. was Baht 25,252 million (2019: Baht 25,960 million).

The following table summarises the financial information of the subsidiaries 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.

	<i>(in thousand Baht)</i>					
	TPI Concrete Co.,Ltd.		TPI Polene Power Public Co.,Ltd.		Thai Nitrate Co.,Ltd.	
	2020	2019	2020	2019 (Restated)	2020	2019
Revenue	5,029,337	4,911,723	11,444,002	10,905,825	1,005,863	1,138,375
Profit from continuing operations	241,119	(152,175)	4,505,825	4,606,808	248,062	242,277
Other comprehensive income	(119)	(1,236)	(18)	(24,857)	-	-
Total comprehensive income (100%)	241,000	(153,411)	4,505,807	4,581,951	1,253,925	1,378,246
Total comprehensive income of the Group's interest	241,000	(153,411)	3,164,878	3,218,362	1,253,925	1,378,246
Elimination of unrealised profit on downstream sales	(2,134)	(2,342)	(993,810)	(1,210,502)	-	-
Group's share of total comprehensive income	238,866	(155,752)	2,171,068	2,007,860	1,253,925	1,378,246
Current assets	1,160,484	1,176,164	7,158,067	6,667,086	881,602	712,578
Non-current assets	2,197,819	1,868,205	36,617,085	31,185,488	470,190	405,376
Current liabilities	(1,417,650)	(1,381,372)	(5,784,194)	(2,334,269)	(134,053)	(71,082)
Non-current liabilities	(276,311)	(239,655)	(9,062,820)	(8,407,974)	(51,888)	(44,708)
Net assets (100%)	1,664,342	1,423,342	28,928,138	27,110,331	1,165,851	1,002,164
Group's share of net assets	1,664,342	1,423,342	20,319,124	19,042,296	1,165,851	1,002,164
Elimination of unrealised profit on downstream sales	312	(2,226)	(446,486)	(445,006)	126,693	109,649
Carrying amount of interest in subsidiaries	1,664,654	1,421,116	19,872,638	18,597,290	1,292,544	1,111,813

Immaterial subsidiaries

The following is summarised financial information for the Group's interest in immaterial subsidiaries based on the amounts reported in the Group's consolidated financial statements:

	<i>(in thousand Baht)</i>	
	2020	2019
Carrying amount of interest in Immaterial subsidiaries	2,081,793	3,461,336
Group's share of:		
- Profit (loss) from continuing operations	(1,692,095)	(132,238)
- Other comprehensive income (expense)	6	15
- Total comprehensive income (expense)	(1,692,089)	(132,223)

11 Non-controlling interests

The following table summarises the information relating to each of the Group's subsidiaries that has a material non-controlling interest, before any intra-group eliminations:

	2020		2019	
<i>As at 31 December</i>	TPI Polene Power Public Co.,Ltd.	Total	TPI Polene Power Public Co.,Ltd. (Restated)	Total
Non-controlling interest percentage	29.76%		29.76%	
Current assets	7,158,067		6,667,086	
Non-current assets	36,617,085		31,185,488	
Current liabilities	(5,784,194)		(2,334,269)	
Non-current liabilities	(9,062,820)		(8,407,974)	
Net assets	28,928,138		27,110,331	
Carrying amount of non-controlling interest	8,609,014	8,609,014	8,068,035	8,068,035
Other individually immaterial subsidiaries		8,775		8,299
Total		8,617,789		8,076,334

(in thousand Baht)

For the year ended 31 December

	2020		2019	
	TPI Polene Power Public Co., Ltd.	Total	TPI Polene Power Public Co., Ltd. (Restated)	Total
Revenue	11,444,002		10,905,825	
Profit	4,505,825		4,606,808	
Other comprehensive income	(18)		(24,857)	
Total comprehensive income	4,505,807		4,581,951	
Total comprehensive income allocated to non-controlling interest	1,340,928	1,340,928	1,363,589	1,363,589
Other individually immaterial subsidiaries		87		7,459
Total		1,341,015		1,371,048
Cash flows from operating activities	1,434,564		1,359,105	
Cash flows from investing activities	(1,454,024)		(1,720,599)	
Cash flows from financing activities				
(Dividends to non-controlling interest of Baht 800 million (2019: Baht 750 million)).	346,999		401,293	
Others	127		31,444	
Net increase (decrease) in cash and cash equivalents	327,666		71,243	

12 Long-term investments in related parties

	Type of business	Relationship	Ownership interest		Paid-up capital		Consolidated and Separate financial statements	
			2020	2019	2020	2019	2020	2019
			(%)		(in thousand Baht)			
Related parties								
Pornchai Enterprise Co., Ltd.	Real estate and service rental	Shareholder	0.65	0.65	4,599,920	4,599,920	45,653	45,653
Total							45,653	45,653

13 Investment properties

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Cost				
At 1 January	390,394	390,394	74,044	74,044
Additions	133,819	-	-	-
Disposals	(14,000)	-	-	-
At 31 December	510,213	390,394	74,044	74,044
Depreciation and impairment losses				
At 1 January	17,644	16,706	-	-
Depreciation charge for the year	300	938	-	-
Disposals	(14,000)	-	-	-
At 31 December	3,944	17,644	-	-
Net book value				
At 1 January	372,750	373,688	74,044	74,044
At 31 December	506,269	372,750	74,044	74,044

The fair value of investment properties of the Group and the Company as at 31 December 2020 of Baht 964 million and Baht 75 million, respectively (2019: Baht 694 million and Baht 75 million, respectively) was determined by independent professional valuers, at open market values on an existing use basis. The fair value of measurement for investment property has been categorised as a Level 3 fair value.

Investment properties include land for rent, freehold land and condominiums.

Measurement of fair value

Fair value hierarchy

The fair value of investment property was determined by external, independent property valuers, having appropriate recognised professional qualifications and recent experience in the location and category of the property being valued. The valuers provide the fair value of the Group's investment property portfolio on a regular basis.

The fair value measurement of all investment property has been categorised as level 3 fair value based on the inputs to the valuation technique used.

Valuation technique and significant unobservable inputs

The following table shows the valuation technique used in measuring the fair value of investment property, as well as the significant unobservable inputs used.

Valuation technique	Significant Unobservable inputs
<i>Discounted cash flows</i> ; The valuation model considers the present value of net cash flows to be generated from the property, taking into account expected rental growth rate. The expected net cash flows are discounted using risk-adjusted discount rates. Among other factors, the discount rate estimation considers the quality of its location (prime vs secondary), tenant credit quality and lease terms.	<ul style="list-style-type: none">• Contractually agreed lease income over the remaining period.• Risk-adjusted discount rates
<i>Market approach</i>	The adjusted quoted price and the actual selling price of comparable investment properties.

14 Property, plant and equipment

(in thousand Baht)

Consolidated financial statements

Cost

	Land and land improvement	Buildings and structures	Machinery and equipment for production	Tools and factory equipment	Office furniture, fixture and equipment	Vehicle	Major spare parts	Exploration assets	Assets under construction and installation	Total
At 1 January 2019	4,964,800	17,004,731	72,561,898	8,500,744	655,672	2,444,027	472,303	1,244,758	10,534,427	118,383,360
Additions	4,233,450	94,575	364,938	308,200	31,728	17,583	-	119,684	4,805,533	9,979,691
Transfers - net	-	1,034,708	9,289,814	42,290	8,439	767	(21,002)	-	(10,355,016)	-
Disposals	-	(18,040)	(127,126)	(23,785)	(1,146)	(30,218)	-	-	-	(200,315)
At 31 December 2019 and 1 January 2020	9,198,250	18,115,974	82,089,524	8,827,449	694,693	2,432,159	451,301	1,364,442	4,989,944	128,162,736
Additions	4,005,750	6,433	293,881	359,471	28,599	3,173	84,462	237,378	6,216,394	11,235,541
Transfers - net	-	73,708	1,638,008	54,662	4,867	-	(2,688)	-	(1,768,557)	-
Disposals	(296)	(17,023)	(229,540)	(8,496)	(26,333)	(50,797)	-	-	-	(332,485)
At 31 December 2020	13,203,704	18,179,092	83,791,873	9,233,086	701,826	2,384,535	533,075	1,601,820	9,436,781	139,065,792

Depreciation and impairment losses

At 1 January 2019	140	6,070,872	25,427,511	5,079,363	486,931	1,858,093	-	-	4,532	38,927,442
Depreciation charge for the year	224	532,684	2,071,508	439,223	40,041	63,640	-	-	-	3,147,320
Disposals	-	(14,662)	(114,298)	(5,834)	(1,114)	(28,419)	-	-	-	(164,327)
At 31 December 2019 and 1 January 2020	364	6,588,894	27,384,721	5,512,752	525,858	1,893,314	-	-	4,532	41,910,435
Depreciation charge for the year	224	532,829	1,864,365	437,060	40,681	63,498	-	-	-	2,938,677
Impairment loss	-	-	-	-	-	-	-	1,601,820	-	1,601,820
Disposals	-	(14,851)	(215,482)	(5,222)	(26,326)	(48,249)	-	-	-	(310,130)
At 31 December 2020	588	7,106,872	29,033,624	5,944,590	540,213	1,908,563	-	1,601,820	4,532	46,140,802

Net book value

At 31 December 2019	9,197,886	11,527,080	54,704,803	3,314,697	168,835	538,845	451,301	1,364,442	4,984,412	86,252,301
At 31 December 2020	13,203,116	11,072,220	54,758,249	3,288,496	161,613	475,972	533,075	-	9,432,249	92,924,990

		Separate financial statements							(in thousand Baht)	
		Land and land improvement	Buildings and structures	Machinery and equipment for production	Tools and factory equipment	Office furniture, fixture and equipment	Vehicle	Major spare parts	Assets under construction and installation	Total
Cost										
At 1 January 2019		2,984,494	15,195,925	51,273,753	8,195,444	547,901	2,407,720	396,165	1,504,158	82,505,560
Additions		109,263	-	6,771	282,252	17,496	17,645	-	1,928,412	2,361,839
Transfers - net		-	347,461	691,472	25,905	2,150	767	(44,415)	(1,023,340)	-
Disposals		-	-	(16,028)	(21,683)	(1,116)	(30,213)	-	-	(69,040)
At 31 December 2019 and 1 January 2020		3,093,757	15,543,386	51,955,968	8,481,918	566,431	2,395,919	351,750	2,409,230	84,798,359
Additions		1,977	-	6,528	333,675	15,788	3,057	-	4,544,826	4,905,851
Transfers - net		-	28,628	1,377,509	47,034	1,673	-	(64,280)	(1,390,564)	-
Disposals		(296)	-	(23,591)	(8,205)	(21,105)	(50,796)	-	(2,907)	(106,900)
At 31 December 2020		3,095,438	15,572,014	53,316,414	8,854,422	562,787	2,348,180	287,470	5,560,565	89,597,310
Depreciation and impairment losses										
At 1 January 2019		-	5,477,327	19,831,009	4,912,251	401,143	1,823,279	-	-	32,445,009
Depreciation charge for the year		-	412,262	1,081,501	413,596	32,507	60,122	-	-	1,998,988
Disposals		-	-	(3,721)	(3,934)	(1,100)	(28,414)	-	-	(37,169)
At 31 December 2019 and 1 January 2020		-	5,889,589	20,908,789	5,321,913	432,550	1,854,987	-	-	34,407,828
Depreciation charge for the year		-	416,432	827,994	414,180	31,614	59,968	-	-	1,750,188
Disposals		-	-	(9,171)	(4,942)	(21,098)	(48,250)	-	-	(83,461)
At 31 December 2020		-	6,306,021	21,727,612	5,731,151	443,066	1,866,705	-	-	36,074,555
Net book value										
At 31 December 2019		3,093,757	9,653,797	31,047,179	3,160,005	133,881	540,932	351,750	2,409,230	50,390,531
At 31 December 2020		3,095,438	9,265,993	31,588,802	3,123,271	119,721	481,475	287,470	5,560,565	53,522,755

The gross amount of the Group and the Company's fully depreciated plant and equipment that was still in use as at 31 December 2020 amounted to Baht 12,515 million and Baht 9,438 million, respectively (2019: Baht 12,649 million and Baht 9,263 million, respectively).

