

Part 1

1. Policy and Overview of Business Operation

1.1. Vision, Mission, Objective and Strategy of the Company



Values



Our core values, enunciated in the acronym S.C.O.R.E., inspire our internal and external interactions.

Seamlessness

We leverage synergies across hierarchies, functions and locations.

Care

We value our people and are committed to their development. We take a long-term approach to all our relationships.

Ownership and Responsibility

We honor our commitments towards internal and external stake-holders.

Excellence

We stretch ourselves continuously to improve the way we work. We constantly pursue newer and better ideas, processes, products and practices.

1.2. Background of the Company and key developments

Polyplex (Thailand) Plc. (“PTL” or “the Company”) was incorporated as a private company on March 26, 2002 to manufacture and distribute PET film (polyethylene terephthalate film or polyester film). In August 2004, the Company was converted into a Public Company, with a registered capital of Baht 960 million and the IPO was subsequently made in December 2004. Current Registered and Paid up capital of the Company is Baht 900 million. The Company is promoted by Polyplex Corporation Limited (PCL) based in India and engaged in the same business as the Company for more than 29 years. As at 31st March, 2019, PCL has 51% stake in the Company through both direct and indirect shareholding and the balance 49% is with the general public.

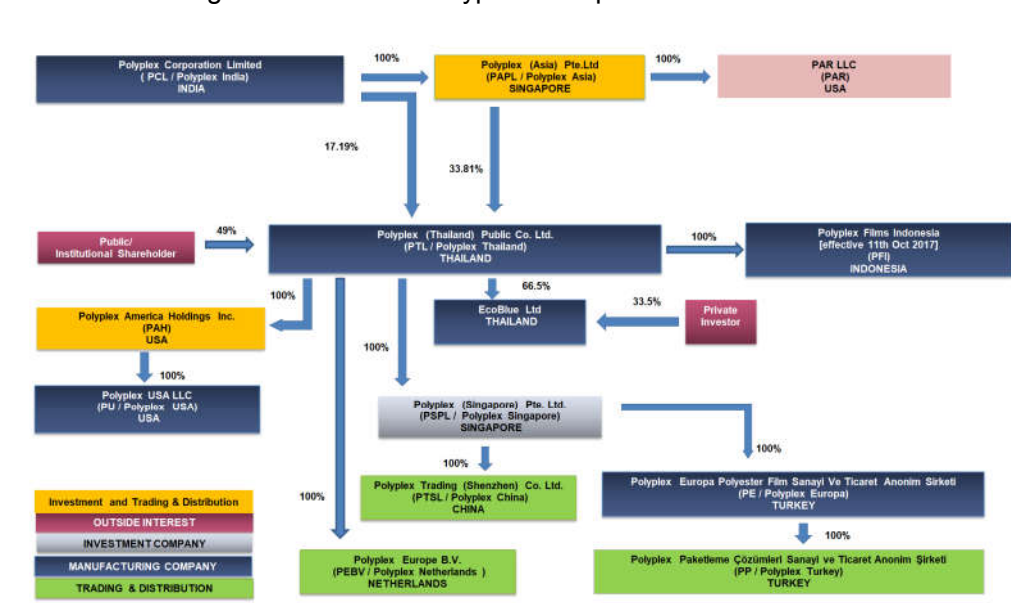
Past key changes and developments in the Company are as follows:

March 2002	PTL was incorporated by PCL, which is a listed company (on the Bombay Stock Exchange as also National Stock Exchange) in India to set up a greenfield expansion for manufacture of Thin PET film.
April 2003	Startup of the Thin PET film line 1 in Thailand
November 2003	Startup of the Thin PET film line 2 in Thailand
August 2004	Registration was completed to transform the Company into a public company.
September 2004	Start up on PET resin batch plant in Thailand.
December 2004	IPO of 240,000,000 shares at the price of Baht 6.90 per share.
February 2005	Startup of PET resin continuous plant in Thailand.
August 2005	Startup of Metallizer Line 1 in Thailand.
December 2005	Startup of the first Thin Pet film line in Turkey implemented under a 100% subsidiary company Polyplex Europa Polyester Film San ve Ticaret. A.Ş.
January 2006	Acquisition of 80.24% in a Trading Distribution company in USA and renamed it Polyplex (Americas) Inc.
March 2006	Startup of Metallizer Line 1 in Turkey
December 2006	Startup of PET resin plant in Turkey
April 2008	Startup of Extrusion Coating Line 1 in Thailand
May 2008	Startup of Thin PET film line 2 in Turkey Metallizer Line 2 in Thailand as well as Turkey
September 2009	The Trading company in China - Polyplex Trading (Shenzhen) Co. Ltd was set up as a 100% subsidiary and capital injected through Polyplex (Singapore) Pte Ltd
March 2010	Startup of the Cast Polypropylene line (plain CPP) and Metalliser (Line 3) in Thailand
March 2012	Startup of the Silicone Coating line in Thailand
July 2012	Polyplex USA LLC acquired Metalizing assets from Vacumet Plastics division in Austell, Georgia, USA
August 2012	Set up of a Liaison office in Malaysia
January	Acquired the balance 19.76% from the minority shareholders of Polyplex

2013	(Americas) Inc.(PA) USA and merged the Trading company with the manufacturing subsidiary PUL.
April 2013	Startup of Thin PET Film line 1 in Decatur, USA under a 100% subsidiary company – Polyplex USA LLC
April 2013	Set up a Trading and distribution company in Netherlands – Polyplex Europe B.V, as a 100% subsidiary of the Company.
June 2013	Startup of the Extrusion Coating line 2 in Thailand.
September 2013	Set up of a Trading and Distribution Company in Turkey – Polyplex Paketleme Çözümleri Sanayi ve Ticaret A.Ş. as a 100% subsidiary of Polyplex Europa Polyester Film San ve Ticaret. A.Ş.
October 2013	Startup of Thick PET Film line & Blown PP film line in Thailand
December 2013	Startup of the recycling plant in Thailand implemented under a new subsidiary - EcoBlue Limited
February 2014	Startup of the PET resin plant for Thick PET film line in Thailand
March 2014	Startup of Offline coater in Polyplex Europa Turkey
October 2014	Set up of a Liaison office in Korea
October 2014	Startup of PET Resin plant in USA
October 2014	Startup of Metalliser Line 4 in Thailand
January 2015	Startup of Metalliser Line 3 in Turkey
January 2015	Disposal to Indorama Netherlands B.V, of 100% stake held in Polyplex Resins Sanayi ve Ticaret A.S (PR) by its wholly owned subsidiary Polyplex Europa Polyester Film San ve Ticaret. A.Ş. (PE), Turkey and its parent company Polyplex (Asia) Pte Ltd (PAPL), [67% held by PE and 33% held by PAPL]
March 2016	Board approved and recommended to the shareholders for their approval, the increase in Share capital through a Rights offering of 100 million Ordinary shares in the ratio of 1 new share for every 8 existing shares, at an Issue price of Baht 6.40/share.
April 2016	Rights Offering as above, approved in the Extra Ordinary General Meeting of shareholders
May 2016	Rights Offering fully subscribed including oversubscriptions and Baht 640 million capital successfully raised
November 2016	Board approved the new replacement metallizer project at Polyplex USA LLC
May 2017	Board approved a second Blown PP film line project at Thailand
July 2017	Board approved a Greenfield Thin PET film line project in Indonesia at a total investment cost of USD 95 million (including USD 15 million for working capital)
October 2017	A new subsidiary in Indonesia – PT Polyplex Films Indonesia was set up in October 2017 as a 99.995% subsidiary of Polyplex (Thailand) Plc and Equity of IDR 202. 5 billion was injected in November 2017.
May 2018	Equity of IDR 135 billion was injected in May 2018
August 2018	Board of PTL approved the liquidation of the Trading company in China
August 2018	Board approved the setting up of a Representative Office in Japan to expand our market reach and further strengthen our market positioning in this premium market
June 2019	Board approved the proposal to set up a BOPP film line in Indonesia at a Capital Investment of USD 48 million

1.3. Shareholding structure

The shareholding structure of the Polyplex Group as on 31.3.2019 is:



Polyplex Corporation Ltd. (PCL)

PCL, the parent company operating for over 30 years since 1988, is one of the major producers and distributor of plastic film in India selling in both the domestic and overseas markets. It has been listed for several years on Bombay Stock Exchange and other Exchanges in India. Its paid up capital is INR 325.6 million (about Bt. 155.8 million).

PCL has the following production capacities as at 31st March 2019:-

Product	Annual Capacity	UOM
Polyester Film	55,000	MT
Polyester Chips	77,600	MT
Metallized Film	34,613	MT
BOPP Film	35,000	MT
Coated Films	286	Million Sqm
Holography Films	4,080	MT
Transfer Metallized Paper	83	Million Sqm

Its direct and indirect shareholding in the Company aggregate to 51% of the latter's paid up capital.

Polyplex has also evolved an equitable policy for distribution of markets, for common businesses, between its Indian, Thailand, Turkey, US and the upcoming Indonesia operations based on the several factors like product range, delivered cost to customer, supply lead times and preferential duty access. Based on the same, PTL would serve South East Asia, Asia Pacific, China, Australia & New Zealand. PCL would serve South Asia. Turkey operations will mainly cater to Europe, Africa and CIS/Russian markets and USA operations would focus mainly on North American market.

The Polyplex Group also has a policy on future investments in polyester film / related areas between the Company and its parent company. Investments in India/SAARC region would be decided and made by PCL and its other subsidiaries (excluding the Company) while investments in Thailand / ASEAN region as well as other countries would be in all likelihood be made by PTL or the subsidiaries in which the Company has a major stake. The above is subject to availability of Investible cash / ability to borrow debt by the existing / preferred Company as per the policy. In line with this Investment policy, the investment in Indonesia is fully owned by PTL.

Polyplex (Asia) Pte. Ltd. (PAPL)

PAPL was established as a 100% subsidiary of PCL in July, 2004 and is now a major shareholder of PTL holding 33.81% as on 31st March 2019. The issued and paid up capital of PAPL as of March 31, 2019 stands at USD 1.13 million.

Polyplex (Singapore) Pte. Ltd. (PSPL)

PSPL was established as a 100% subsidiary of PTL in July 2004, as a wholly owned investment company. Subsequently, PSPL invested in Polyplex Europa Polyester Film Sanayi Ve Ticaret Anonim Şirketi (PE), through Share capital injection as well as by extending subordinated loans, to set up a manufacturing factory in Turkey so as to serve the demand in European and other proximate markets.

In September 2009, PSPL set up a trading company in China, Polyplex Trading (Shenzhen) Co Ltd (PTSL) by investing \$ 400,000 as share capital.

The issued and paid up capital of PSPL (including Preference Share Capital) as of March 31, 2019 stands at Euro 9.14 million.

Polyplex Europa Polyester Film Sanayi Ve Ticaret Anonim Sirketi (PE)

PSPL had incorporated a 100% owned subsidiary company, PE in Turkey for setting up a Greenfield polyester film plant to cater to the European and other proximate markets. The commercial operations started in December, 2005 with the start up of the first thin PET film line. The first Metallizer plant started production in March, 2006. The PET resin plant commenced commercial production from December, 2006. The second thin PET film line and Metallizer commenced commercial production in May 2008. The latest addition to its assets has been an Offline Coater which started commercial production in March 2014 and a third Metallizer which started commercial production in January 2015. The issued and paid up capital of PE, including Additional Contribution from PSPL, as of March 31, 2019 stands at Euro 8.8 million.