Security

At 31 December 2020 the Company's land, buildings, machinery and equipment with a net book value of Baht 5,363 million. (2019: Baht 5,259 million) are mortgaged or pledged as collateral for the long-terms loan.

Capitalised borrowing costs relating to the acquisition of the construction of new factory of the Group and the Company as at 31 December 2020 are Baht 311 million and Baht 196 million, respectively (2019: Baht 108 million and Baht 47 million, respectively), with capitalisation in the consolidated and separate financial statements of 1.19% - 5.20% (2019: 2.1% - 5.3%).

Impairment assessment for property plant and equipment and loan to

Two subsidiaries of the Company; TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. has continuous loss in operation which indicated the impairment in property, plant and equipment in consolidated financial statement and loan to in separate financial statement. The Group and the Company have assessed the recoverable amount base on value in use; determined by discounting future cash flows to be generated from the continuing use of assets. The key assumptions used to determine recoverable amount included sale volume and selling price, long-term growth rate derived from expectations of future outcomes taking into account past experience, adjusted for anticipated revenue growth and discount rate referred to weighted average cost of capital (WACC) of TPI Polene Bio Organics Co., Ltd. and TPI All Seasons Co., Ltd. at 8.33% and 10.05%, respectively (2019: 8.10% and 10.05%, respectively). Base on impairment assessment, the recoverable amount was estimated to be higher than its carrying amount and no impairment was required to the Company's financial statements. Increasing in discount rate and decreasing in long-term growth rate could cause the carrying amount to exceed the recoverable amount.

Exploration assets

For the exploration assets which the net book value as at 31 December 2019 of Baht 1,388 million. In June 2020, a subsidiary has granted an extension of time until January 2021 for petroleum exploration. Base on the study of the consulting company and the assessment of a subsidiary, the area has high petroleum potential. If a subsidiary continues to explore and drill for the well, it is highly probable to find petroleum.

In the 4th quarter, the subsidiary has assessed petroleum exploration drilling results, which found but insufficient reserves for commercial development, and therefore cancelled all petroleum exploration. The Group has recognised loss on impairment of the petroleum exploration assets in the amount of Baht 1,602 million as expense in the consolidated financial statement for the year ended 31 December 2020.

15 Lease

As a lessee

At 31 December 2020

Right-of-use assets

	Consolidated financial statements	(in thousand Baht) Separate financial statements
Land	257,183	45,654
Buildings	211,326	161,230
Equipment	7,243	7,243
Vehicles	143,484	110,863
Total	619,236	324,990

In 2020, additions to the right-of-use assets of the Group was increased Baht 138 million and Baht 92 million, respectively.

The Group lease a number of land, buildings and vehicles for 2-30 years, with extension options at the end of lease term. The rental is payable monthly as specified in the contract

Extension options

Some property leases contain extension options exercisable by the Group up to one year before the end of the non-cancellable contract period. Where practicable, the Group seeks to include extension options in new leases to provide operational flexibility. The extension options held are exercisable only by the Group and not by the lessors. The Group assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Group reassesses whether it is reasonably certain to exercise the options if there is a significant event or significant changes in circumstances within its control.

For the year ended 31 December

			(in thousand Baht)	
	Consolidated financial statements		Separate financial statements	
Amounts recognised in profit or loss	2020	2019	2020	2019
Depreciation of right-of-use assets:				
- Land	40,481	-	2,115	-
- Buildings	39,884	-	37,292	-
- Equipment	2,426	-	2,426	-
- Vehicles	62,741	-	50,762	-
Interest on lease liabilities	17,731	-	7,265	-
Expenses relating to short-term leases	99,633	-	65,630	-
Lease expense	-	252,613	-	170,601
Contingent rent expense	-	541,609	-	276,957

In 2020, total cash outflow for leases of the Group and the Company were Baht 252.81 million and Baht 158.83 million, respectively.

As a lessor

The leases comprise a number of land, machinery and trucks under operating leases. Each of the leases contains an initial non-cancellable period of 1 to 7 years. Subsequent renewals are negotiated with the lessee. Rental income of land and truck leases is fixed under the contracts. For machinery leases, the rental income is machinery's production-based or minimum rental fee as specified.

			(in thousand Baht)	
	Consolidated financial statements		Separate financial statements	
Maturity of operating lease receivables presented in "other receivables"				
At 31 December 2020				
1 st year		72,766		9,436
2 nd year		72,600		3,881
3 rd year		72,600		320
4 th year		46,365		-
5 th year		4,400		-
Total		268,731		13,637
			(in thousand Baht)	
	Consolidated financial statements		Separate financial statements	
Minimum lease payments under non-cancellable operating lease are receivable				
At 31 December 2019				
Within 1 year		72,600		4,245
1-5 years		264,165		13,637
After 5 years		4,400		-
Total		341,165		17,882

16 Intangible assets

(in thousand Baht)

	Consolidated financial statements				
	Cost of raw resources and cost of concessions	Software licenses	Development assets	Others	Total
Cost					
At 1 January 2019	736,187	59,329	38,628	-	834,144
Additions	1,000	54	-	-	1,054
At 31 December 2019 and 1 January 2020	737,187	59,383	38,628	-	835,198
Additions	274,501	-	2,577	128,016	405,094
At 31 December 2020	1,011,688	59,383	41,205	128,016	1,240,292
Amortisation					
At 1 January 2019	593,248	45,391	19,335	-	657,974
Amortisation for the year	31,181	1,772	7,721	-	40,674
At 31 December 2019 and 1 January 2020	624,429	47,163	27,056	-	698,648
Amortisation for the year	30,371	1,750	7,858	-	39,979
At 31 December 2020	654,800	48,913	34,914	-	738,627
Net book value					
At 31 December 2019	112,758	12,220	11,572	-	136,550
At 31 December 2020	356,888	10,470	6,291	128,016	501,665

(in thousand Baht)

	Separate financial statements				
	Cost of raw resources and cost of concessions	Software licenses	Development assets	Others	Total
Cost					
At 1 January 2019	736,187	59,329	38,628	-	834,144
Additions	1,000	54	-	-	1,054
At 31 December 2019 and 1 January 2020	737,187	59,383	38,628	-	835,198
Additions	274,501	-	2,577	120,000	397,078
At 31 December 2020	1,011,688	59,383	41,205	120,000	1,232,276
Amortisation					
At 1 January 2019	593,248	45,391	19,335	-	657,974
Amortisation for the year	31,181	1,772	7,721	-	40,674
At 31 December 2019 and 1 January 2020	624,429	47,163	27,056	-	698,648
Amortisation for the year	30,371	1,750	7,858	-	39,979
At 31 December 2020	654,800	48,913	34,914	-	738,627
Net book value					
At 31 December 2019	112,758	12,220	11,572	-	136,550
At 31 December 2020	356,888	10,470	6,291	120,000	493,649

17 Interest-bearing liabilities

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Current				
Short-term loans from financial institutions				
- Unsecured	1,314,807	2,939,529	1,075,182	2,607,863
Current portion of long-term loans from financial institutions				
- Secured	179,343	176,462	179,343	176,462
- Unsecured	1,428,571	1,428,571	1,428,571	1,428,571
Current portion of debentures	17,180,000	7,205,000	13,180,000	7,205,000
Current portion of lease liabilities (2019: Finance lease liabilities)	132,369	-	83,553	-
Total current interest-bearing liabilities	20,235,090	11,749,562	15,946,649	11,417,896
Non-current				
Long-term loans from financial institutions				
- Secured	380,711	555,733	380,711	555,733
- Unsecured	1,000,000	2,428,571	1,000,000	2,428,571
Debentures	40,506,200	38,495,000	32,744,200	30,675,000
Lease liabilities	323,626	-	120,815	-
Total non-current interest bearing liabilities	42,210,537	41,479,304	34,245,726	33,659,304
Total	62,445,627	53,228,866	50,192,375	45,077,200

The periods to maturity of interest-bearing liabilities as at 31 December were as follows:

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Within one year	20,235,090	11,749,562	15,946,649	11,417,896
After one year but within five years	42,031,589	38,479,304	34,210,967	30,659,304
After five years	178,948	3,000,000	34,759	3,000,000
Total	62,445,627	53,228,866	50,192,375	45,077,200

Secured interest-bearing liabilities as at 31 December were secured on the following net book value assets:

	Note	Consolidated and Separate	
		financial statements	
		2020	2019
Assets pledged as security for liabilities as at 31 December			
Land and buildings		1,278,911	1,355,480
Machinery and equipment		4,083,826	3,903,090
Total	14	5,362,737	5,258,570

As at 31 December 2020 the Group and the Company had unutilised credit facilities totalling Baht 153 million and Baht 108 million, respectively (2019: Baht 153 million and Baht 108 million, respectively).

Loan from financial institutions

On 22 November 2018, the Company entered into a loan agreement with a local financial institution for working capital and / or to repay the debt of the Company without collateral of Baht 3,000 million for a period of 3.5 years with equal repayment every 6 months from the first drawdown date. Interest rate is as specified in the contract. The loan agreement stipulates certain conditions that the Company must comply with, such as maintaining certain financial ratios, maintaining of percentage of shares held in a subsidiary and certain claims. As at 31 December 2020, loans from the said financial institution amounted of Baht 1,285 million (2019: Baht 2,142 million).

On 26 June 2019, the Company entered into a loan agreement with a local financial institution for working capital and / or to repay the debt of the Company without collateral of Baht 2,000 million for a period of 3.5 years with equal repayment every 6 months from the first drawdown date. Interest rate is as specified in the contract. The loan agreement stipulates certain conditions that the Company must comply with, such as maintaining certain financial ratios, maintaining of percentage of shares held in a subsidiary and certain claims. As at 31 December 2020, loans from the said financial institution amounted of Baht 1,143 million (2019: Baht 1,714 million).

In addition, on 27 August 2019, the Company entered into a loan agreement with a local financial institution to repay the debt of the Company with collateral of Baht 728 million for a period of 5 years with equal repayment every 6 months from the first drawdown date. The first installment is due from August 2019. Interest rate is as specified in the contract. The loan agreement stipulates certain conditions that the Company must comply with, such as maintaining certain financial ratios, maintaining of percentage of shares held in a subsidiary and certain claims. As at 31 December 2020, loans from the said financial institution amounted of Baht 509 million (2019: Baht 655 million).