Polyplex Trading (Shenzhen) Co. Ltd (PTSL)

In the financial year 2009-10, PTL invested in the setting up of a wholly owned Trading Company in Shenzhen, China, through its 100% held Investment Company in Singapore, PSPL. The issued and paid up capital of PTSL as at 31st March 2019 is USD 0.4 million. In its meeting held in August 2018, the Board of PTL has approved the liquidation of this Trading Company as the volumes sold by the Group in China are small quantities of specialized films, which can be supplied directly from each of the manufacturing locations rather than through the Trading entity. The liquidation is under way and expected to be completed within this Financial Year.

Polyplex America Holdings Inc (PAH).

In FY 2011-12, PTL invested in setting up a 100% Investment and Trading & Distribution Company in USA. PAH has further invested in Polyplex (USA) LLC, a manufacturing facility. The issued and paid up capital of PAH (including the Additional Paid-In Capital) as on 31st March'2019 is USD 46.62 million.

Polyplex USA LLC (PUL)

Polyplex USA LLC, Decatur, Alabama, was established in FY 2011-12 as a 100% subsidiary of PAH. This is the first manufacturing base of Polyplex in USA. The thin PET film line has started commercial production in April, 2013 and the PET Resins plant project commenced commercial production in October 2014. The members' contribution which represents the paid-up capital as on 31st March'19 is USD 46.2 million.

Polyplex Europe B.V

Polyplex Europe B.V was established in April 2013 as a 100% subsidiary of Polyplex (Thailand) Plc. The registered capital is 3 million Euro of which Euro 0.2 million has been called and paid up till 31st March'19. This company is mainly engaged in the warehousing and distribution of different products of the Company in the European market.

Polyplex Paketleme Cozumleri Sanayi ve Ticaret A.S

In FY 2013-14, Polyplex Europa Polyester Film Sanayi ve Ticaret Anonim Şirketi (PE) had established a company in Turkey, named Polyplex Paketleme Çözümleri Sanayi ve Ticaret A.Ş. holding 100% of its share capital. This company is mainly engaged in trading of PET Film, PET chips and other products of the Company. The Registered Share capital of this company is TRY 100,000 as of March 31, 2019, which has been fully called and paid up.

PT. Polyplex Films Indonesia

In October, 2017, PT. Polyplex Films Indonesia (PT PFI) was established with an Authorized and Registered Share Capital of IDR 540 billion. PT PFI is owned 99.99% by PTL and 1 share is held by Mr. Amit Prakash, to comply with a regulatory requirement in Indonesia, of having a minimum of 2 shareholders. As at 31st March, 2019, the Called up and Paid up Share capital of PT PFI is IDR 337.5 billion.

2. Nature of business

2.1. Revenue structure of the Company

PTL's standalone and consolidated sales value classified by regions is shown below:

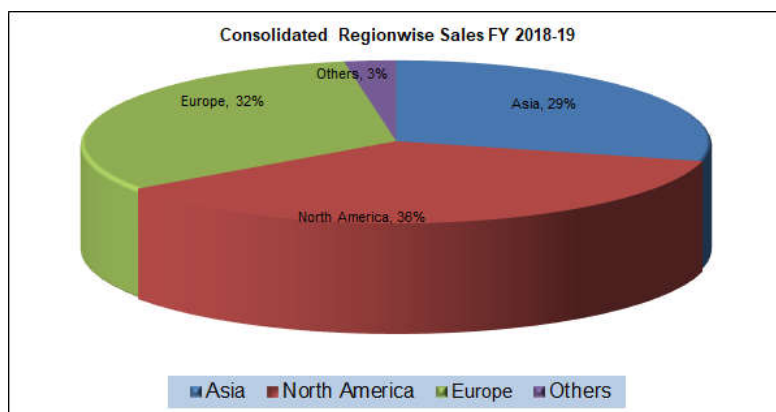
STANDALONE	2016-17		2017-18		2018-19	
Customers	Bt. million	%	Bt. million	%	Bt. Million	%
Exports						
Asia	2,703.52	48.84	2,749.40	49.84	3,143.34	45.43
North America	1,136.52	20.53	1,200.68	21.77	1,700.74	24.58
Europe	223.78	4.04	255.87	4.64	460.18	6.65
Others	198.38	3.58	156.71	2.84	177.67	2.57
Total exports	4,262.21	76.99	4,362.66	79.08	5,481.93	79.23
Domestic Sales	769.69	13.90	840.47	15.24	858.16	12.40
Sale of chips/others ¹	238.49	4.31	274.14	4.97	281.72	4.07
Total sales revenues	5,270.38	95.20	5,477.27	99.29	6,621.81	95.70
Other revenues ²	265.60	4.80	39.18	0.71	297.37	4.30
Grand total	5,535.99	100.00	5,458.91	100.00	6,919.18	100.00

CONSOLIDATED	2016-17		2017-18		2018-19	
Customers	Bt. million	%	Bt. Million	%	Bt. Million	%
Exports						
Asia	2,739.30	22.96	2,762.03	21.70	3,162.70	20.72
North America	1,760.63	14.76	1,815.46	14.26	2,404.06	15.75
Europe	2,656.20	22.27	3,080.74	24.21	3,511.09	23.00
Others	466.77	3.91	360.01	2.83	374.91	2.46
Total exports	7,622.91	63.90	8,018.24	63.00	9,452.77	2.46
Domestic sales						
- PTL (Thailand)	769.69	6.45	840.47	6.60	858.16	5.62
- PE (Turkey)	799.65	6.70	869.55	6.83	950.81	6.23
- PUL (USA)	2,069.64	17.35	2,539.70	19.95	2,637.57	17.28
Total Domestic sales	3,638.98	30.51	4,249.73	33.39	4,446.54	29.13
Sale of chips/others ¹	276.92	2.32	404.99	3.18	846.88	5.55
Total sales revenues	11,538.81	96.73	12,672.95	99.57	14,746.18	96.61
Other revenues ²	390.25	3.27	54.50	0.43	517.86	3.39
Grand total	11,929.06	100.00	12,727.46	100.00	15,264.05	100.00

Note:

1) Sale of chips/others includes both domestic and export sales.

2) Includes Exchange gain (if any), Export Incentive, interest received, etc.



2.2. Business Goals

The vision of Polyplex is to continuously grow, create value and establish global leadership in the plastic film business through building trusted partnerships with Investors, Customers, Business Associates and Employees. Keeping this vision in mind, Polyplex has been moving towards establishing itself as a Preferred packaging substrate provider as against just a PET thin film supplier, by undertaking expansions for manufacturing BOPP film, CPP film and Blown PP/ PE films, which are other Packaging substrates used by Converters, in addition to PET thin film. The Thick PET film line in Thailand which started commercial production in October, 2013, is Polyplex's first step into the Thick Film segment which has helped in diversifying its product and customer portfolio. Over the last few years, the Company has been able to ramp up sales to optimum levels and supplies the films to many major Photo Voltaic back sheet manufacturers and has also augmented the PV product line with white film for top layer and integrated film combining two layers into one. Besides increasing production efficiencies, company has started to participate in a few high value segments in Electronics application.

The business goal is to increase market share in various regional markets - through geographically diversified manufacturing presence, increased market penetration in key markets and build a diversified portfolio of products like Metallized films, Clear films, Transparent Barrier films, Offline Coated films, Thermal Lamination films, Silicone Coated film, Blown films, Chemically Coated films, higher recycled-content films and other grades of packaging films like CPP, BOPP etc. The Thin PET film line in USA which started in April, 2013, was a strategic investment in this direction, to enable the company to increase its market share in American continent by moving closer to the customers and becoming a preferred on-shore supplier as against an off-shore or near-shore supplier in the past. Similarly, the Greenfield Thin PET film line project under implementation in Indonesia is another strategic investment to move closer to the customer and become a preferred on-shore supplier as against an off-shore or near-shore supplier in the past. The newly announced BOPP line in Indonesia is another step towards diversifying the product portfolio and becoming a one stop solution for all packaging film needs of our customers.

2.3. Promotion certificates

PTL has been granted eleven BOI promotion certificates, details of which are as below:

S.No	Certificate No.	Type of business	Date granted
1	1321(2)/2545	PET film	20-May-02
2	1287(2)/2546	PET film and PET Resin	11-Jun-03
3	1159(2)/2548	Metallized Films	22-Feb-05
4	1261(2)/2550	Thermal Lamination Films	14-Mar-07
5	1044(2)/2551	Metallized Films	10-Jan-08
6	1110(2)/2552	CPP film (Plain and Metallized CPP)	4-Feb-09
7	1719(2)/2553	Silicone Coated Film / Blown PP	14-July-10
8	1705(2)/2555	Thermal Lamination Film (Line 2)	12-May-2012
9	1827(2)/2555	PET Thick Film and PET Resin	21-May-2012
10	1357(2)/2557	Metallized Films	20-March-2014
11	61-0672-1-18-1-0	Blown Film	11-June-2018

By virtue of the provisions of the Board of Investment Promotion Act B.E. 2520, the Company has been granted certain standard promotional privileges on the manufacturing and distributing the polyester film/resin/Thermal Lamination film/CPP film/ Silicone Coated/Blown film as per the following sections: 25, 26, 27, 28, 31, 34, 35(1), 35(2), 35(3), 36(1), 36(2) and 37 respectively. The Company must comply with certain conditions and restrictions provided for in the promotion certificate. Details of the privileges of each of the above sections are available at www.boi.go.th

2.4. Business Operations by each product line

Manufacture and Distribution of Polyester thin film (Polyethylene Terephthalate Film, also called PET film, sold under the Brand name 'Sarafil'), is the core business of the Company, including its subsidiaries. It focuses mainly on 3 key segments - Packaging, Industrial and Electrical. The customers use the company's products as raw material to produce their end-products which are then sold to their consumers. Some examples of products made from PET thin film are Coffee/Tea bag, snack bag, softener bag, detergent bag, wire/cable wrap and hot stamping foil.



In April 2008, the company started manufacturing a downstream value added product called 'Thermal Lamination film'. This sold under the brand name 'Saralam'. In this product line, the PET film, Nylon film or BOPP film is used as the base film, and then extrusion coated with adhesive resins like LDPE or EVA, based on the

requirement of the end use application to be catered to. After the start up of the second line in June'13, the Company has increased its capacity of this product with an aim to increase the value added product sales in its mix. The Offline coated film line under implementation in Thailand would further enhance high value add-product portfolio from this business

Some of the applications of Saralam are as under:



In line with its objective of becoming a complete packaging solution provider, rather than just a thin PET film supplier, the company has in March 2010 started the manufacture of Cast polypropylene film. The company manufactures and sells plain & metallized CPP film under the brand name '**SaraCPP**'.

In an effort to continue its objective of diversifying the product as well as the customer base, Polyplex set up a Silicone Coating film line in Thailand which commenced commercial operations in March'12 under the brand name "**Saracote**". In line with the Company's strategy to increase specialty products, a project for a second Silicone Coated film line is being set up in Thailand and expected to start operations within July 2019.