Debentures

As at 31 December 2020, the Group and the Company had the unsecured, unsubordinated debentures in registered form with debentures holders' representative, payable quarterly totalling Baht 57,686 million and Baht 45,924 million, respectively (2019: Baht 45,700 million and Baht 37,880 million, respectively) as follows:

Issued Date	Consolidated financial statements						Interest rate (% p.a.)	Term
	The period to maturity within one year		The period to maturity over one year		Total			
	2020	2019	2020	2019	2020	2019		
	(in thousand Baht)							
22 January 2015	-	3,000,000	-	-	-	3,000,000	5.20	5 years
5 August 2015	-	2,205,000	-	-	-	2,205,000	4.65	5 years
5 August 2015	3,580,000	-	-	3,600,000	3,580,000	3,600,000	4.90	6 years
5 August 2015	-	-	3,848,000	4,000,000	3,848,000	4,000,000	5.20	7 years
1 April 2016	1,600,000	-	-	1,600,000	1,600,000	1,600,000	4.35	5 years
1 April 2016	-	-	1,200,000	1,200,000	1,200,000	1,200,000	4.60	6 years
1 April 2016	-	-	2,645,000	2,645,000	2,645,000	2,645,000	4.80	7 years
7 July 2017	-	2,000,000	-	-	-	2,000,000	3.50	3 years
26 April 2018	8,000,000	-	-	8,000,000	8,000,000	8,000,000	3.30	3 years
28 November 2018	4,000,000	-	-	4,000,000	4,000,000	4,000,000	3.90	3 years
11 January 2019	-	-	3,530,000	3,530,000	3,530,000	3,530,000	4.10	3 years
1 March 2019	-	-	100,000	100,000	100,000	100,000	3.80	2 years 10 months 30 days
11 July 2019	-	-	2,820,000	2,820,000	2,820,000	2,820,000	3.90	3 years 6 months
11 July 2019	-	-	2,988,000	3,000,000	2,988,000	3,000,000	4.90	5 years 6 months
9 August 2019	-	-	4,000,000	4,000,000	4,000,000	4,000,000	3.50	3 years 3 months
16 January 2020	-	-	4,382,700	-	4,382,700	-	3.50	3 years
2 July 2020	-	-	4,127,000	-	4,127,000	-	4.25	3 years 9 months
19 August 2020	-	-	3,944,000	-	3,944,000	-	3.90	3 years 11 months
5 November 2020	-	-	3,515,300	-	3,515,300	-	4.25	4 years
5 November 2020	-	-	3,410,700	-	3,410,700	-	4.50	5 years
Total	17,180,000	7,205,000	40,506,200	38,495,000	57,686,200	45,700,000		

Separate financial statements

Issued Date	The period to maturity within one year		The period to maturity over one year		Total	Interest rate (% p.a.)	Term
	2020	2019	2020	2019			
			(in thousand Baht)				
			2020	2019			
22 January 2015	-	3,000,000	-	-	3,000,000	5.20	5 years
5 August 2015	-	2,205,000	-	-	2,205,000	4.65	5 years
5 August 2015	3,580,000	-	-	3,600,000	3,580,000	4.90	6 years
5 August 2015	-	-	3,850,000	4,000,000	3,850,000	5.20	7 years
1 April 2016	1,600,000	-	-	1,600,000	1,600,000	4.35	5 years
1 April 2016	-	-	1,200,000	1,200,000	1,200,000	4.60	6 years
1 April 2016	-	-	2,645,000	2,645,000	2,645,000	4.80	7 years
7 July 2017	-	2,000,000	-	-	2,000,000	3.50	3 years
26 April 2018	8,000,000	-	-	8,000,000	8,000,000	3.30	3 years
11 January 2019	-	-	3,530,000	3,530,000	3,530,000	4.10	3 years
1 March 2019	-	-	100,000	100,000	100,000	3.80	2 years 10 months 30 days
11 July 2019	-	-	3,000,000	3,000,000	3,000,000	3.90	3 years 6 months
11 July 2019	-	-	2,988,000	3,000,000	3,000,000	4.90	5 years 6 months
9 August 2019	-	-	4,000,000	4,000,000	4,000,000	3.50	3 years 3 months
16 January 2020	-	-	4,382,700	-	4,382,700	3.50	3 years
2 July 2020	-	-	4,127,000	-	4,127,000	4.25	3 years 9 months
5 November 2020	-	-	3,515,300	-	3,515,300	4.25	4 years
5 November 2020	-	-	3,410,700	-	3,410,700	4.50	5 years
Total	13,180,000	7,205,000	32,744,200	30,675,000	45,924,200		
					37,880,000		

18 Trade accounts payable

		(in thousand Baht)			
	Note	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Related parties	6	351,390	239,961	385,053	512,167
Other parties		2,526,291	2,295,649	2,068,938	1,795,315
Total		2,877,681	2,535,610	2,453,991	2,307,482

19 Other payables

		(in thousand Baht)			
		Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Accrued expenses		667,814	949,142	468,942	719,179
Deposit from sales		389,186	358,135	320,800	289,550
Guarantee and deposits		306,415	296,554	297,060	286,754
Retention payable		467,330	1,116,450	53,606	51,057
Machine Payable		328,843	386,971	161,310	22,158
Others		721,242	627,524	447,238	434,197
Total		2,880,830	3,734,776	1,748,956	1,802,895

20 Non-current provisions for employee benefits

Non-current provisions for employee benefits		(in thousand Baht)			
		Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Non-current provision for:					
Post-employment benefits					
	Defined benefit plan	2,326,482	2,337,557	1,956,682	1,970,539

Defined benefit plan

The Group and the Company 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 defined benefit plans expose the Group to actuarial risks, such as longevity risk, interest rate risk and market (investment) risk.

expose the group to actuarial risks, such as longevity risk, interest rate risk and market (investment) risk.

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Present value of the defined benefit obligations				
At 1 January	2,337,557	1,541,170	1,970,539	1,298,077
Include in profit or loss:				
Current service cost and interest on obligation	32,751	108,906	23,466	83,125
Past service cost	-	502,617	-	428,925
Included in other comprehensive income				
Actuarial losses	-	245,792	-	207,436
Other				
Benefit paid	(43,826)	(60,928)	(37,323)	(47,024)
At 31 December	2,326,482	2,337,557	1,956,682	1,970,539

	(%)			
<i>Principal actuarial assumptions</i>	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Discount rate	1.72 - 2.06	1.88 - 2.05	1.72 - 2.00	1.88 - 2.01
Future salary growth	2.28 - 4.61	4.17 - 7.64	3.12 - 4.61	5.15 - 7.64

Assumptions regarding future mortality have been based on published statistics and mortality tables.

At 31 December 2020, the weighted-average duration of the defined benefit obligation was 22 years (2019: 22 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.

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	Increase	Decrease	Increase	Decrease
31 December 2020				
Discount rate (1% movement)	(218,142)	257,199	(186,153)	220,857
Future salary growth (1% movement)	223,415	(193,070)	190,741	(165,378)
31 December 2019				
Discount rate (1% movement)	(245,820)	293,809	(204,195)	243,999
Future salary growth (1% movement)	253,303	(218,331)	210,559	(181,483)

21 Share capital

	Par value per share (in Baht)	2020		2019	
		Number	Amount (thousand shares / in thousand Baht)	Number	Amount
Authorised					
At 31 December					
- ordinary shares	1	<u>23,805,500</u>	<u>23,805,500</u>	<u>23,805,500</u>	<u>23,805,500</u>
Issued and paid-up					
At 1 January		19,180,000	19,180,000	20,190,000	20,190,000
- ordinary shares					
Reduction of shares	1	-	-	(1,009,500)	(1,009,500)
At 31 December					
- ordinary shares	1	<u>19,180,500</u>	<u>19,180,500</u>	<u>19,180,500</u>	<u>19,180,500</u>

22 Treasury shares

At the Board of Directors meeting held on 30 January 2020, it approved the Company's share repurchase for financial management purposes scheme, the maximum amount for the share repurchase is not greater than Baht 800 million, number of shares repurchased 383.61 million shares, at par value Baht 1 per share, or representing 2% of the total paid-up capital. The repurchase period has started from 14 February 2020 to 13 August 2020. In the third quarter, the Company has completely repurchased the shares under the program of 383.61 million shares at a total cost of Baht 453.53 million.

In December 2020, the Company has sold 164 million treasury shares totaling Baht 293.73 million, consisting of the cost of the repurchased treasury shares calculated by the weighted average method in the amount of Baht 193.89 million and surpluses on the sale of treasury shares (Surplus on treasury shares) in the amount of Baht 99.84 million, presented as a separate category within equity.

As at 31 December 2020, the Company's treasury shares has remained 219.61 million shares at a total cost of Baht 259.64 million.

23 Reserves

Reserves comprise:

Appropriations of profit and retained earnings

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.

Treasury shares reserve

The treasury shares reserve represents the amount appropriated from retained earnings equal to the cost of the Company's own shares held by the Company. The treasury shares reserve is not available for dividend distribution.

Other components of equity

Currency translation differences

The currency translation differences account within equity comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

Fair value reserve of 2020

The fair value reserve comprise:

- the cumulative net change in the fair value of equity securities designated at FVOCI; and
- the cumulative net change in fair value of debt securities at FVOCI until the assets are derecognised or reclassified. This amount is adjusted by the amount of loss allowance.

Fair value reserve of 2019

The fair value changes in available-for-sale investments comprises the cumulative net change in the fair value of available-for-sale investments until the investments are derecognised or impaired.

24 Segment information and disaggregation of revenue

Management determined that the Group has four reportable segments which are the Group's strategic divisions for different products and services, and are managed separately because they require different technology and marketing strategies. The following summary describes the operations in each of the Group's reportable segments.

- Construction Materials
- Petrochemical & Chemicals
- Energy & Utilities
- Agriculture

Each segment's performance is measured based on segment profit before tax, as included in the internal management reports that are reviewed by the Group's CODM. Segment profit before tax is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.

(a) Reportable segment results

(in thousand Baht)

	Consolidated financial statements						Reportable segment profit (loss) before interest, tax, depreciation, and amortisation	
	Revenue from external customers		Inter-segment revenue		Total reportable segment revenue		2020	2019
	2020	2019	2020	2019	2020	2019		
Construction Materials	17,468,305	20,670,418	8,984,019	10,667,876	26,452,324	31,338,294	1,654,558	484,845
Petrochemical & Chemicals	7,616,357	7,901,438	5,926,992	7,020,702	13,543,349	14,922,140	1,988,978	1,516,001
Energy & Utilities	9,072,251	8,364,041	2,047,099	2,207,160	11,119,350	10,571,201	5,693,516	5,540,471
Agriculture	118,857	104,666	140,796	135,302	259,653	239,968	(22,506)	(29,977)
Total	34,275,770	37,040,563	17,098,906	20,031,040	51,374,676	57,071,603	9,314,546	7,511,340
Other gain (loss)							(160)	1,155
Finance costs							(2,014,903)	(1,959,023)
Depreciation and amortisation							(3,124,488)	(3,189,045)
Impairment loss of assets							(1,601,820)	-
Others							192,348	447,801
Share of profit (loss) of associates accounted for using equity method							56,321	(18,704)
Elimination of inter-segment (profit) loss							(57,003)	(50,481)
Profit before income tax expense for the year							2,764,841	2,743,043

Timing of reportable segment revenue recognition of the Group is at a point in time.

For the year ended 31 December

	(in thousand Baht)	
	Consolidated financial statements	
	Reportable segment profit	
	(loss) before tax	
	2020	2019
Construction Materials	(1,582,155)	(2,725,187)
Petrochemical & Chemicals	1,775,987	1,304,341
Energy & Utilities	4,628,005	4,708,789
Agriculture	(93,102)	(98,014)
Total	4,728,735	3,189,929
Impairment loss of assets	(1,601,820)	-
Other gains (losses)	24,221	(43,430)
Finance costs for investment	(387,876)	(370,491)
Elimination of inter-segment (profit) loss	1,581	(32,965)
Profit (loss) before income tax expense for the year	2,764,841	2,743,043

(b) Reportable segment financial position

	(in thousand Baht)	
	Consolidated financial statements	
	Segment assets	
	2020	2019
Construction Materials	73,126,203	68,670,061
Petrochemical & Chemicals	10,015,700	8,154,426
Energy & Utilities	40,299,386	35,647,510
Agriculture	2,161,415	2,224,484
Others	580,989	565,995
	126,183,693	115,262,476
Unallocated assets	6,182,250	4,531,242
Total	132,365,943	119,793,718
Elimination of inter-segment assets	(8,457,041)	(5,425,573)
Total assets	123,908,902	114,368,145

(c) Disaggregation of revenue

	(in thousand Baht)	
	Separate financial statements	
	Revenue from sale of goods	
	2020	2019
Construction Materials	16,519,666	19,968,216
Petrochemical & Chemicals	6,733,110	6,933,345
Total	23,252,776	26,901,561

Timing of revenue recognition of the Company is at a point in time.