Some of its applications are as under:



The Blown film line in Thailand is another concentric diversification by the Company in the plastic film business. This film is mainly used as a base film for the Silicone Coated film, as well as sold in the merchant market. Based on the success of the first Blown film line, the Company invested in a second Blown Film line in Thailand and successfully commissioned the same in June 2018.

The Thick PET film line in Thailand is another related diversification by the Company which has helped the company to cater more to the industrial and electrical segments as compared to the packaging segment for Thin PET film. Some of the common applications of Thick PET film are as under:



As a sustainability initiative, the Company had invested in a project to recycle and provide sustainable solution for film based process waste. The project had started commercial operations in December, 2013 in Thailand, under the Company's subsidiary - EcoBlue Limited. This subsidiary has successfully commissioned the second recycling line in January 2019.

2.4.1.Product Description

The range of products offered by the company is as under:

A.) Transparent thin PET films

- Plain & Corona treated
- Chemically coated
- High adhesion films
- Ultra clear films
- Co-extruded films
- rPET films
- Bio Degradable Films
- Bio Content Films

B.) Metallized PET films

- Normal Metallized
- Semi Metallized film (low Optical density)
- High barrier films
- Ultra High Barrier Films

C.) Specialty Films

- Twist films
- Anti static films
- Heat Sealable films
- Isotropic Films, High Friction Films, etc
- Matte films
- Offline Coated Transparent Barrier films
- Alox Coated Transparent Barrier Films

- Off-line coated Sealable-Pealable films

D.) Thermal Lamination Film

- Gloss PET Thermal Film
- MATTE PET Thermal Film
- BOPP Thermal Film
- Metallized Thermal Film
- Nylon Thermal Film

E.) Cast Polypropylene film - Product range:

- Lamination & Conversion grade film
 - Transparent film for lamination & surface printing
 - High hot tack film for candy packing
- Metallizable grade film - Transparent heat sealable film for vacuum metallization
- Twist grade film
- Retort grade film

F.) Siliconized Films (Under the brand name 'Saracote') in PET and PP films are used in various applications such as:

- Shingle roofing tapes
- Release liner in pressure sensitive labels.
- Release liner in pressure sensitive adhesive tapes.
- Release liner in medical and hygiene products.

G.) Thick PET Film – main sub categories are as under:

- Milky White
- Clear/Ultra Clear
- Transparent
- Hazy Film
- Opaque White Films

H.) Blown Film - Main sub categories are as under

- Sealant PE film for Packaging Application
- Multilayer / Coloured PP films for Industrial applications
- Metallised PE films for packaging Applications

2.4.1.1. Product Characteristics

a) Characteristic of PET film

PET film characteristic properties are as follows:

- Optically brilliant, clear appearance
- Excellent mechanical strength and toughness
- Good dielectric properties
- Good flatness and coefficient of friction (COF)
- Tear-resistant and puncture - resistant characteristics
- Excellent dimensional stability over a wide range of temperatures
- Very good resistance to most common solvents, moisture, oil, and grease

- Excellent barrier against a wide range of gases

PET film can also be modified with varying degrees of shrinkage, opacity & colors and different surface textures for it to be used over a wide range of applications.

A wide range of chemical treatments (in addition to corona) can be applied to PET film during its manufacture to help it adhere to various coatings.

b) Characteristics of CPP Film

- Excellent Heat sealing properties/ High heat resistance
- Exceptional Optics
- Good dimensional stability and barrier properties
- Excellent printability
- Metallized CPP - Significantly increases barrier properties

c) Characteristics of Thermal Lamination Films

- High gloss & stiffness provide longevity to laminated media
- Coated adhesive forms inseparable bond with inks/papers
- Surface is conducive to add-on processes like Hot stamping, UV coating
- Improves visual appeal of product

d) Characteristics of Silicone Coated Films

- Silicone Coated film is designed to provide excellent carrier to pressure sensitive material
- Single/ Double sided coated film
- Superior tensile strength, dimensional stability and caliper control as compared to other Liners

e) Characteristics of Blown PP/PE Film

- Excellent off-line coating ability
- Exceptional Gauge control
- Ability to match color shades in Films
- Economical Oxygen Barrier Films
- Metalizable grades

2.4.1.2. End Use segment

Thin PET film can be used in the following 3 key segments

- **Packaging** - Clear and Metallized thin PET film can be used as part of the outer layer and middle layer of the flexible packaging such as coffee bag, snack bag, softener bag, and detergent bag.
- **Industrial** -Comprising of Hot stamping foils, flexible air-conditioning ducts, labels /ID cards, lamination products and many more.
- **Electrical** - Wire and cable wrap, membrane switches, flexible printed circuits, capacitors and motor insulation.

Thick PET film is mainly used in the Industrial and Electrical segments

- **Electrical** – This segment accounts for almost 60% - 65% of Thick PET film market and is driving the growth in demand of Thick PET films. This segment can be further sub-classified under the following:
 - **Display**: Flat panel display, Advance display, Holographic, STN Reflectors, Anti-reflection, Touch Panels (ITO), & Optical Applications.
 - **Electrical** : Electrical Insulation, Cable Wrap, Transformers, Slot Liners, Wedges, and Phase Insulation for Motors and Generators.
 - **Electronics** :Photo tool, Photo resist, Flexible Printed Circuits (FPC), Membrane Touch Switch (MTS), Multi-Layer Ceramic Capacitors (MLCC), Optically Clear Adhesive (OCA) liners and Medical Sensors
 - **Solar** : PV Back sheet (Protective film), Insulation film, Protective film for Top Surface.
- **Industrial** – Window Film, Laminating Film, Credit & Prepaid Cards, Medical Film etc are the key applications.

Thermal Lamination films mainly cater to the following applications:

- Thermal Lamination of documents or printed media
- Reflective Insulation
- Flexible packaging
- Rigid packing using printed corrugated carton board

CPP films can be used in the following key segments:

- **Packaging** - CPP film is used as the inner most layer in food packaging, due to its excellent heat-sealing properties. It may also be used in Textile packaging, packaging of health care products/ consumer products etc
- **Industrial** – Hot fill bags & liners, Industrial adhesive tapes, Interior automotive trim panels etc

Silicone Coated Films mainly cater to the following applications:

- PET Release liners for labels
- PET Shingle tapes for the roofing industry
- PP release liners for labels/stickers.

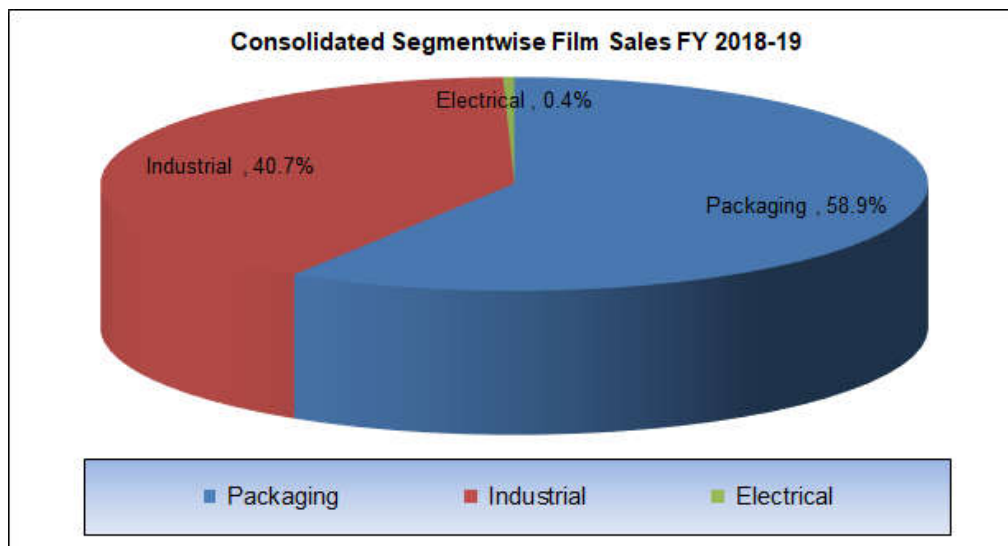
The segmental break-up of revenue (PTL Standalone and Consolidated) from Film sales [Plain (Thin & Thick) & Metallized PET films, Offline Coated films, Thermal Lamination films, Silicone Coated Films, CPP film and Blown films] are as follows:

STANDALONE SALES	2016-17		2017-18		2018-19	
Segment	Bt. Mn	%	Bt. Mn	%	Bt. Mn	%
Packaging Use	2,730.54	54.26	2,638.33	50.71	3,283.20	51.78
Industrial Use	2,276.22	45.24	2,511.32	48.27	3,026.74	47.74
Electrical Use	25.14	0.50	53.48	1.03	30.15	0.48
Total Film Sales	5,031.90	100.00	5,203.14	100.00	6,340.09	100.00

CONSOLIDATED SALES	2015-16		2017-18		2018-19	
Segment	Bt. Mn	%	Bt. Mn	%	Bt. Mn	%
Packaging Use	6,248.97	55.49	7,045.69	57.43	8,186.91	58.90
Industrial Use	4,950.40	43.96	5,149.26	41.97	5,651.24	40.66
Electrical Use	62.52	0.56	73.02	0.60	61.16	0.44
Total Film Sales	11,261.89	100.00	12,267.97	100.00	13,899.30	100.00

Note:

- i. Sales of all types of films have been segregated above, depending on end use application of each type of product sold.



2.4.1.3. Products with similar properties

In certain applications like graphics and magnetic recordings, substituting PET film would result in compromising performance characteristics of the product (e.g., strength, flatness, clarity, tear resistance, thermal stability and chemical resistance). However, in other applications, for which certain PET film performance characteristics may not be needed, PET film competes with a wide variety of substitute materials. These applications tend to fall in the low end of the product range, where other plastic films (e.g., polyvinyl chloride, polypropylene, and polyethylene films) and paper may be considered as lower-priced substitutes. Applications for which a variety of substitute products may exist are primarily packaging and general-purpose industrial applications.

BOPP Films (Biaxially Oriented Polypropylene) is one such close substitute product type, which is comparable in terms of its broad physical and mechanical properties to Polyester films. However, there are pros and cons of using PET film or BOPP films and depending upon the application requirements, a choice of the substrate would be made. As a result of this, both PET films and BOPP films have largely demarcated pockets where one is preferred over the other.

A Comparison of BOPP Films and BOPET (Polyester) Films

Polyester film is considered as the premium plastic film in the flexible packaging industry. This is also reflected by the difference in the volume of the two products.

Features	BOPP	BOPET
Water vapour barrier	Excellent	Fair
Gas barrier properties	Poor	Acceptable/Fair
Break down voltage	Poor	Excellent
Machineability	Fair	Excellent
Printability	Fair	Excellent
Suitability for metallising	Fair	Excellent
Density (gm/cc)	Low (0.91)	High (1.39)
Strength	Fair	Excellent
Temperature Sensitivity	Poor	Excellent

Polyester film when stretched in both directions gives excellent dimensional stability, gas barrier properties, break-down voltage etc. BOPP, despite stretching is a softer film. Polyester film has better handling capabilities for fluctuations in temperatures etc. so it is easier to process and gives more efficiency. In tropical countries PET is also preferred due to its barrier properties, in plain and metallised version like for products where aroma retention is important require the use of PET; e.g. coffee, tea.