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.

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Geographical information				
Thailand	23,018,707	25,398,658	22,678,681	26,019,712
China	5,458,979	4,882,551	-	-
Bangladesh	370,839	845,823	-	-
Others	5,427,245	5,913,531	574,095	881,849
Total	34,275,770	37,040,563	23,252,776	26,901,561

The Group is managed and operates principally in Thailand.

(d) Disaggregation of finance cost

		(in thousand Baht)	
		Separate financial statements	
		Finance cost	
		2020	2019
Construction Materials		1,312,215	1,423,247
Petrochemical & Chemicals		50,490	3,976
Investing		387,876	370,491
Total		1,750,581	1,797,714

25 Other income

		(in thousand Baht)	
		Consolidated financial statements	
		2020	2019
Rental trucks income	15,065	27,911	21,228
Income from sale of spare parts	2,617	19,012	18,114
Sale steam	50,515	65,312	10,288
Share services income	300	240	125,920
Waste disposal income	43,608	35,989	247,259
Other income - claim insurance	100,340	43,567	754
Revenue from machine rental	141,363	94,317	-
Others	384,369	264,134	226,782
Total	738,177	550,482	650,345

		(in thousand Baht)	
		Separate financial statements	
		2020	2019
Rental trucks income	15,065	27,911	21,228
Income from sale of spare parts	2,617	19,012	18,114
Sale steam	50,515	65,312	10,288
Share services income	300	240	125,920
Waste disposal income	43,608	35,989	247,259
Other income - claim insurance	100,340	43,567	754
Revenue from machine rental	141,363	94,317	-
Others	384,369	264,134	226,782
Total	738,177	550,482	699,817

26 Cost of distributions and transportations

		(in thousand Baht)	
		Consolidated financial statements	
		2020	2019
Delivery expenses	1,640,737	2,307,914	1,483,783
Personnel expenses	806,245	885,081	699,162
Depreciation and amortisation	208,507	203,598	198,780
Maintenance expenses	48,437	56,169	42,810
Others	460,189	579,624	377,134
Total	3,164,115	4,032,386	2,801,669

		(in thousand Baht)	
		Separate financial statements	
		2020	2019
Delivery expenses	1,640,737	2,307,914	1,483,783
Personnel expenses	806,245	885,081	699,162
Depreciation and amortisation	208,507	203,598	198,780
Maintenance expenses	48,437	56,169	42,810
Others	460,189	579,624	377,134
Total	3,164,115	4,032,386	3,589,241

27 Administrative expenses

		(in thousand Baht)	
		Consolidated financial statements	
		2020	2019
Personnel expenses	924,988	1,177,394	710,737
Depreciation and amortisation	134,860	41,671	118,924
Maintenance expenses	7,521	25,503	3,716
Others	680,892	866,683	246,966
Total	1,748,261	2,111,251	1,080,343

		(in thousand Baht)	
		Separate financial statements	
		2020	2019
Personnel expenses	924,988	1,177,394	710,737
Depreciation and amortisation	134,860	41,671	118,924
Maintenance expenses	7,521	25,503	3,716
Others	680,892	866,683	246,966
Total	1,748,261	2,111,251	1,398,435

28 Employee benefit expenses

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Management				
Wages and salaries	323,968	346,889	263,174	288,530
Defined benefit plan	4,474	49,991	1,745	44,370
Others	48,152	46,762	27,074	26,256
	376,594	443,642	291,993	359,156
Other employees				
Wages and salaries	5,370,341	5,645,698	4,140,157	4,386,919
Defined benefit plan	33,636	561,532	21,721	467,680
Others	331,831	408,378	230,402	303,579
	5,735,808	6,615,608	4,392,280	5,158,178
Total	6,112,402	7,059,250	4,684,273	5,517,334

Defined contribution plans

The defined contribution plans comprise provident funds established by some companies of the Group for its employees. Membership to the funds is on a voluntary basis. Contributions are made monthly by the employees at rates ranging from 3% to 10% of their basic salaries and by the Company at rates ranging from 3% to 10% of the employees' basic salaries. The provident funds are registered with the Ministry of Finance as juristic entities and are managed by a licensed Fund Manager.

29 Expenses by nature

The statements of comprehensive income include an analysis of expenses by function. Expenses by nature disclosed in accordance with the requirements of various TFRS were as follows:

(in thousand Baht)

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Included in cost of sales of goods:				
Changes in inventories of finished goods and work in progress	2,495,864	348,467	2,641,046	629,644
Raw materials and consumables used	15,288,970	13,467,106	6,839,067	7,423,332
Loss on decline in value of inventories	(14,973)	(35,374)	(10,988)	(35,374)
Depreciation of plant and equipment	2,766,994	2,915,350	1,550,931	1,795,369
Amortisation of intangible assets	14,127	27,376	14,127	27,376
Included in distribution costs:				
Depreciation of plant and equipment	200,649	195,876	190,922	192,635
Amortisation of intangible assets	7,858	7,721	7,858	7,721
Included in administrative expenses:				
Depreciation of plant and equipment	116,866	36,094	100,930	11,984
Amortisation of intangible assets	17,994	5,577	17,994	5,577

30 Finance costs

		(in thousand Baht)			
	Note	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Interest expense :					
Loans from related party		-	-	2,005	1,475
Loans from financial institutions		244,280	236,171	229,478	232,259
Debentures		2,055,224	1,822,036	1,708,295	1,611,436
Leases	15	17,731	-	7,265	-
Total interest expense		2,317,235	2,058,207	1,947,043	1,845,170
Others		8,412	8,785	-	-
		2,325,647	2,066,992	1,947,043	1,845,170
Less: amounts included in the cost of qualifying assets:					
- Construction contracts work in progress	14	(310,744)	(107,969)	(196,462)	(47,456)
Net		2,014,903	1,959,023	1,750,581	1,797,714

31 Income tax

		(in thousand Baht)			
		Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Income tax recognised in profit or loss					
Current tax expense					
Current year		170,357	160,183	-	-
Adjustment for prior years		5,838	(41,536)	-	(48,717)
		176,195	118,647	-	(48,717)
Deferred tax expense					
Movements in temporary differences		(250,520)	(140,175)	(181,688)	(117,264)
Total tax (income) expense		(74,325)	(21,528)	(181,688)	(165,981)

		(in thousand Baht)					
		Consolidated financial statements					
		2020			2019		
		Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit	Net of tax
Income tax							
Recognised in other comprehensive income							
Foreign currency translation differences for foreign operations	(18)	-	(18)	(18)	(250)	-	(250)
Financial assets at FVOCI	9	(1)	8	8	-	-	-
Net change in fair value of available-for-sale investment	-	-	-	-	(111)	25	(86)
Share of other comprehensive income (expense) of associates	(3,778)	-	(3,778)	(3,778)	(935)	-	(935)
Defined benefit plan actuarial losses	-	-	-	-	(245,792)	49,235	(196,557)
Total		(3,787)	(1)	(3,788)	(247,088)	49,260	(197,828)

		(in thousand Baht)					
		Separate financial statements					
		2020			2019		
		Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit	Net of tax
Income tax							
Recognised in other comprehensive income							
Financial assets at FVOCI	3	(1)	2	2	-	-	-
Net change in fair value of available-for-sale investment	-	-	-	-	(126)	25	(101)
Share of other comprehensive income (expense) of subsidiaries accounted for using equity method	(13)	-	(13)	(13)	(30,845)	-	(30,845)
Share of other comprehensive income (expense) of associates accounted for using equity method	(3,778)	-	(3,778)	(3,778)	(935)	-	(935)
Defined benefit plan actuarial losses	-	-	-	-	(207,436)	41,487	(165,949)
Total		(3,788)	(1)	(3,789)	(239,342)	41,512	(197,830)

	Consolidated financial statements			
	2020		2019 (Restated)	
	Rate (%)	(in thousand Baht)	Rate (%)	(in thousand Baht)
Reconciliation of effective tax rate				
Profit before income tax expense		2,764,841		2,743,043
Income tax using the Thai corporation tax rate	20	552,968	20	548,608
Income not subject to tax		(90,005)		(74,412)
Profit was derived from promoted activities		(827,771)		(836,185)
Expenses not deductible for tax purposes		330,148		61,544
Deferred tax asset from tax loss expired		38,313		-
Prior year losses recognised as deferred tax asset in current year		(101,969)		-
Recognition of previously unrecognised tax losses		(2,308)		-
Current year losses for which no deferred tax asset was recognised		20,461		320,453
Under (over) provided in prior years		5,838		(41,536)
Total	(3)	(74,325)	(1)	(21,528)

	Separate financial statements			
	2020		2019 (Restated)	
	Rate (%)	(in thousand Baht)	Rate (%)	(in thousand Baht)
Reconciliation of effective tax rate				
Profit before income tax expense		1,316,464		1,227,544
Income tax using the Thai corporation tax rate	20	263,292	20	245,508
Income not subject to tax		(703,684)		(665,665)
Profit was derived from promoted activities		(6,201)		(14,037)
Expenses not deductible for tax purposes		226,592		32,541
Deferred tax asset from tax loss expired		38,313		-
Current year losses for which no deferred tax asset was recognised		-		284,389
Under (over) provided in prior years		-		(48,717)
Total	(14)	(181,688)	(14)	(165,981)

	Consolidated financial statements			
	Assets		Liabilities	
	2020	2019	2020	2019
Deferred tax				
At 31 December				
Total	1,577,518	1,287,865	(714,724)	(675,590)
Set off of tax	(663,730)	(616,012)	663,730	616,012
Net deferred tax assets (liabilities)	913,788	671,853	(50,994)	(59,578)

	Separate financial statements			
	Assets		Liabilities	
	2020	2019	2020	2019
Deferred tax				
At 31 December				
Total	1,349,060	1,129,127	(660,752)	(622,506)
Set off of tax	(660,752)	(622,506)	660,752	622,506
Net deferred tax assets (liabilities)	688,308	506,621	-	-

Movements in total deferred tax assets and liabilities during the year were as follows:

(in thousand Baht)

	Consolidated financial statements		
	(Charged) / Credited to		
	At 1 January 2020	Profit or loss	Other comprehensive income
			At 31 December 2020
Deferred tax assets			
Allowance for expected credit loss	21,195	(2,735)	-
Allowance for decline in value of inventories	5,401	(797)	-
Allowance for impairment of assets	1,806	-	-
Provision for sales discount and sales promotional	13,371	1,027	-
Provision for employee benefit	458,793	(2,184)	-
Loss carry forward	788,524	293,025	-
Others	(1,225)	1,318	(1)
Total	1,287,865	289,654	(1)
Deferred tax liabilities			
Amortisation gap of concessions	(4,123)	457	-
Lease liabilities	(141,938)	(10,306)	-
Depreciation gap of assets	(456,259)	(37,956)	-
Property, plant and equipment	(73,270)	8,671	-
Total	(675,590)	(39,134)	-
Net	612,275	250,520	(1)