On the other hand, the low density of BOPP (0.91 Vs. 1.39 for PET) makes it a 'cheaper' alternative in packaging. However, the advantage of density is to some extent offset by the need to typically have a thicker film when using BOPP as compared to PET for the same application. Further, since PET is not ordinarily heat sealable, BOPP is preferred in heat sealable applications.

All over the world BOPP and PET have established their respective segments in the packaging market and overlap is insignificant. Even in times of decline in BOPP selling prices few years back, there was no visible impact on the growth in PET films consumption. This establishes the limited substitutability between the two products.

2.5. Business Strategy

Key elements of the strategy are:

- Attain cost leadership by way of capacity expansion and vertical integration.
- Continued focus on improvement in cost efficiency through Kaizens including debottlenecking and energy saving/ efficient investments
- Capture high growth markets and build good customer relationship.
- To build strong global delivery capabilities with a judicious mix of on-shore, near-shore and off-shore strategy.
- Further broad base the product portfolio by investing in high value added products and upgrading technical and R&D capabilities.
- Concentric and related diversification to bring stability in earnings.
- Consolidate market position through our strong presence in all the key geographies.
- Systems are created and strengthened to enhance cross-learning and sharing best practices/benchmarking across various units and businesses of the Group to enhance efficiency and synergy.
- Focus on sustainability initiatives including development of new sustainable products using higher recycled content and also to adopt, sustainable processes.

Moving in this direction, the following initiatives have been taken by the Company:

- The setting up of 2 successive Thin PET film lines in Thailand was the first step towards achieving cost leadership position along with diversification of customer base.
- The 2 Thin PET film lines in Turkey has helped improve its cost structure to service its expanding customer base in Europe, Middle East, Africa & CIS/Russia.
- The Company's investment in the PET Thin film line in USA is another step towards geographically diversifying its manufacturing base. This has helped the Company to participate in the growth in the flexible packaging segment in the American region and increase its market share.
- The upcoming capacity at Polyplex Indonesia, being the world's fastest and widest line with highest capacity in the region, is expected to be the most cost competitive line in the Group and will enable us to capture the demand growth in all key markets.
- Backward integration into the manufacturing of PET chips has further strengthened the cost structure of the Company at all locations. In addition, this has helped maintain the quality of input resin and hence of final product.
- Increase in its Metallizing capacities across all its manufacturing locations has helped the Company to improve its value-added product portfolio.
- The 2 Extrusion Coating lines in Thailand has helped the Company to further increase the share of value-added products, in its sales portfolio.
- With the start-up of the Silicone Coated film in Thailand in 2012, the Company has been able to increase its presence in new product segments and thereby reduce the impact of the cyclical nature of the Thin Polyester Film industry. The Company is in the process of setting up the second Silicone Coated film line in Thailand, which is expected to start operations by July 2019.
- The PET Thick film line in Thailand should continue to help the company to bring about more stability in earnings, as this segment is generally more stable in comparison to the PET Thin film segment.
- The Blown film line helped Polyplex to enter into the Silicone coated PP film market and based on the success and positive experience of the first line, the Company invested in the second Blown PP film line to expand the capacity and increase its market share. The new line has commenced operations in June 2018.
- The setting up of a recycle plant in Thailand for providing sustainable solution for film-based process waste is the first step by the Company towards the Green Initiative. This subsidiary has successfully commissioned the second recycling line in January 2019.
- Various types of customer engagement initiatives by the Company have helped it to not only retain key customers, but also increase its customer base across the globe.
- The wide network of distributors and agents has helped the Company to gain access to all key markets of the world and ensure a geographically diversified customer portfolio with no significant exposure or dependency on any single large customer or group.
- The Liaison offices in Malaysia, Korea and the new Rep office established in Japan in 2018 help the Company to understand these critical markets in a better way and increase our market penetration.

- The newly announced BOPP line in Indonesia will further diversify the product portfolio and support the strategy of Polyplex Group, to be a preferred one stop supplier for all flexible packaging needs of its customers.

2.6. Distribution Channel

The Company distributes its products to both domestic and overseas markets, with main focus put on the latter.

The product distribution is being made directly to the end users using its own marketing arms in USA, Turkey and Netherlands, its Representative offices in Malaysia, Korea and Japan, as well as commission agents across the globe. The indirect channel is mainly through distributors in designated areas. The sales through distributors and commission agents help support and even boost the sale volumes as these distributors and agents are in close proximity of the target markets, hence allowing for closer service provision to the customers with rapid delivery, and also better market penetration to access small customers.

Value of total film sales to end users and distributors are as follows. Sales made through commission agents are included in 'End Users' segment.

STANDALONE SALES	2016-17		2017-18		2018-19	
Customers	Bt. million	%	Bt. million	%	Bt. million	%
End Users	2,180.82	43.34	2,299.07	44.19	3,125.86	49.30
Distributors	2,851.08	56.66	2,904.07	55.81	3,214.23	50.70
Total	5,031.90	100.00	5,203.14	100.00	6,340.09	100.00

CONSOLIDATED SALES	2016-17		2017-18		2018-19	
Customers	Bt. Million	%	Bt. million	%	Bt. Million	%
End Users	7,507.54	66.66	8,287.78	67.56	10,091.68	72.61
Distributors	3,754.35	33.34	3,980.19	32.44	3,807.62	27.39
Total	11,261.89	100.00	12,267.97	100.00	13,899.30	100.00

2.7. Markets and competitive environment

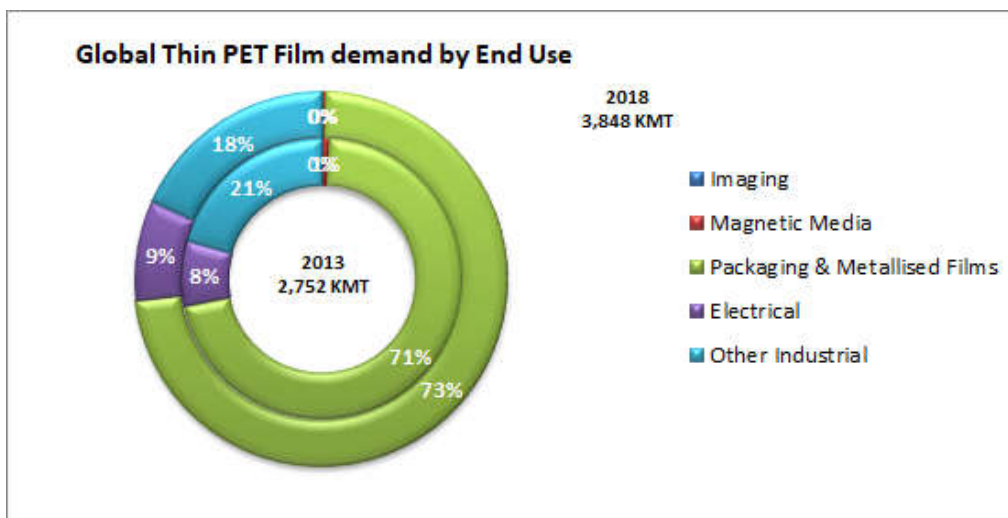
2.7.1. Global Demand and supply

Thin PET Film

The growth in packaging has over the years shifted the production and usage patterns of Thin PET films. The Company's relevant segments of Packaging, Industrial and Electrical constitute almost 100% of the total demand as the traditional high-end technology segments like magnetic media and imaging segments have become redundant due to technology transformation.

Better packaging not only improves the shelf life of the products but is also essential for improving product appeal in a highly competitive consumer goods industry. Flexible packaging also plays a key role in source reduction on the principle of 'use less waste in the first place' which has ensured higher-than-GDP growth in the flexible packaging industry across the globe. PET film, being a higher-end substrate within packaging, has grown more rapidly than other substrates, growing at an average of about 5-8% per annum, globally. Demand in packaging is quite resilient as it relates to consumption of food products and consumer staples which are to a large extent non-discretionary in

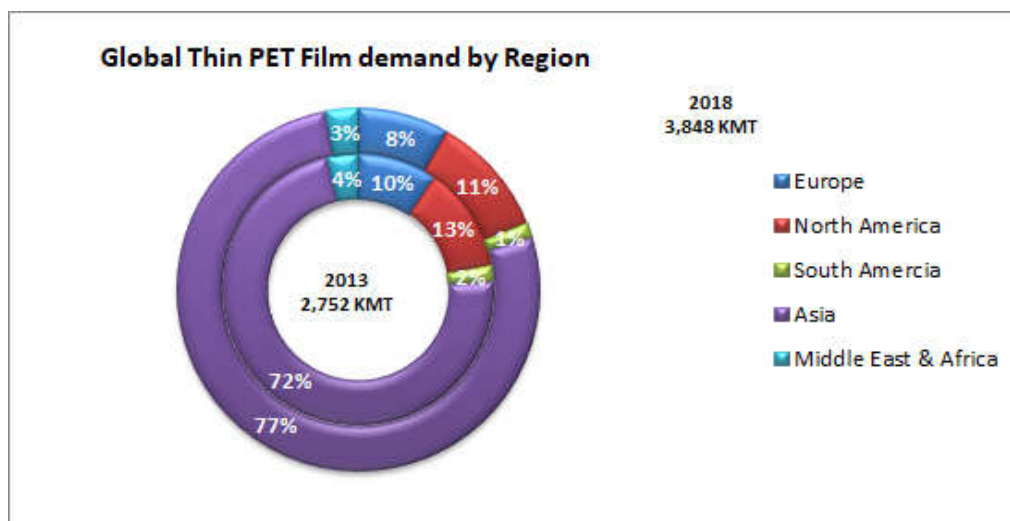
nature. This characteristic of the packaging segment has resulted in steady growth in demand, despite the adverse factors of economic slowdown witnessed in the past. This trend of demand growth is expected to continue in the future despite signs of a global economic slowdown.



Source: Company estimates from Industry /Market study reports

An increase in the purchasing power, coupled with the changing life style of people in the developing countries has brought with it a substantial increase in the per capita consumption of packaging material. As a result of this, Asia is the largest market for Thin PET films with more than two-third of the films produced globally being consumed in this region. At the same time, per capita consumption of packaging material in developing countries is still very low as compared to the mature markets. The key drivers of demand growth in these regions are the increase in the share of organized sector, increasing consumerism, changing demographics and the resulting need for better and more convenient packaging.

A similar trend is also evident on the supply-side with most of the new capacities being added in low-cost developing countries. Most of the new capacity is also focused on the packaging segment, with an emphasis on high productivity and low operating costs. This has adversely impacted the traditionally large producers of PET film operating with high cost structures, who have now been forced to concentrate in the emerging niche technologies in PET films like films for LCDs, solar panels, touch screens and specific high-end applications within packaging. While trade defense measures like anti-dumping and countervailing duties are on the rise in an increasingly competitive market environment, they are unable to address the inherent problems of unproductive assets operating in the developed countries producing regular films.