(in thousand Baht)

	Consolidated financial statements		
	(Charged) / Credited to		
	At 1 January 2019	Profit or loss	Other comprehensive income
			At 31 December 2019
Deferred tax assets			
Allowance for doubtful account receivables	24,702	(3,507)	-
Allowance for decline in value of inventories	5,401	-	-
Allowance for impairment of assets	1,806	-	-
Provision for sales discount and sales promotional	8,100	5,271	-
Provision for employee benefit	300,248	109,310	49,235
Loss carry forward	778,644	9,880	-
Others	3,544	(4,794)	25
Total	1,122,445	116,160	49,260
Deferred tax liabilities			
Amortisation gap of concessions	(4,724)	601	-
Financial lease	(146,733)	4,795	-
Depreciation gap of assets	(466,207)	9,948	-
Property, plant and equipment	(81,941)	8,671	-
Total	(699,605)	24,015	-
Net	422,840	140,175	49,260

				(in thousand Baht)
				Separate financial statements
				(Charged) / Credited to
	At 1 January 2020	Profit or loss	Other comprehensive income	At 31 December 2020
Deferred tax assets				
Allowance for expected credit loss	14,120	(1,051)	-	13,069
Allowance for impairment of assets	900	-	-	900
Provision for sales discount and sales promotional	12,416	1,076	-	13,492
Provision for employee benefit	394,106	(2,770)	-	391,336
Loss carry forward	707,432	222,679	-	930,111
Others	153	-	(1)	152
Total	1,129,127	219,934	(1)	1,349,060
Deferred tax liabilities				
Amortisation gap of concessions	(4,123)	457	-	(3,666)
Lease liabilities	(86,345)	(17,180)	-	(103,525)
Depreciation gap of assets	(532,038)	(21,523)	-	(553,561)
Total	(622,506)	(38,246)	-	(660,752)
Net	506,621	181,688	(1)	688,308

				(in thousand Baht)
				Separate financial statements
				(Charged) / Credited to
	At 1 January 2019	Profit or loss	Other comprehensive income	At 31 December 2019
Deferred tax assets				
Allowance for doubtful account receivables	16,386	(2,266)	-	14,120
Allowance for impairment of assets	900	-	-	900
Provision for sales discount and sales promotional	7,515	4,901	-	12,416
Provision for employee benefit	259,614	93,005	41,487	394,106
Loss carry forward	707,432	-	-	707,432
Others	128	-	25	153
Total	991,975	95,640	41,512	1,129,127
Deferred tax liabilities				
Amortisation gap of concessions	(4,724)	601	-	(4,123)
Financial lease	(86,259)	(86)	-	(86,345)
Depreciation gap of assets	(553,147)	21,109	-	(532,038)
Total	(644,130)	21,624	-	(622,506)
Net	347,845	117,264	41,512	506,621

Deferred tax assets arising from unused tax losses allowance for impairment of investment that has not been recognised in the consolidated and separate financial statements as at 31 December 2020 amounting to Baht 1,178.6 million and Baht 953.1 million, respectively (2019: Baht 1,253.1 million and Baht 953.1 million, respectively).

The tax losses expire in 2021 to 2025. The deductible temporary differences do not expire under current tax legislation. Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profit will be available against which the Group can utilise the benefits therefrom.

Recognition of deferred tax asset from tax loss

In 2020 and 2019, the Group has entered into several agreements for many projects. As a result, management estimates future taxable profits and, as at 31 December 2020, the Group recognised deferred tax assets from tax losses in the consolidated and separate financial statements amounting to Baht 1,082 million and Baht 930 million, respectively (2019: Baht 789 million and Baht 707 million, respectively) because management considered it probable that future taxable profits would be available against which such losses can be used.

Deferred tax asset from loss carry forward in the consolidated and separate financial statements will expire as detail shown below.

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Deferred tax assets from loss carry forward expiring in year				
- 2020	-	55,540	-	38,313
- 2021	348,236	362,783	330,938	330,938
- 2022	383,456	360,321	338,180	338,180
- 2023	57,673	-	-	-
- 2024	31,040	9,880	-	-
- 2025	261,144	-	260,993	-
Total	1,081,549	788,524	930,111	707,431

32 Promotional privileges

By virtue of the provisions of the Industrial Investment Promotion Act of B.E. 2520, the Group has been granted privileges by the Board of Investment relating to petrochemical products, plastic film products, masterbatch, compound plastic, compound rubber, organic fertilizer, natural gas stations, power plants and fuel production from garbage and waste. The privileges granted include:

- exemption from payment of import duty on machinery and equipment approved by the Board;
- exemption from payment of corporate income tax for certain operations for a period of 3 - 8 years from the dates on which the income is first derived from such operations;
- a 50% reduction in the normal income tax rate on the net profit derived from certain operations for a period of 5 years, commencing from the expiry date in (b) above;
- a deduction of twice the actual transportation, electrical and water supply expenses for a period of 10 years from the respective revenues and a 25% reduction of the capital expenditure for the installation or the construction of the facilities in addition to the normal depreciation; and
- losses occur during the period could be carried forward 5 years commencing from the expiry date of the privileges to deducted from the profit that occur after the period of exemption of corporate income tax.

As a promoted company, the Group must comply with certain terms and conditions prescribed in the promotional certificates.

Summary of revenue from promoted and non-promoted businesses:

	Consolidated financial statements					
	2020			2019		
	Promoted business	Non-promoted business	Total	Promoted business	Non-promoted business	Total
Export sales	-	11,251,501	11,251,501	-	11,643,083	11,643,083
Local sales	9,761,146	30,326,029	40,087,175	9,004,205	36,424,315	45,428,520
Eliminations	(2,037,534)	(15,025,372)	(17,062,906)	(2,049,965)	(17,981,075)	(20,031,040)
Total	7,723,612	26,552,158	34,275,770	6,954,240	30,086,323	37,040,563

	Separate financial statements					
	2020			2019		
	Promoted business	Non-promoted business	Total	Promoted business	Non-promoted business	Total
Export sales	-	584,899	584,899	-	917,056	917,056
Local sales	103,616	22,564,261	22,667,877	152,460	25,832,045	25,984,505
Total	103,616	23,149,160	23,252,776	152,460	26,749,101	26,901,561

33 Basic earnings per share

The calculations of basic earnings per share for the years ended 31 December 2020 and 2019 were based on the profit for the years attributable to ordinary shareholders of the Company and the number of ordinary shares outstanding during the years, after adjusting the own shares held by subsidiaries. The calculations are as follows:

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019 (Restated)
	<i>(in thousand Baht / thousand shares)</i>			
Profit attributable to ordinary shareholders of the Company (basic)	1,498,152	1,393,525	1,498,152	1,393,525
Number of ordinary shares outstanding at 1 January	19,180,500	20,190,000	19,180,500	20,190,000
Effect of treasury shares	(277,541)	(1,008,278)	(277,541)	(1,008,278)
Weighted average number of ordinary shares outstanding (basic)	18,902,959	19,181,722	18,902,959	19,181,722
Earnings per share (basic) (in Baht)	0.079	0.073	0.079	0.073

34 Dividends

At the annual general meeting of the shareholders of the Company held on 29 April 2019, the shareholders approved the appropriation of dividend from the Company's retained earnings of Baht 0.02 per share, amounting to Baht 383.61 million. The dividend was paid to the shareholders in May 2019.

At the Board of Directors' meeting of the Company held on 28 November 2019, the Board of Directors' meeting passed a resolution to declare the interim dividend payment from the Company's retained earnings of Baht 0.03 per share, amounting to Baht 575.42 million. The dividend was paid to the shareholders in December 2019.

At the annual general meeting of the shareholders of the Company held on 4 August 2020, the shareholders acknowledged the interim dividend payment of 2019 annual dividend at Baht 0.06 per share, amounting to Baht 1,149.20 million. After a deduction of the interim dividends of Baht 0.03 per share which paid to the Company's shareholders in 2019, the remaining dividends of Baht 0.03 per share, totalling Baht 573.78 million. The dividend was paid to the shareholders on May 2020 and no further dividend payment shall be made from the fiscal year 2019.

At the Board of Directors' meeting of the Company held on 27 August 2020, the Board of Directors' meeting approved the appropriation of interim dividend from the Company's retained earnings of Baht 0.03 per share, amounting to Baht 563.91 million. The dividend was paid to the shareholders in September 2020.

35 Financial instruments

(a) Carrying amounts and fair values

The following table shows 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.

(in thousand Baht)

Consolidated financial statements									
Carrying amount					Fair value				
		Financial instruments measured at	Financial instruments measured at	Financial instruments measured at					
At 31 December 2020	Note	FVTPL	FVOCI	amortised cost	Total	Level 1	Level 2	Level 3	Total
Financial assets									
Other financial assets									
Equity instruments		-	226	-	226	226	-	-	226
Debt instruments		2,699,273	1,205	327,514	3,027,992	2,655,499	374,777	-	3,030,276
Promissary Note		-	-	499,241	499,241	-	499,280	-	499,280
Total financial assets		2,699,273	1,431	826,755	3,527,459				
Financial liabilities									
Promissary Note	17	-	-	1,314,807	1,314,807	-	1,315,543	-	1,315,543
Debentures	17	-	-	57,686,200	57,686,200	-	58,246,890	-	58,246,890
Total financial liabilities		-	-	59,001,007	59,001,007				

(in thousand Baht)

Separate financial statements									
Carrying amount					Fair value				
		Financial instruments measured at	Financial instruments measured at	Financial instruments measured at					
At 31 December 2020	Note	FVTPL	FVOCI	amortised cost	Total	Level 1	Level 2	Level 3	Total
Financial assets									
Other financial assets									
Equity instruments		-	226	-	226	226	-	-	226
Debt instruments		1,302,891	-	211,749	1,514,640	1,302,891	213,007	-	1,515,898
Promissary Note		-	-	199,385	199,385	-	199,385	-	199,385
Total financial assets		1,302,891	226	411,134	1,714,251				
Financial liabilities									
Promissary Note	17	-	-	1,075,182	1,075,182	-	1,075,858	-	1,075,858
Debentures	17	-	-	45,924,200	45,924,200	-	46,415,493	-	46,415,493
Total financial liabilities		-	-	46,999,382	46,999,382				

		(in thousand Baht)			
		Consolidated financial statements			
	Carrying value	Fair value			
		Level 1	Level 2	Level 3	Total
31 December 2019					
Financial assets measured at fair value					
Debt securities held for trading	1,329,349	-	1,329,349	-	1,329,349
Debt securities held for trading (Private funds)	1,321,347	-	1,321,347	-	1,321,347
Equity/debt securities available-for-sale	1,422	223	1,199	-	1,422
Financial assets and financial liabilities not measured at fair value					
Debt securities held to maturity	27,132	-	31,308	-	31,308
Current portion of debentures	7,205,000	-	7,242,318	-	7,242,318
Debentures	38,495,000	-	39,161,359	-	39,161,359

		(in thousand Baht)			
		Separate financial statements			
	Carrying value	Fair value			
		Level 1	Level 2	Level 3	Total
31 December 2019					
<i>Financial assets measured at fair value</i>					
Equity securities available-for-sale	223	223	-	-	223
<i>Financial assets and financial liabilities not measured at fair value</i>					
Debt securities held to maturity	11,712	-	12,621	-	12,621
Current portion of debentures	7,205,000	-	7,242,318	-	7,242,318
Debentures	30,675,000	-	31,251,051	-	31,251,051

Financial instruments measured at fair value

The following tables show the valuation techniques used in measuring Level 2.