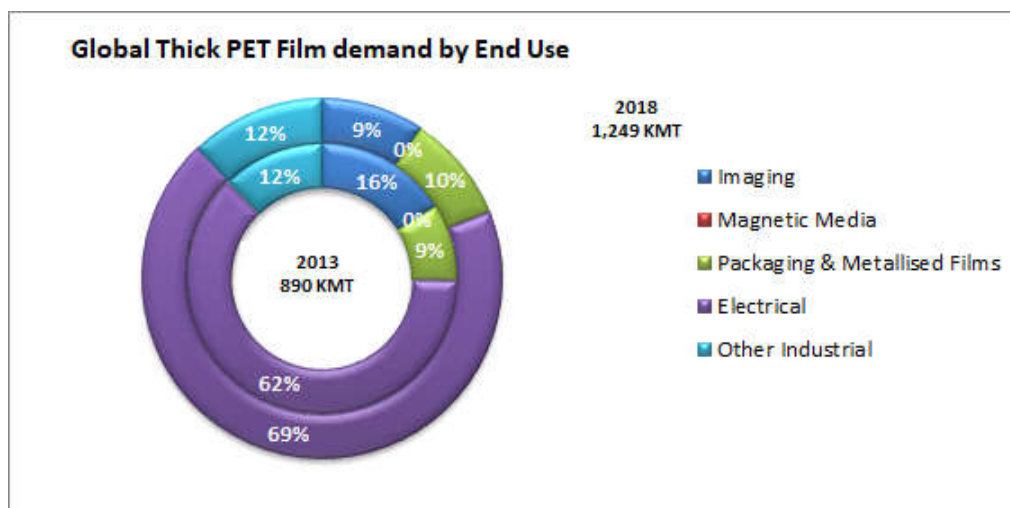
Source: Company estimates from Industry /Market study reports

Due to the exceptionally high margins witnessed in the PET film industry in 2010, the industry witnessed a surge in capacity additions since 2011 which created an excessive oversupply scenario for about 3-4 years until 2017. The steady growth in demand has helped in gradually correcting the demand supply imbalance, which is reflected in improved CUF in the industry over the past few quarters and improved margins. Companies with consistent quality products, diversified product portfolio, access to international customers and a better supply chain model stand a better chance of participating in the market growth and improving/maintaining their margins above the industry averages.

Thick PET Film

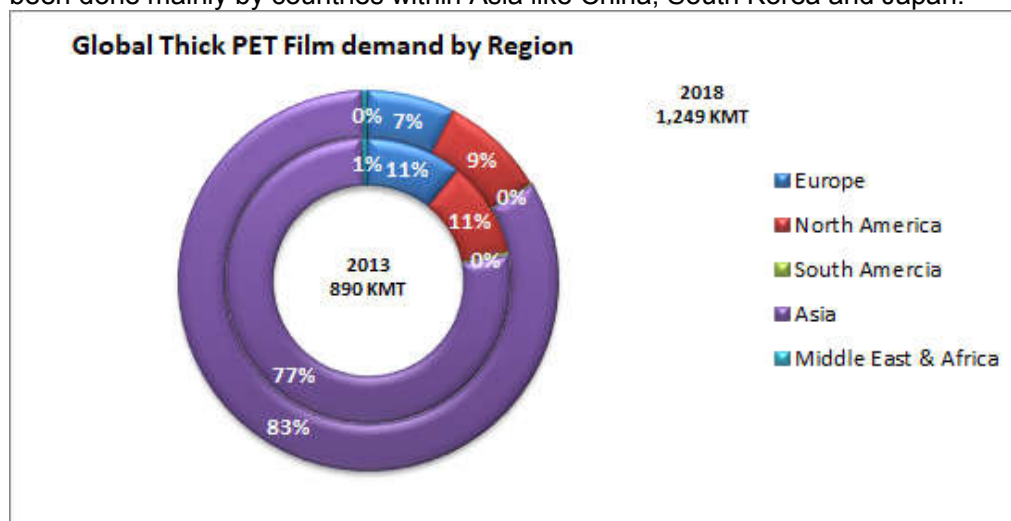
Electrical and Industrial are the key segments in Thick film industry. In the last few years the demand of Thick PET film has been growing at a CAGR of about 5%-

New innovations and usage new applications in the Electrical segments (like Flat Screen panel, PV solar cells etc) have been driving the growth in the past and would help this industry to continue to grow at a healthy CAGR of about 4-6% for the next few years.



Source: Company estimates from Industry /Market study reports

Similar to Thin Film industry, the additions in the capacity of Thick PET film has mostly been done mainly by countries within Asia like China, South Korea and Japan.



Source: Company estimates from Industry /Market study reports

2.7.2. Industry Situation

Global competition

The global Thin PET film manufacturers can be classified into 3 main categories by size of their production capacity:

- (i) World majors with production capacity of over 100,000 tons per year
- (ii) Mid-size players with production capacity between 50,000 – 100,000 tons per year and
- (iii) Small / local producers with production capacity of less than 50,000 tons per year

Barring certain specialty segments, competition is seen among all groups of producers thanks to the consistently rising demand, especially for thin film which is used in packaging, industrial and electrical segments where healthy growth of demand has been recorded in the past and a similar trend is expected in the future as well. Thus small, mid-sized and major producers (including Polyplex Group) have expanded their capacity to cope with the increasing demand in these segments. This has led to the expectation of higher market share by producers in various countries which have surplus production capacity.

Domestic competition

Thailand's PET film market is of small scale as compared to the global PET film market. As per our estimates, demand of PET film (thin & thick) in Thailand is approximately 52,000 tons per year with growth rate for next few years expected to be about 4-5% p.a. In the past, domestic producers have put emphasis on producing BOPP film rather than any other types. PTL has principally focused on Thin PET film since its inception in Thailand and started with one PET film line, within nine months set up a second line as well. Over the years, PTL has had several other expansions in film capacity i.e. value added films like Metallized film (4 lines), Thermal Lamination film, Silicone Coated film (2 lines), Offline Coated Film (underway) etc and related product diversification like manufacturing CPP film and Blown PP & PE films (second Blown film line commissioned in June'18). It is presently having the largest PET film production

capacity in the country, but will be the second largest capacity after the start-up of the new line of a competitor in Q3 2020.

The film production capacities of the various plastic film producers in Thailand as at 31st March 2019 are as follows:

Production line (tons per year)	ThaiFilm Industrials Plc.	A.J. Plast. Plc.	SRF industries Limited	PTL*
BOPP film	73,000	132,000		-
PET Thin film	-	62,000	74,000#	48,000
PET Thick Film				28,800
CPP film	3,500	16,000		**15,600
BOPA film	-	30,000#		-
Metallized film	4,800	30,500#	12,000	23,800
Blown Film				10,005
Total	81,300	270,500	86,000	126,205
Thermal Lamination film	-	-		365 mn Sqm
Silicone Coated Film				725 Mn Sqm
Offline Coated Film#				70 Mn Sqm

Source: Form 56-1/Industry sources

* PTL capacities are as approved by BOI (for projects promoted by BOI). For actual attainable capacities, please refer table below, under section 'Production Capacity'

** Combined capacity p.a. as approved by BOI for CPP plain and metalized film

including capacities under implementation

Conclusion on PET film industry

The PET film industry has been expanding continuously in the past. The main driving factor for the past few years has been the growth of the packaging, industrial and electrical segments. Meanwhile, PET film producers have boosted their capacity utilization and/or their production capacity aggressively to respond to the increasing growth of demand.

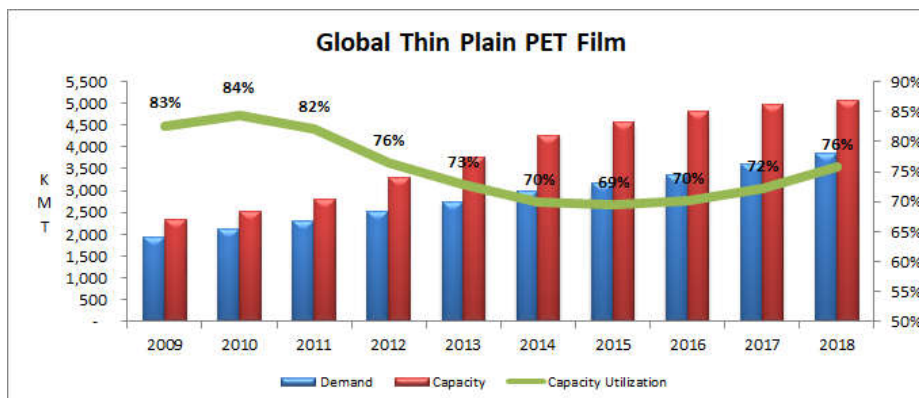
From 2008 – 2011, the Capacity utilization factor (CUF) of Thin PET film was in the range of 80-85%, subsequent to which a lot of players have added significant capacities, resulting in an excessive oversupply scenario, which brought down the utilization levels to less than 80% in the past few years. The growth in demand over the years has helped improved this imbalance and improved the CUF of the industry to almost close to 80% level in 2018.

Similarly, the CUF in the Thick PET film industry came down from an abnormally high level of 95% witnessed in 2011 to a low of 71% in 2016 and with demand growth catching up with the oversupply, has improved to a level of 75% in 2018.

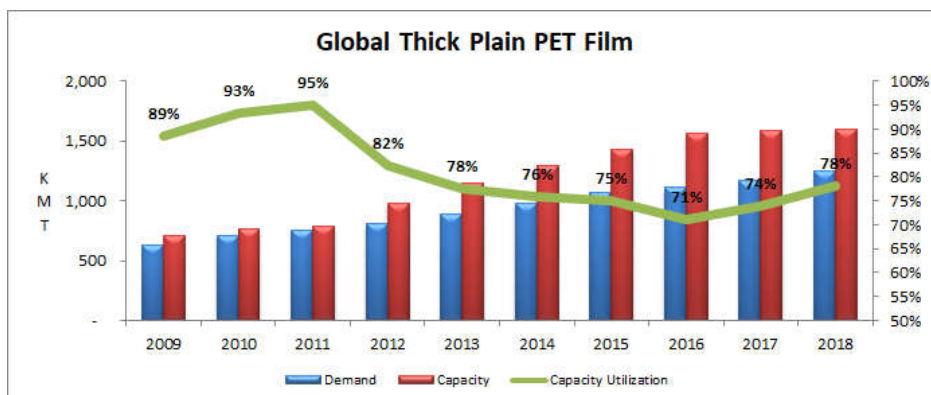
The levels of 80-90% are considered a high utilization rate being close to the full machinery capacity. In practice, some producers produce lower than the nameplate capacity due to the

long use and hence the poor condition of machinery while some produce with capacity utilization even higher than 100% of the nameplate capacity using new and modern machinery and based on their long-time expertise and experience.

The trend of global capacity utilization for Thin and Thick PET film for last 10 years is as under:



Source: Company estimates from Industry/Market study reports



Source: Company estimates from Industry/Market study reports

The rising demand for PET film attracts new entrants but it is not easy for them to scale up the volumes globally and compete with the existing players who have a global reach, technical know-how and well spread out product portfolio. Project management skills are also needed to enhance efficiency and cost effectiveness that will lead to competitiveness against other producers. Capacity expansion may be unavoidable to attain larger size and hence economy of scale.

Polyplex Group has accumulated over 30 years' experience in the PET film industry. It has been strengthened with consistent expansion in production capacity. Its management is highly competent. Delivery of products is efficient by having geographically distributed production bases and a widely spread sales and distribution network that allow for easy access to the customers.

The emphasis on the countries with high demand growth potential, production and cost effectiveness and concentrating on business segments such as packaging, industrial and electrical segments which have recorded healthy growth all along has contributed to the Polyplex Group becoming one of the leading producers of thin PET film.

In view of tariff barriers imposed by importing countries such as anti-dumping and anti-subsidy duties, the Company's parent company based in India has experienced such threat from both the EU and the USA several times. It has thus been keen on the issue, having information on the criteria and inspection process adopted by those countries and knowing how to deal with

the problem. It is an outcome of the understanding of the process, that USA has levied zero duties till date under the anti-dumping measure against the company.

As an outcome of the Anti-Dumping investigation initiated by the Government of Brazil against UAE, Mexico and Turkey, in respect of PET film imports into Brazil, the government of Brazil, w.e.f March, 2012 had imposed anti-dumping duty of USD 67.44 / MT on the Company's subsidiary in Turkey (Polyplex Europa). During sunset review which was concluded in February 2018, the investigating authorities kept the duty rates unchanged @ USD 67.44 / MT. It should also be noted that it was the minimum rate as compared to the rates announced for other countries as well as other producers in Turkey. Polyplex Europa's exports to Brazil are not a very significant portion of their overall sales volume and as such, there is no major impact from the anti-dumping margin imposed.

As an outcome of the Antidumping investigation by the Government of Indonesia against Thailand, an Anti-Dumping duty of about 2.2% on imports from PTL into Indonesia has been levied since December 2015. There has been no major impact of this marginal duty, on our sales to Indonesia. With the start-up of the new line in Indonesia, this market will anyway be catered from the new line and hence, there is no adverse impact of this duty on our Thailand operations.

As an outcome of the Anti-Dumping investigation initiated by the Government of Korea in 2017, a final Anti-Dumping duty of 3.92% on imports from PTL into Korea has been levied since November 2017 and this will be applicable for a period of 3 years from date of applicability. There has been no major impact of this duty on our sales to Korea. With the start-up of the new line in Indonesia, we will also have the flexibility to supply to Korea from the new line in Indonesia.

The company is undertaking all the safeguards to insulate against the risk arising out of anti-dumping duties and other protective barriers imposed by the importing countries. Polyplex's strategy of having a geographically diversified manufacturing set up has protected it from such trade barriers and helped retain its competitive positioning over the years.

Outlook for the PET film industry:

- Global demand for Thin PET films is expected to grow at a healthy rate of about 5-7% p.a. over the next few years. Similarly, demand for Thick PET films is expected to grow at about 4-6% p.a.
- The main driver of growth in thin PET film in South East Asia is Flexible Packaging segment which is expected to grow about 7-10%
- Several new capacities announced mostly by incumbent players in different parts of the world and are slated to start in next 2-3 years
- These capacities are expected to be in excess of demand growth in short term and there may be some pressure on margins. This may be partially offset by delayed start-up of some of the planned capacities and likely closure of old and inefficient lines which may not be economically viable when compared to the high productive assets like the one being installed by the Company in Indonesia
- The Company continues to invest in cost reduction initiatives as well as product portfolio expansion including specialty products. These investments have not only helped deliver better margins but also helped the Company become a leading player in the industry. In a more competitive business scenario, these initiatives are expected to deliver better returns and provides more stability to earnings

- The Company is confident about the fundamentals of the industry. The Company's continued focus on cost leadership, portfolio diversification including specialty/High Value-Added Products and concentric diversification along with its global sales and distribution networks provides a competitive advantage over the others.
- On the sustainability front, the past and ongoing initiatives of the Company as well as its diversified business / product portfolio would help mitigate the impact, if any and also enable it to capitalize on opportunities

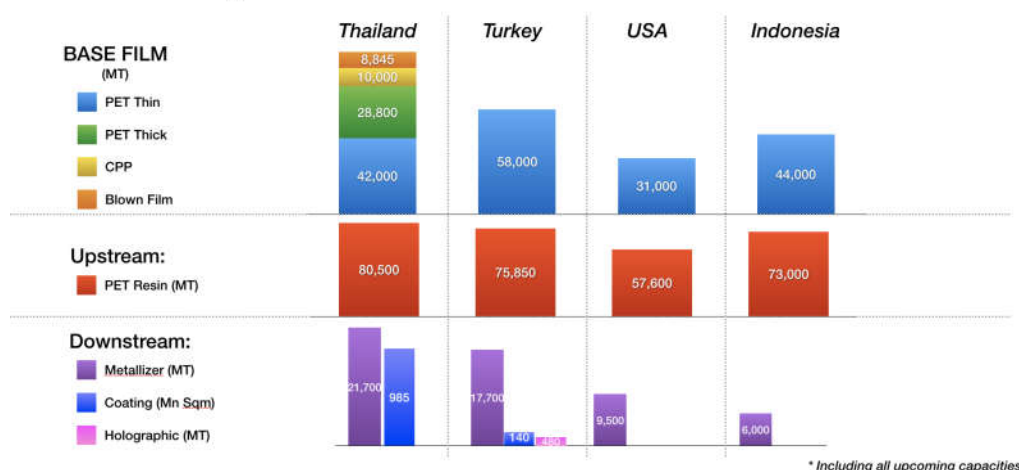
2.8. Manufacturing of product

2.8.1. Production

PTL is having 3 plots of land at Siam Eastern Industrial Park, Rayong Province, with a total area of about 100 Rai on which all the production facilities are built up.

a) Production capacity

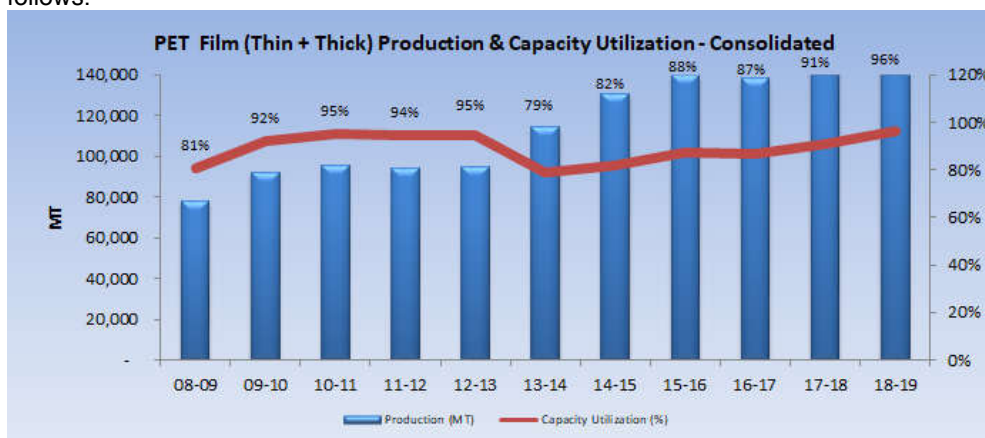
Capacity of PTL and its subsidiaries as on 31st March 2019** is as follows:



** including capacities of the new Silicone Coated Line and Offline Coated Film line at Thailand and Batch Resin plant and Holography film in Turkey, under implementation

Note: Capacities for Thailand above are attainable capacities and capacities approved by BOI based on theoretical output are higher. For BOI approved capacities in Thailand, please refer table above under section 'Domestic competition'.

The capacity utilization rates for the Plain PET film lines (Thin +Thick) of PTL (Consolidated) are as follows:



- Capacity and Production of PET thin film in USA and PET thick film in Thailand included in above graphs, since start of commercial production in April and October, 2013 respectively

The Company has been able to increase the production mainly due to debottlenecking of PET thin film capacities at Turkey and Thailand

2.8.2. Major raw materials

PET resin

PET Resin (polyethylene terephthalate resin) is the major raw material in the production process for PET films. It has been the strategy of Polyplex to produce its own Resins at all the manufacturing locations. Accordingly, every location has its own Resin plant with sufficient capacity to meet its requirement.

Purified Terephthalic Acid (PTA) and Mono Ethylene Glycol (MEG):

The major raw materials for PET resin production are purified terephthalic acid (PTA) and mono ethylene glycol (MEG). To ensure uninterrupted procurement of raw materials the Company has currently tied up with local suppliers for PTA and MEG for PTL. In Turkey, the company procures bulk of PTA & MEG from 2-3 global suppliers through long term / yearly contracts and also explores spot opportunities for some part of the business as and when the market conditions are favorable to leverage on the surplus situation on these raw materials from time to time. The subsidiary in USA, is procuring its requirements from local suppliers. The subsidiary in Indonesia will have options to source the major raw materials locally and/or also consider imports from suppliers within this region. The company is in advanced discussions with suppliers for raw material procurement and would make suitable decisions based on the costs and benefits keeping in mind the consistency and quality of supplies.

The company enters into Annual contracts as per which 100% of the company's requirements would be supplied as per the specified price formula throughout the contractual period(s).

Major Raw materials for the Extrusion Coated Film production:

Apart from PET film, which comes mostly from the company's in-house production and imports from the group company (at Arm's length pricing), the major raw materials for the Extrusion Coated film production are BOPP base film and Coating

substances such as LDPE and EVA. All these are sourced from various manufacturers / traders from within Thailand as well as imports from within the region. Once the Offline Coated film line starts up in Q3 2019-20, this film can be used as Base film for making certain specialized Extrusion Coated films and will help the Company to enhance the high value-added film portfolio.

Major Raw materials for the Cast Polypropylene Film production:

The major raw materials for the Cast Polypropylene film production are Homo Polymer and Co-Polymer. Homopolymer is being procured locally while Co-Polymer is sourced locally as well as imports from within the region.

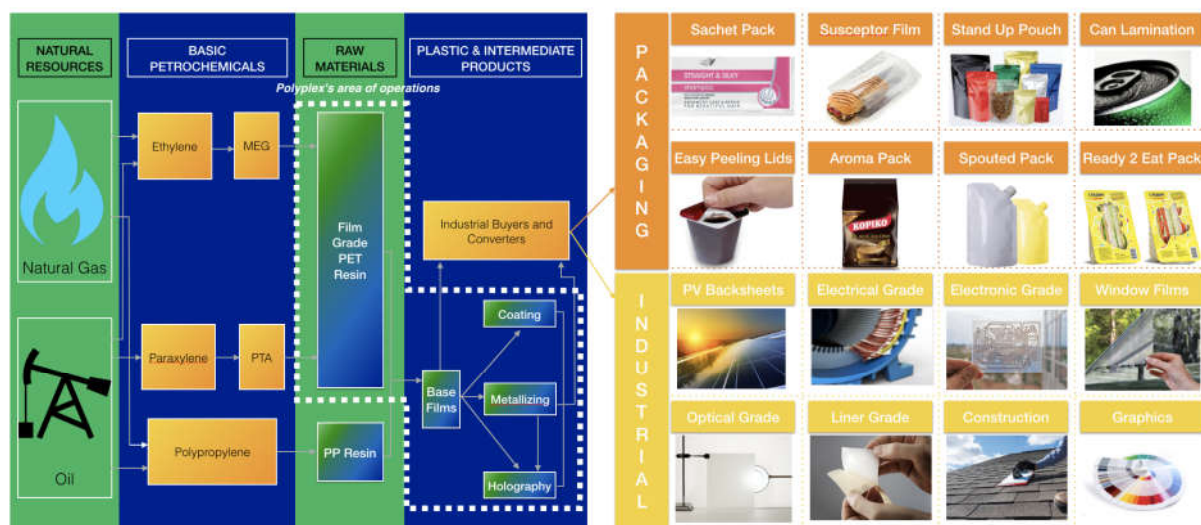
Major Raw materials for the Silicone Coated Film production:

For the Silicone Coating line, the main raw material is PET film which is transferred from the Company's in-house production and also imported from the Parent company in India at Arm's length pricing. Silicone and other chemicals are being imported from USA and Europe from leading suppliers.