Type	Valuation technique
Investments in government bonds guaranteed by the government, classified as financial assets measured at amortised cost (2019: held-to-maturity investments)	Thai Bond Market Association Government Bond Yield Curve as of the reporting date.
Corporate debt securities (Private funds)	Market comparison/discounted cash flow: The fair value is estimated considering (i) current or recent quoted prices for identical securities in markets that are not active and (ii) a net present value calculated using discount rates derived from quoted prices of securities with similar maturity and credit rating that are traded in active markets, adjusted by an illiquidity factor.
Investments in marketable unit trusts classified as financial assets measured at FVTPL or FVOCI (2019: trading investments and available-for-sale investments)	The net asset value as of the reporting date.
Debentures	A valuation technique incorporating observable market data which is adjusted with counterparty credit risk (excluding own credit risk) and other risks to reflect true economic value.

(b) Movement of marketable equity and debt securities

Marketable equity and debt securities	Consolidated financial statements			(in thousand Baht)
	At 1 January	Increase (decrease)	Fair value adjustment	At 31 December
2020				
Current financial assets				
Debt securities measured at				
- FVTPL	1,521,596	1,178,766	(1,089)	2,699,273
Total	1,521,596	1,178,766	(1,089)	2,699,273
Non-current financial assets				
Equity/Debt securities measured at				
- FVOCI	1,422	-	9	1,431
Total	1,422	-	9	1,431
2019				
Current investments				
Trading securities	2,530,465	(1,016,848)	7,979	1,521,596
Total	2,530,465	(1,016,848)	7,979	1,521,596
Other long-term investments				
Available-for-sale securities	1,533	-	(111)	1,422
Total	1,533	-	(111)	1,422

Marketable equity and debt securities	Consolidated financial statements			(in thousand Baht)
	At 1 January	Increase (decrease)	Fair value adjustment	At 31 December
2020				
Current financial assets				
Debt securities measured at				
- FVTPL	-	1,300,000	2,891	1,302,891
Total	-	1,300,000	2,891	1,302,891
Non-current financial assets				
Equity securities measured at				
- FVOCI	223	-	3	226
Total	223	-	3	226
2019				
Other long-term investments				
Available-for-sale securities	349	-	(126)	223
Total	349	-	(126)	223

(c) Financial risk management policies

Risk management framework

The Group's board of directors has overall responsibility for the establishment and oversight of the Group's risk management framework. The board of directors has established the risk management committee, which is responsible for developing and monitoring the Group's risk management policies. The committee reports regularly to the board of directors on its activities.

The Group's risk management policies are established to identify and analyse the risks faced by the Group, 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 activities. The Group, 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.

The Group audit committee oversees how management monitors compliance with the Group's risk management policies and procedures, and reviews the adequacy of the risk management framework in relation to the risks faced by the Group. The Group audit committee is assisted in its oversight role by internal audit. Internal audit undertakes both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the audit committee.

(c.1) Credit risk

Credit risk is the risk of financial loss to the Group 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 and investments in debt securities.

(c.1.1) Trade accounts receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the factors that may influence the credit risk of its customer base, including the default risk associated with the industry and country in which customers operate. Detail of concentration of revenue are included in note 24(c).

The risk management committee has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered. The Group's review financial statements, industry information and in some cases bank references. Sale limits are established for each customer and reviewed regularly. 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 75 days.

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

	(in thousand Baht)	
	Consolidated financial statements	Separate financial statements
At 31 December 2020		
Trade accounts receivables - related parties		
Within credit terms	954	1,717,970
Overdue:		
1-30 days	76	1,119,224
31-60 days	18	1,099,436
61-90 days	27	897,281
More than 90 days	5	614,397
Total	1,080	5,448,308
Less allowance for expected credit loss	-	-
Net	1,080	5,448,308
		(in thousand Baht)
At 31 December 2020		
Trade accounts receivables - other parties		
Within credit terms	4,419,157	713,742
Overdue:		
1-30 days	207,699	54,553
31-60 days	22,739	7,677
61-90 days	11,608	833
More than 90 days	78,212	50,106
Total	4,739,415	826,911
Less allowance for expected credit loss	(64,784)	(37,242)
Net	4,674,631	789,669
Net total	4,675,711	6,237,977

Loss rates are based on actual credit loss experience over the past 3 years. These rates are multiplied by scalar factors to reflect differences between economic conditions during the period over which the historical data has been collected and current economic conditions.

	(in thousand Baht)	
<i>At 31 December 2019</i>	Consolidated financial statements	Separate financial statements
Trade accounts receivables - related parties		
Within credit terms	2,691	1,383,386
Overdue:		
Less than 3 months	55	1,442,710
3 - 6 months	21	317,866
6 - 12 months	-	50,463
Over 12 months	5	22,752
	2,772	3,217,177
Less allowance for doubtful accounts	-	-
	2,772	3,217,177
Trade accounts receivables - other parties		
Within credit terms	4,090,877	782,982
Overdue:		
Less than 3 months	360,432	76,201
3 - 6 months	9,793	9,062
6 - 12 months	8,191	8,148
Over 12 months	74,001	37,244
	4,543,294	913,637
Less allowance for doubtful accounts	(73,610)	(37,242)
	4,469,684	876,395
Net	4,472,456	4,093,572

The Group requires various customers to provide cash, bank and personal guarantees as collateral.

The normal credit term granted by the Group ranges from 30 days to 360 days.

(c.1.2) Cash and cash equivalent and derivatives

The Group's exposure to credit risk arising from cash and cash equivalents is limited because the counterparties are banks and financial institutions with a reliable credit rating for which the Group considers to have low credit risk.

(c.2) Liquidity risk

The Group monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

The following table are the remaining contractual maturities of financial liabilities at the reporting date. The amounts are gross and undiscounted and include contractual interest payments and exclude the impact of netting agreements.

	Consolidated financial statements				(in thousand Baht)
	Contractual cash flows				
<i>At 31 December 2020</i>	Carrying amount	1 year or less	After 1 year but within 5 years	More than 5 years	Total
Non-derivative financial liabilities					
Short-term loans from financial institutions	1,314,807	1,314,807	-	-	1,314,807
Trade payables	2,877,681	2,870,886	6,795	-	2,877,681
Loans from financial institutions	2,988,625	1,607,914	1,380,711	-	2,988,625
Lease liabilities	455,995	129,801	875,272	240,729	1,245,802
Debentures	57,686,200	17,180,000	40,506,200	-	57,686,200
Total	65,323,308	23,103,408	42,768,978	240,729	66,113,115

Consolidated financial statements					
Maturity period					
At 31 December 2019	Effective interest rate (% per annum)	within 1 year (in thousand Baht)	After 1 year but within 5 years	After 5 years	Total
Bank overdrafts and short-term loans from financial institutions	1.09 to 3.61	2,939,529	-	-	2,939,529
Loans from financial institutions	3.85, 3.875, MLR - 1.75, 3M EURIBOR + 1.65	1,605,033	2,984,304	-	4,589,337
Debentures	3.30 to 5.20	7,205,000	35,495,000	3,000,000	45,700,000
Total		11,749,562	38,479,304	3,000,000	53,228,866

Separate financial statements					
(in thousand Baht)					
Contractual cash flows					
At 31 December 2020	Carrying amount	1 year or less	After 1 year but within 5 years	More than 5 years	Total
Non-derivative financial liabilities					
Short-term loans from financial institutions	1,075,182	1,075,182	-	-	1,075,182
Trade payables	2,453,991	2,450,714	3,277	-	2,453,991
Loans from financial institutions	2,988,625	1,607,914	1,380,711	-	2,988,625
Lease liabilities	204,368	89,945	94,551	47,981	232,477
Debentures	45,924,200	13,180,000	32,744,200	-	45,924,200
Total	52,646,366	18,403,755	34,222,739	47,981	52,674,475

Separate financial statements					
Maturity period					
At 31 December 2019	Effective interest rate (% per annum)	within 1 year (in thousand Baht)	After 1 year but within 5 years	After 5 years	Total
Bank overdrafts and short-term loans from financial institutions	1.11 to 3.61	2,607,863	-	-	2,607,863
Loans from financial institutions	3.85, 3.875, MLR - 1.75, 3M EURIBOR + 1.65	1,605,033	2,984,304	-	4,589,337
Debentures	3.30 to 5.20	7,205,000	27,675,000	3,000,000	37,880,000
Total		11,417,896	30,659,304	3,000,000	45,077,200

The cash outflows disclosed in the above table represent the contractual undiscounted cash flows.

(c.3) Market risk

The Group is exposed to normal business risks from changes in market interest rates and currency exchange rates and from non-performance of contractual obligations by counterparties. The Group does not hold or issue derivatives for speculative or trading purposes.

(c.3.1) Foreign currency risk

The Group is exposed to foreign currency risk relating to purchases and sales of goods, purchases of machine and equipment and loans which are denominated in foreign currencies.

<i>Exposure to foreign currency at 31 December</i>	(in thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
United States Dollars				
Cash and cash equivalents	2,338,300	542,416	9,165	38,932
Trade accounts receivable	1,406,539	1,054,706	7,723	1,649
Interest-bearing liabilities	-	(620,621)	-	(334,177)
Trade accounts payable	(317,304)	(235,545)	(316,891)	(205,938)
Other payables - machines	(474,528)	(364,235)	(1,006)	(1,010)
	2,953,007	376,721	(301,009)	(500,544)
EURO				
Cash and cash equivalents	7,960	1,500	359	601
Trade accounts receivable	9,977	16,828	-	-
Interest-bearing liabilities	(50,734)	(184,776)	(50,734)	(139,555)
Trade accounts payable	(16,858)	(50,284)	(16,858)	(8,698)
Other payables - machines	(157,717)	(21,148)	(149,298)	(21,148)
	(207,372)	(237,880)	(216,531)	(168,800)
Others				
Cash and cash equivalents	974	942	579	516
Trade accounts payable	(41,859)	(33,214)	(41,476)	(32,857)
Other payables - machines	(11,005)	-	(11,005)	-
	(51,890)	(32,272)	(51,902)	(32,341)
Net exposure	2,693,745	106,569	(569,442)	(701,685)

(c.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 operations and its cash flows because debt securities and loan interest rates are mainly fixed. The Group is primarily exposed to interest rate risk from its borrowings (see note 17). The Group mitigates this risk by ensuring that the majority of its debt securities and borrowings are at fixed interest rates.

36 Capital management

The Board of Directors' policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business. The Board monitors the return on capital, which the Group defines as result from operating activities divided by total shareholders' equity, excluding non-controlling interests and also monitors the level of dividends to ordinary shareholders.

37 Commitments with non-related parties

	(in thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
		(Restated)		(Restated)
Capital commitments				
Agreements for construction, machine and equipment	1,261,371	1,362,431	632,937	1,044,689
Other commitments				
Short-term lease and services commitments	2,837	13,780	241	9,473
Unused letters of credit	603,636	1,117,349	475,728	578,349
Purchase agreement for raw material	471,332	287,600	471,332	287,600
Bank guarantees	322,410	227,678	170,901	173,013
Total	1,400,215	1,646,407	1,118,202	1,048,435

In addition, as at 31 December 2020, the Company has a commitment to transfer money to the Village Development Fund around the mining area of Baht 0.5 million per year (2019: Baht 0.5 million) according to the request for a concession in the totalling of Baht 10.5 million (2019: Baht 11 million).

38 Contingent liabilities

As at 31 December 2020, the Company had the major lawsuits as follows:

- 1) Due to on 20 February 2017, Tham Phra Phothisat Temple (the “Plaintiff”) filed a complaint with the Central Administrative Court (the “Court”) being the Black Case No. Sor. 3/2560, and claimed that Plaintiff is authorized by the Fine Arts Department to be the caretaker of the Phothisat cave (Tham Phra Phothisat), but did not have a written power of attorney, and alleged that the Company’s mining activity caused damage to the engraved images in Phothisat cave. Later, on 2 June 2017, the Court called the Company to be a party (as an interpleader) in the case where the Plaintiff filed a lawsuit against the Minister of the Ministry of Industry, 1st Defendant, the Director-General of Department of Primary Industries and Mines, 2nd Defendant, Department of Mineral Resources, 3rd Defendant and Saraburi Provincial Industry Office, 4th Defendant (collectively “Defendants”); claiming that the Defendants’ issuance of Prathanabat to the Company is done in contradiction to regulation of Ministry of Interior on the Conditions and Means of Prathanabat Issuance, under Section 9 of the Land Code B.E. 2497, which such regulation of Ministry of Interior was issued in B.E. 2535; thus, the Plaintiff requested that such Prathanabat issued by the Defendants to “Petrochemical Industry Company Limited” which such Prathanabat was later assigned to the Company, be revoked. Further, the Plaintiff filed a request for an emergency interim measure demanding that the Court orders the Company to stop the blasting of rocks for mining activity, until the decision of this case is reached.

On 3 August 2017, the Court, together with the parties of this case went to examine the location at Phothisat cave and found the Bas-relief art images of Buddha, Shiva god, Narai god, Hermit, etc. located at the front area of the cave; and during the examination at the location, the officer of Fine Arts Department informed that according to the evidences which are the photographed pictures of the art images which were taken in B.E. 2507, B.E. 2508, B.E. 2534, B.E. 2535, B.E. 2559 and B.E. 2560, there is no traces of any changes to the art images based on comparison with those pictures. Further, the Court, together with the parties of this case, examined the area of the Company (interpleader) which was granted with Prathanabat by witnessing the rock blasting activity of the interpleader around 15.30 o’clock, standing approximately 300-400 metres from the area of blasting activity; which at the time of blasting, it made a slightly loud sound, but no vibration was detected. Later, on 8 September 2017, Court denied the Plaintiff’s request for an emergency interim measure for the Company to comply with the order of the 4th Defendant.

The 1st Defendant submitted a written statement dated 8 May 2017 to the Court, which stated that the 1st Defendant is authorized with the power to issue Prathanabat to each applicant in accordance with the Minerals Act, B.E. 2510. The 2nd Defendant submitted a written statement dated 4 May 2017 to the Court, which stated that the 2nd Defendant was assigned with the administration power from Department of Mineral Resources according to the Reorganization of Ministry, Sub-Ministry, and Department Act, B.E. 2545 and is authorized with the duty to consider the application for Prathanabat which have been submitted to the officials at the local Industry Office, and the 2nd Defendant is authorized with the power to grant Prathanabat in accordance with Section 54 of the Minerals Act, B.E. 2510; and after Prathanabat is granted, the 2nd Defendant has the duty to control, monitor and inspect that the person whom has been granted with Prathanabat, shall comply with the Minerals Act, B.E. 2510 and the conditions set forth in the annex of Prathanabat. The 3rd Defendant submitted a written statement dated 28 March 2017 to the Court, which stated that the presently, the 3rd Defendant is not authorized by the laws related to the issuance of Prathanabat, which is due to the Royal Decree on transfer of administration duty and power of the administrative agencies issued according to the Reorganization of Ministry, Sub-Ministry, and Department Act, B.E. 2545, Section 151 which transferred the said duty, power and asset to Department of Primary Industries and Mines (2nd Defendant). The Fine Arts Department also submitted a written statement dated 5 April 2017 to the Court, which stated that the Phothisat cave is deemed as ancient monument under Section 4 of Act on ancient monuments, antiques, objects of art and national museum, B.E. 2504 and the Fine Arts Department had already announced the registration of Phothisat cave as ancient monuments in the government gazette since 6 April 1965; and the Fine Arts Department authorized the director of Regional Office of the Arts Department, No.3, Ayutthaya, with the authority to file any complaint to the inquiry officer who has authority in the area, against any wrongdoer. The statement further clarified that on 14 December 2016, the Fine Arts Department had inspected the Phothisat cave and there appeared to be no traces of any damage, nor any damage to the Bas-relief art images from Dvaravati era, e.g. images of Buddha, Narai god, Shiva god or other persons; which are in good order and it was found that the conditions of the other areas within the cave are normal without traces of any damage being caused by the mining activity of the Company.

The fact-finding procedure of the case had ended and the Court had set the first trial date to be 9 September 2020 together with submission of summary of facts from the Judge who presided over this case dated 11 August 2020 and scheduled the date of rendering the Court’s decision to be on 30 September 2020.

The Court ruled that the Defendants lawfully issued Prathanabat to Petrochemical Industry Company Limited and in accordance with the Land Code and Minerals Act, B.E. 2510, which such Prathanabat was later transferred to the Company, which were done lawfully and legitimately; the mining activity of the Company which is the blasting of rocks according to Prathanabat and using the explosives not exceeding the rate of 130 kilograms, further, the result of vibration or compression level inspection are according to the safety standard, when compared with the standard set forth by the Ministry of Natural Resources and Environment. Additional, the Fine Arts Department also stated that according to the inspection result, there is no additional damage, the Bas-relief art images are in good condition and there is no damage to the area within the cave; thus, the Court has no reason nor cause to issue the order according to the Plaintiff's request and the Court has ruled that the case is dismissed and the Court's order relating to the emergency interim measure dated 8 September 2017 shall be revoked starting from the first day of which the appeal submission period has expired (in case there is no appeal submission) or starting from the date on which the Court has ordered its decision to accept or not accept the appeal (in case there is submission of an appeal), as the case maybe.

The Plaintiff submitted the appeal to the Court on 27 October 2020 and the Court accepted the appeal of the Plaintiff. Therefore, the Court's order dated 8 September 2017 relating to the emergency interim measure ceased to be in effect. Presently, the case is under process of preparation of answer to the appeal and the Court allowed the date to submit the answer to the appeal to be within 21 February 2021.

- 2) This case is due to the Company received permit to dig the water-well, from Mittraphap Subdistrict Administration Organization and the Company dig the water-well in the Company's own land, in order to preserve the environment and to be used for prevention of fire (the Black Case No. SorWor.2/2561). Later, on 21 June 2018, the Department of Primary Industry and Mines, Ministry of Industry, by representation of the district attorney, the Office of Attorney General (the "Plaintiff"), filed a lawsuit against the Company (the "Defendant") at the Civil Court (the "Court"), claiming the violation in mining activity with the principal amount of claim of Baht 71,566,889.42. The Plaintiff claimed that the Company conducted its shale mining unlawfully in the area in which Prathanabat for such area has not been granted, totaling 2 locations; thus, requesting that the Court to order the Company to return the shale totaling of 249,159.96 metric tons back to the original area and restore the area into its previous condition or pay the compensation consisting of the value of the shale and royalty fee to the government in the amount of Baht 66,650,289.31 together with interest.

The Company plead in its defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence, the Plaintiff claimed that the Company conducted unlawful mining activity, however, the claim is fault, the Company did not commit any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim. The hearing was finished and the Court ordered the date to render the Court's decision to be on 24 March 2020.

On 24 March 2020, the Court ordered the Company to return the shale totaling 249,159.96 metric tons back to the original area and restore the area to its previous condition or pay the compensation consisting of the value of the shale and royalty fee to the government in the amount of Baht 66,650,289.31 together with interest at the rate of 7.5 percent per annum on the said amount, starting from the date of the violation (28 June 2017) until the date of the complaint filing (359 days) making the interest to be Baht 4,916,600.11. Total amount of combined principal and interest is Baht 71,566,889.31. The Court also ordered that the interest on the principal amount of Baht 66,650,289.31, in the rate of 7.5 percent per annum would be paid calculating from the next day after the date of filing of the complaint until the payment is received in full together with the court fees in behalf of the Plaintiff and attorney fee of Baht 80,000.

The Company filed the appeal together with the request for delay of judgement execution on 19 August 2020. The case is pending the considering of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order was set to be on 20 May 2021.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines' filling of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

- 3) On 20 June 2019, Tham Phra Phothisat Temple (the "Plaintiff") filed a lawsuit against the Ministry of Industry, as 1st defendant and other related persons as co-defendants, totaling 31 persons, in a Black Case No. Sor. 17/2562, which the Company is the 30th Defendant in the lawsuit and the Plaintiff also filed request for the Court to order an emergency interim measure, until the decision of this case is reached. Later on, the Court also ordered the Committee of Professional on Environmental Impact Assessment Report (the

“Committee”), as the 32nd Defendant. The Court has considered and issued the order dated 17 September 2019, to accept the complaint against some of the respondents and denied to accept the complaint against some respondents and some claims (the Court only accept the followings as defendants: Ministry of Industry, as 1st Defendant, Minister of Ministry of Industry, as 2nd Defendant, Department of Primary Industry and Mines, as 3rd Defendant, Director-General of Department of Primary Industry and Mines, as 4th Defendant, the Company, as the 30th Defendant and the Committee, as the 32nd Defendant, respectively). The Court also issued order dated 17 September 2019 which denied the Plaintiff’s request for an emergency interim measure. The Plaintiff claimed to be the authorized person from the Fine Arts Department as caretaker of the Phothisat Cave, but did not have a written power of attorney, but requested to the Court to order that the application for Prathanabat of the Company is unlawful, the Plaintiff also claimed that the resolution of the 32nd Defendant which approved the Company’s Environmental Impact Assessment Report for the Company’s mining activity, concealed the facts, thus, unlawful. The Plaintiff requested the Court to order the revocation of the Company’s application for Prathanabat of limestone mining, in which the Company has submitted for approval.

The Defendant submitted written statement of defense which informed the Court that the Plaintiff has no authority to file the complaint and this complaint repeated the complaint filed in Black Case No. Sor.3/2560, and the Company’s application for Prathanabat of limestone mining is lawful and in accordance with the rules, procedures and methods as prescribed by the laws, further, the applied area for Prathanabat is not the restricted area under the laws in respect of Mineral and Forest; and there is an Environmental Impact Assessment Report which have been prepared correctly and completely in accordance with the law in relation to Enhancement and Conservation of National Environmental Quality and law related to Mineral, for application for Prathanabat which have been submitted for approval from the authority. The application for Prathanabat is pending the consideration for approval of the authority and the Company’s application for Prathanabat did not cause any damage or grievance to the Plaintiff, thus, the Defendant requested the Court to dismiss the complaint.

The Company have made and submitted the additional statement of defense to the Court on 14 January 2021, the case is under the process of the Court’s fact finding procedure.

- 4) On 8 July 2015, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the Saraburi Office of District Attorney (the “Plaintiff”) filed a civil lawsuit (the Black Case No. SorWor.4/2559) against the Company (the “Defendant”) with the principle amount of claim in total of Baht 4,066,535,823. The Plaintiff later amended the complaint to increase the amount of claim to be the total of Baht 4,338,558,231.54; claiming that the Company engaged its limestone mining activity in the area outside the designated area under the Prathanabat and requested that the Company returned the limestone ore in total of 31,522,374.64 metric tons and restore the area to be in its previous condition or pay the compensation together with the 7.5 per annum interest.

The Company plead in its statement of defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim, therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

The case was requested to be transferred to the Environmental Law Division of the Civil Court to be jointly considered with other related cases and the Court granted the said request.