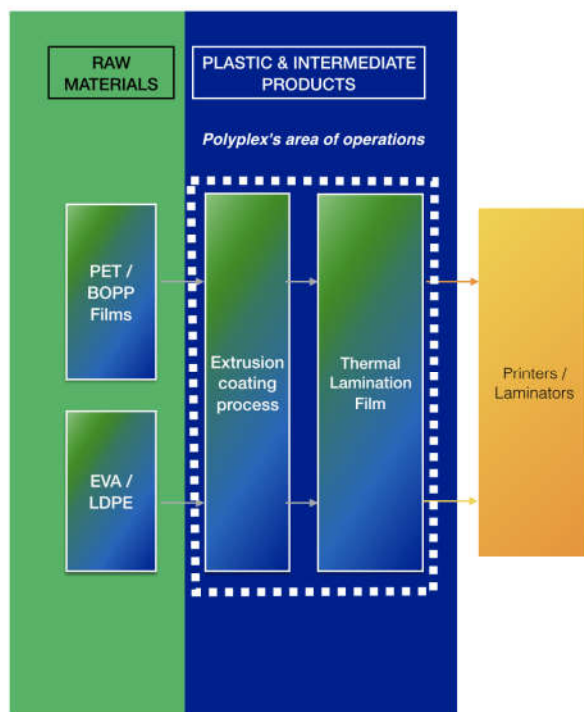
Major Raw materials for the Blown PP Film production:

For Blown PP film line, the main raw material is PP resins (Homopolymer, Co-Polymer and PP Color master batches). These are sourced from local suppliers as well as imports from within this region.

The value chain for the Company's PET, CPP & Blown PP film business is depicted below:



The value chain for Thermal Lamination film is given below:



2.8.3. Impact on the environment

There is minimal impact on environment caused from the polyester film production process since PET in both film and resins are generally recyclable. Also, the Company being on the forefront of this issue, has recently launched a few products with post-consumer recycling (PCR) content of up to 90%. Other than doubling its efforts on R&D activities, finding more sustainable solutions like single substrate structure, Bio-PET, the Group is an active member of international forums and associations working in this direction.

For its Polyester resin line, it has the required EIA approval and submits regular reports required as per EIA approval to the concerned authorities.

Since its commencement of production in March 2003, PTL has not faced any significant problems relating to the environment. Inspection by the Industrial Factory Department has been undertaken on a regular basis, the result of which has come out that the Company's manufacturing process poses no environmental impacts.

All our product lines in Thailand have the following certifications:

- ISO 14001:2015 certification on Environment Management system
- ISO 9001:2015 certification on Quality Management system
- OHSAS 18001:2007 certification on Occupational Health and Safety Management system
- ISO 22000:2005 certification on Food Safety standards
- TPM Excellence Award (Category A)
- Kosher Certificate

All our product lines in Turkey have the following certifications:

- ISO 14001:2015 certification on Environment Management system
- ISO 9001:2015 certification on Quality Management system
- OHSAS 18001:2007 certification on Occupational Health and Safety Management system
- BRC/IoP – certification on Global Standard for Packaging and Packaging Materials (For Plain and Coated Film lines)
- ISO 50001:2011 certification on Energy Management system

Our product lines in USA have received the following certifications in 2018:

- ISO 14001: 2015 - certification on Environment Management system
- ISO 9001: 2015 – certification on Quality Management system

3. Risk Factors

Before deciding to invest in the shares of the Company, investors should prudently consider the information about risk factors described in this section and all information contained herein. Apart from the said risk factors, there are still other unpredictable risks that may adversely impact the Company's operating results.

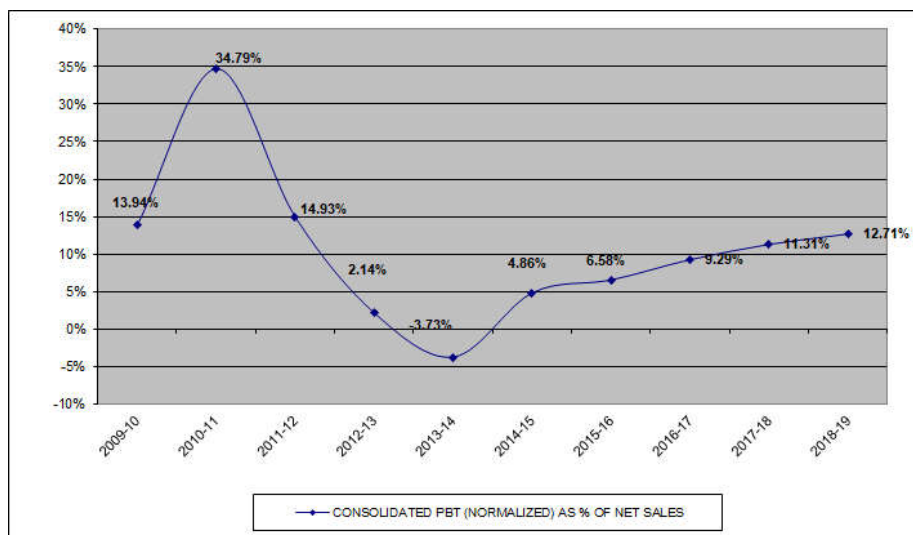
The key risk factors are:

3.1. Industry Cycle

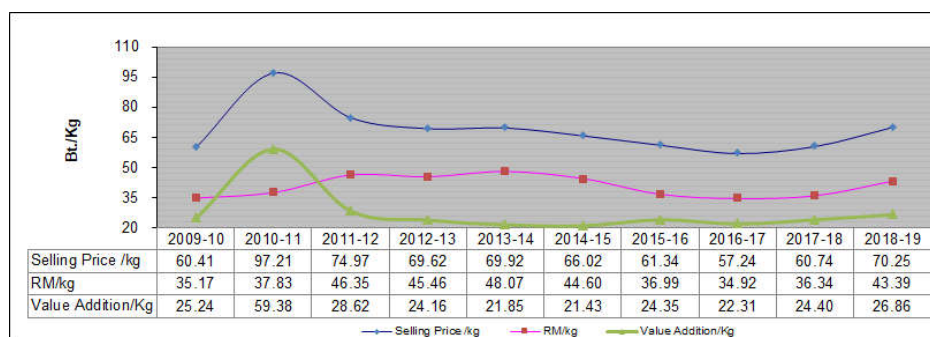
The industry cycle of PET film hinges on the spread between the PET film price and the prices of PTA and MEG which are the major raw materials. Whenever the demand supply balance favors the suppliers, the PET film and raw material price spread usually widens, thereby encouraging the manufacturers to increase production by expanding their capacities. On the contrary, if PET film supply is larger than market demand, the film prices will drop, hence narrowing the spread between PET film and the raw material prices. This cyclical nature will inevitably affect every producer's revenues and profits. Post the 2010-11 up-cycle, a lot of capacities were added in the PET film industry. This created an imbalance in the demand supply scenario and put pressure on the selling prices, thereby contracting the margins. However, the oversupply situation has improved over the last 2 years, with demand growth catching up with existing oversupply improving the industry margin. Several new capacities announced mostly by incumbent players in different parts of the world and are slated to start in next 2-3 years. These capacities are expected to be in excess of demand growth in short term and there may be some pressure on margins. This may be partially offset by delayed start-up of some of the planned capacities and likely closure of old and inefficient lines which may not be economically viable when compared to the high productive assets like the one being installed by the Company in Indonesia.

To illustrate the cyclical impact of the PET film industry, the movement of profit before tax/sales of PTL (Consolidated), is shown in comparison with that of the prices of PET film and raw materials, as below:

Comparison of normalized profit before tax* as a % to sales, of PTL on a consolidated basis, with prices of plain PET film (thin & thick), raw materials and value addition (Consolidated - Average for PTL-Thailand, PE-Turkey and PUL - USA)



* the forex gain loss of each year and the exceptional loss from sale of Polyplex Resins in FY 2014-15 and the Asset impairment loss in FY 2015-16 have been adjusted to compute the normalized profit before tax.



Source: Company information

The cyclical behavior can be seen in the above historic data, which has direct impact on the operating results of PET film producers like Polyplex.

To mitigate such risk, the Company has sought to undertake the following:

- With high productivity levels, cost control measures and a diversified product range including various value-added products, Polyplex believes it has a competitive edge over other producers of polyester film in the world which will help it deliver better financial results as compared to its peers in the industry.
- A broad-based product offering, comprising of different substrates of plastic films, including value-added films cushion the Company from demand-supply volatilities and mitigate the risk of over dependency on a single product and single industry.

- Over the years, the Company has been focusing on increasing its share of high value-added segment (HVAS) films. High Value-added segment comprise those product types which are a specialty either from the production/process perspective and/or application perspective and also from the margin perspective.
- Regular investments in metallizing/ downstream coating capacities helps Polyplex to offer new types of products to its customers and further improve the mix of HVAS film in its sales.
- Accessing customers operating across the globe in the flexible packaging and industrial segments by presenting alternative sourcing options from its existing manufacturing locations in Thailand, Turkey and USA and going forward, from the new manufacturing location in Indonesia and its warehousing & distribution set up in Europe and Turkey, thereby mitigating the risk of over dependency on few customers and markets.
- Diversified manufacturing and distribution base help to mitigate the risk of volatile markets. For Eg: South East Asian markets are price-sensitive in nature, whereas developed markets of US, Europe, Japan etc are less volatile. Polyplex tries to mitigate such risks by having a diversified sales portfolio.
- Increased focus on new product development through R&D or technology acquisitions in addition to having a strong technical services team is a further differentiator between Polyplex and its competition.

3.2. Risks relating to uncertainty in prices of the product and raw material

The basic raw material for production of PET film is PET resin, which is in turn produced from Purified Terephthalate Acid (PTA) and Mono Ethylene Glycol (MEG).