On 13 December 2019, the Civil Court ordered the Company to return the limestone ore in total of 31,522,374.26 metric tons back to the area where the mining activity was done and to restore such area to the previous condition or pay the compensation of Baht 4,047,472,854.98 together with the 7.5 percent per annum interest on the said principle amount, calculating from the discovery date of the unlawful mining activity (24 July 2014) until the date of the filing of complaint (350 days) totaling Baht 291,085,376.56 making it Baht 4,338,558,231.54 in total. The Court also ordered the Defendant to pay 7.5 percent per annum interest on the principal of Baht 4,047,472,854.98 counting from the day after the complaint filing date until the payment is made in full.

The Company filed an appeal with the request for a delay of judgement execution on 8 May 2020. The case is pending the consideration of the Court of Appeal.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines's filling of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

- 5) On 24 March 2016, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the Saraburi Office of District Attorney (the "Plaintiff") filed a civil lawsuit (the Black Case No. SorWor.6/2559) against the Company (the "Defendant") claiming that the Company engaged its limestone mining activity in the area outside the designated area under the Prathanabat. The complaint requested the Company to return the limestone ore of 2,447,906.76 metric tons and restore the area into the previous condition or pay the compensation of Baht 327,680,219.25 together with 7.5 percent per annum interest.

The Company plead in its defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim, therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

The case was requested to be jointly considered with other related cases and the Court granted the said request.

On 13 December 2019, the Civil Court ordered the Company to return the limestone ore for cement industry, in total of 2,477,906.76 metric tons back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation of Baht 314,311,227.98 together with the 7.5 percent per annum interest, calculating from the discovery date of the unlawful mining activity (31 August 2015) until the date of the filing of complaint (207 days) totaling Baht 13,368,991.27 making it Baht 327,680,219.25 in total. The Court also ordered the Defendant to pay 7.5 percent per annum interest on the principal of Baht 314,311,227.98 counting from the day after the complaint filing date until the payment is made in full and ordered that the Defendant pay the court fees on the Plaintiff's behalf (court fee shall be calculated from the amount of claim ordered in favour of the Plaintiff) and to pay the attorney fee of Baht 100,000.

The Company filed an appeal with the request for a delay of judgement execution on 8 May 2020. The case is pending consideration of the Court of Appeal.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines' filling of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

- 6) On 24 March 2016, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the Saraburi Office of District Attorney (the "Plaintiff") filed a civil lawsuit (the Black Case No. SorWor.5/2559) against the Company (the "Defendant") in the civil case claiming for compensation totaling Baht 1,671,128,829.14 stating that the Company engaged its limestone mining activity unlawfully (engaged in the mining restricted area) demanding that the ore totaling 12,484,023.50 metric tons be returned and the area be restored into its previous condition or pay the compensation together with the 7.5 percent per annum interest.

The Company plead in its statement of defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim, therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

On 2 August 2019, the Court ordered the Company to return the limestone for cement industry totaling 12,484,023.50 metric tons back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation of Baht 1,602,948,617.40 together with the interest of 7.5 percent per annum of such amount calculating from the date of being notified of the land survey result (31 August 2015) until the date of the filing of complaint (207 days) making the interest to be Baht 68,180,211.74, making it Baht 1,671,128,829.14 in total, together with payment of 7.5 percent per annum interest on the principle amount of Baht 1,602,948,617.40 counting from the day after the complaint filing date until the payment is made in full and ordered that the Defendant pay the court fees on the Plaintiff's behalf (court fee shall be calculated from the amount of claim ordered in favour of the Plaintiff) and to pay the attorney fee of Baht 200,000.

The Company does not agree with the decision of the Court of the First Instance and filed the appeal together with the request for a delay of judgement execution on 3 December 2019. The case is pending the consideration of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order was set to be on 22 September 2020, however, the said date of hearing of judgement had been postponed, due to the case is under mediation during the appeal.

- 7) On 2 March 2017, the Department of Primary Industries and Mines, Ministry of Industry by the representation of the district attorney of the Office of the Attorney General (the "Plaintiff"), filed a complaint against the Company (the "Defendant") at the Civil Court, Environmental Law Department (the Black Case No. SorWor.1/2560) with the lawsuit amount of Baht 344,882,135.15 claiming that the Company partially engaged its mining activity in the area designated in the Prathanabat unlawfully requesting that the shale totaling 1,220,559.82 metric tons be returned to the area and the area be restored into its previous condition or to pay compensation together with the 7.5 percent per annum interest.

The Company plead in its statement of defense that the Plaintiff does not have any authority to file such lawsuit according to the Enhancement and Conservation of National Environmental Quality Act B.E. 2535, the lawsuit is vague, delusive without any evidence and is already time-barred by prescription period; further, the lawsuit is a civil claim in connection with criminal offence relating to unlawful mining activity, however, the Company has not committed any criminal offence and did not infringe any rights of the Plaintiff, thus, the civil claim does not exist due to non-existence of infringement, the Company has not committed any wrongdoing according to the complaint and is not liable to any claim, therefore, the Company denied all claims under the complaint. Additionally, the Company also has, in reserve pursuant to the Prathanabat, several hundred million tons of limestone and the said reserves, if not used before the expiration of the Prathanabat, would not be usable after the expiration date, therefore, the Defendant does not have any cause or necessity to the engage in mining activity outside the designated area.

On 13 December 2019, the Civil Court ordered the Company to return the shale for cement production industry totaling 1,220,559.82 metric tons back to the area where the mining activity was done and restore such area to the previous condition or pay the compensation consisting of the value of the shale and royalty fee to the government in the amount totaling Baht 326,499,751.86 together with 7.5 percent per annum interest calculating from the date of the violation (2 June 2016) until the date of the complaint filing (274 days) making the interest to be Baht 18,382,383.29. The total amount from combining the principal and interest, is the amount of Baht 344,882,135.15. The Court also ordered that the interest on the principal amount of Baht 326,499,751.86 in the rate of 7.5 percent per annum be paid counting from the day after the complaint filing date until the payment is made in full together with the court fees in behalf of the Plaintiff and attorney fee of Baht 200,000.

The Company filed the appeal with the request for delay of judgement execution to Court on 5 June 2020. The case is pending consideration of the Court of Appeal and the date of hearing the Court of Appeal's judgement or order was set to be on 27 April 2021.

The complaint of this case described that the lawsuit is a civil claim in connection with the criminal offence for the part concerning the Department of Primary Industry and Mines' filling of report to the inquiry official requesting the inquiry official to commence the criminal proceeding against the Company for unlawful mining activity without permit; and the inquiry official issued the opinion that this case shall not be prosecuted and later on, the District Attorney also concurred and issued the final order that the criminal case will not be prosecuted against the Company, thus, the criminal case is final.

Incidentally, the information regarding cases 1) - 7) above are under the consideration of the court, the above cases are not final. The Company and the legal advisors hereby opines that based on the evidence and information the Company possesses, the Company did not commit any wrongful acts against the plaintiff as detailed in the complaints; the plaintiff claimed that the defendant committed wrongful action against the plaintiff, therefore, the plaintiff has the burden of proof to prove that the defendant had committed such act as the plaintiff claimed and since the plaintiff had not presented the evidences which show that in fact, the defendant had committed wrongful act against the plaintiff, the, the court could consider to dismiss the case. However, the judgment depends on the consideration and discretion of the court. As at 31 December 2020, the outcome of lawsuit is not yet final, the Company has not recorded a provision for liability of lawsuit in the financial statements.

- 8) On 16 December 2019, individuals in total of 222 people sued Energy Regulatory Commission (ERC) et al to the Central Administrative Court which a subsidiary was listed as the 5th Defendant. The Plaintiffs requested that the approval of Environmental and Health Impact Assessment (EHIA) report for the project of 150 megawatts thermal power plant, the license to operate electricity generating business and the construction approval of the subsidiary be revoked. The Plaintiffs also requested that the Court take evidence out of Court and issued an interim measure and ordering that the electricity generating system be temporarily stopped until the final decision is reached.

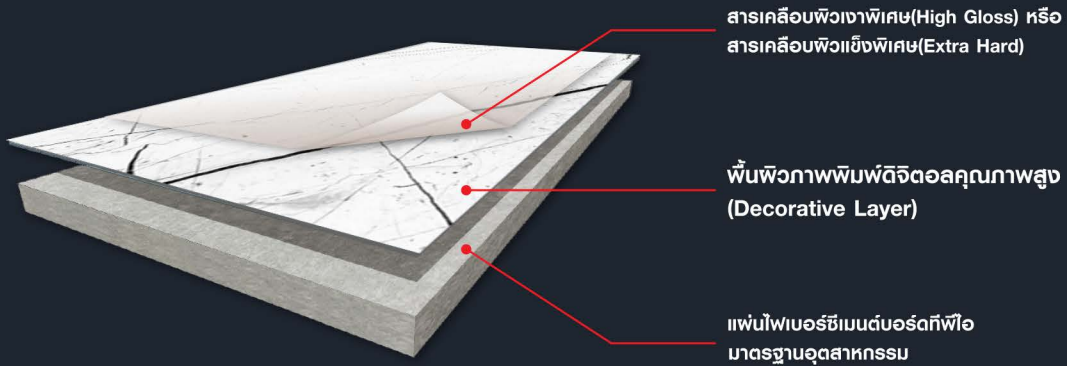
On 25 December 2019, the Court inquired both Parties in considering the request for interim measure and rendered its decision on 28 January 2020 denied the request for interim measure due to the lack of reason to believe that the license to operate electricity generating business of the subsidiary is unlawful.

On 31 January 2020, the Court issued an order accepting the complaint and requesting the subsidiary to file the answer. The lawyer submitted the answer to Court on 1 July 2020. The case is under the Court consideration.

On 7 December 2020, the Court sent the objection to the answer of the 5th Defendant and requested the subsidiary to submit additional answer to the Court within the prescribed period which shall be due on 20 February 2021, the case is under process of preparation of the additional answer.

The subsidiary's legal consultant considered the complaint and its appendixes and hereby opines that the subsidiary lawfully and transparently received the license to operate the electricity generating business and the construction approval from the competent authorities, in accordance with the applicable laws and that the relevant public official have lawfully and honestly performed their duties without any conflict of interest in issuing the said license. The complaint of the Plaintiffs is untrue. As the case is in the preparation for answer, the subsidiary has causes to relieve itself of any liability generated from the complaint depending on the Central Administrative Court Decision. Moreover, the subsidiary has pressed charges against the 222 Plaintiffs to the Muak Lek police station, Saraburi, for taking the false information to charge the person in the Court. The case is under the investigation of the police.

For all above lawsuit, the Group's legal consultant opines that, based on the Company's evidences and information, the Company has a chance to defend itself in the court trial depending on the consideration of each courts.



นวัตกรรมใหม่ล่าสุดภายใต้การพัฒนของบริษัท ทีพีโอ โพลีน โดยผสานความแข็งแรงของผลิตภัณฑ์ Fiber Cement กับระบบการพิมพ์สี Digital ทำให้เกิดลวดลายเสมือนหินอ่อน เพื่อสร้างมิติใหม่ให้กับการตกแต่งบ้าน ช่วยให้บ้านของคุณ สวยงาม เลอค่า ดึงดูดการตกแต่งด้วยวัสดุจากธรรมชาติ นอกจากนี้ แผ่นตกแต่งลายไม้และลายหินอ่อนสามารถลดรอยต่อระหว่างแผ่น ทำให้ลวดลายมีความต่อเนื่องไร้จุดสะดุดตาทุกตารางนิ้ว



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