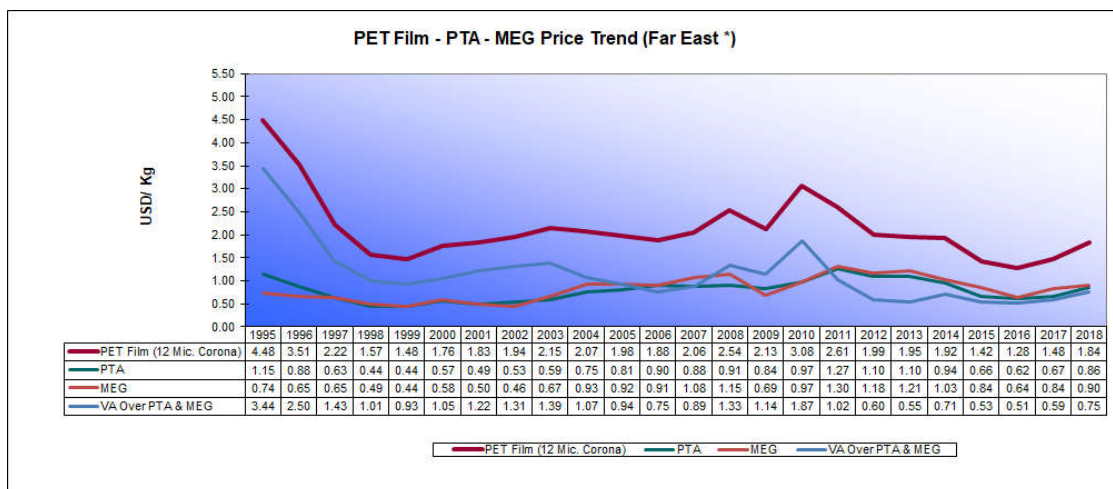
Since the cost of resin is the single largest component of the total production cost of Polyester film, the fluctuation in the resin price may hurt the Company's operating margins depending upon the ability of the Company to pass the increase in costs to its customers. As selling prices are usually negotiated on a monthly / quarterly basis, in a balanced demand supply situation, the Company is usually able to adjust the selling prices following any changes in the PET resin cost and other operating costs.

The above graph of historic Selling price and Raw material price movement demonstrates the correlation between the raw material cost and the selling prices. In most of the years the movement in the selling prices has been following the trend of the raw material cost except for few years where other factors such as major down cycle or up cycle in the industry caused by demand-supply imbalance influenced the prices.

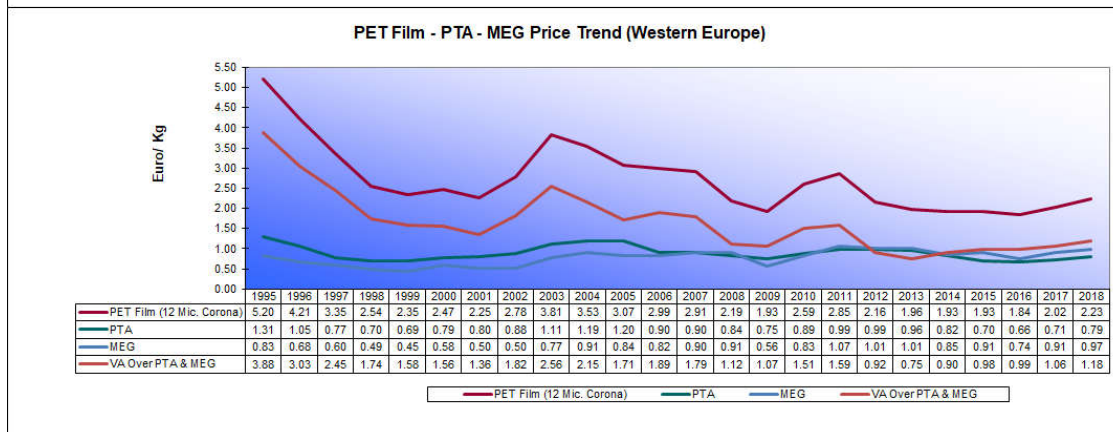
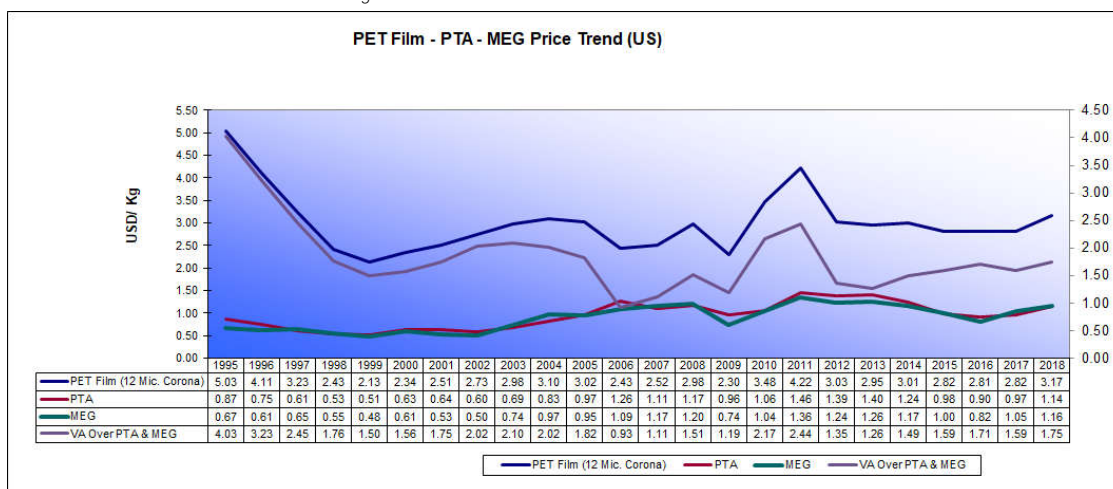
The oversupply witnessed in the Polyester film industry in the past has seen further improvement in 2018-19 with the demand growth continuing to catch up with the supply despite few capacity additions. Stability of crude oil at any particular level will help in improving business sentiment and enable all players along the entire supply chain, in overcoming uncertainty caused by crude oil volatility.

Analysis of historical data shows high correlation between PTA/MEG – polyester film prices. The spread between two intermediates would vary depending upon the demand-supply situation of the commodity. Also, sudden and sharp movements in raw material prices may affect the correlation for some time.

The chart below shows the past trend in the pricing of PET film and PTA and MEG and the Value addition rate per Kg, in Far East*, US and Europe respectively:



*Price trends of Far-east region is no longer available from reliable Industry sources and the Company will consider referring alternative sources for reporting China price trends from next year onwards, as China prices are anyway a better reflective of the trends in Far east/ South East Asian region.



Source: Industry information

The above industry data demonstrates that variations in the raw material prices by and large tend to get passed on to the end-customers. The demand-supply balance of PET films which could vary across regions impact margins accordingly. The spread between the raw material and PET films, especially over the last few years,

has moved in a band. PTL's contracts with some customers provide for a quarterly/periodic review in pricing which enables it to adjust for any raw material cost movement.

The Company monitors world and local input price trends carefully and determines its procurement plans accordingly. Also, unpredictable price movements of raw materials affect all industry participants and thus does not put Polyplex in a materially advantageous or disadvantageous position vis-à-vis its competitors. The prices of downstream products like Off-line coated, silicone-coated and extrusion coated films are less susceptible to changes in raw material prices and thus helps to counter the cyclicalities in the standard films.

3.3. Risk associated with reliance on only a few raw material suppliers

The 2 major raw materials for the company, PTA and MEG are well traded commodities, and are available from a variety of manufacturers across the world.

In Thailand, the company is meeting its requirement domestically, by procuring each of these raw materials 100% from local suppliers, thereby enjoying certain distinct advantages of shorter lead time/lower raw material inventory carrying levels etc. The company has entered into long term / yearly contracts for the supply of the raw material to ensure its availability. These contracts also usually have a supply guarantee clause to ensure that the supplies remain uninterrupted for a reasonable period of time in case of any unforeseen circumstances.

In Turkey, the company procures bulk of PTA & MEG from 2-3 global suppliers through long term / yearly contracts and also explores spot opportunities for some part of the business as and when the market conditions are favorable to leverage on the surplus situation on these raw materials from time to time. These contracts guarantee the supply of the material except for force majeure situations.

In USA, the company is sourcing its PTA and MEG 100% from local suppliers, thereby enjoying advantages of shorter lead time/lower raw material inventory carrying levels etc. The company has entered into long term / yearly contracts for the supply of the raw material to ensure its availability.

And as far as the pricing is concerned, since it is formula based linked to certain standard international benchmark indices there is high degree of transparency.

For the new Greenfield expansion in Indonesia, the company will have options to source the major raw materials locally and/or also consider imports from suppliers within this region. The company is in advanced discussions with suppliers for raw material procurement and would make suitable decisions based on the costs and benefits keeping in mind the consistency and quality of supplies.

For the Extrusion Coated film production, apart from PET film which is transferred from the Company's in-house production and also imported from third parties or other group companies at arm's length pricing, the other major raw materials are BOPP base film and Coating chemicals such as LDPE and EVA. All these are sourced from various manufacturers / traders from within Thailand as well as imports from within the region.

The major raw materials for the Cast Polypropylene film production are Homo Polymer and Co-Polymer. Homopolymer is being procured locally while Co-Polymer is sourced locally as well as imports within the region.

For the Silicone Coating line, the main raw material is PET film and Blown PP film which is mostly transferred from the Company's in-house production. At times, the PET film is also imported from third parties and/ or group companies at arm's length pricing. Silicone and other chemicals are being imported from USA and Europe from leading suppliers.

For Blown PP film line, the main raw material is PP resins (Homopolymer, Co-Polymer and PP Color master batches). We are sourcing our requirement from local supplies as well as imports from within this region.

3.4. Risk from environmental regulatory measures

All the production lines of PTL, except for the Polyester resin line, do not require any environmental impact assessment (EIA). For its Polyester Resin line, the Company has the required clearance from the regulatory authorities and utmost care is taken to ensure compliance to the same.

For the new project in Indonesia, the Company has received the necessary environmental licenses and/or approvals required for our industry.

3.5. Risk from competition from existing manufacturers and entry of new players

With consistently rising demand and healthy growth potential, the PET film industry attracts new capacity investments from existing large manufacturers who are well-established companies with long experience in this industry, as well as medium to small producers and new entrants with capability to accommodate investment in PET film plants and machinery. In this industry, it is quite common for capacity additions to happen in a bunch, following a period of attractive margins and profits and this disrupts the demand-supply balance for a temporary period of time, until demand growth catches up with new supplies. In certain cases, as witnessed in the last few years, the oversupply is so excessive that the down cycle lasts for a prolonged period of 4-6 years. Several new capacities announced mostly by incumbent players in different parts of the world and are slated to start in next 2-3 years. These capacities are expected to be in excess of demand growth in short term and there may be some pressure on margins. This may be partially offset by delayed start-up of some of the planned capacities and likely closure of old and inefficient lines which may not be economically viable when compared to the high productive assets like the one being installed by the Company in Indonesia. Overall, despite the cyclical nature of this industry, it continues to remain an attractive industry with strong fundamentals and a steady demand growth.

Compared to other players, Polyplex's lower cost of production, established quality and technical services, geographically diversified manufacturing presence, wide range of products and applications and global market reach are some of key factors which make Polyplex one of the leading players in this industry. It remains confident of being able to compete against both world leading producers as well as newcomers.

The Company has been continuously evaluating other growth options in PET film / value added products / related areas like CPP / BOPP / Silicone Coated Films at all existing locations in Turkey/Thailand/US, while also carefully evaluating growth options in other new locations/new product lines. The company has also been evaluating possibilities for any acquisitions to further expand its manufacturing base and also to improve its cost structure, product offering and market reach / penetration. The upcoming Greenfield PET film project in Indonesia is another strategic decision to establish a manufacturing presence in one of the fastest

growing economies and one of the largest PET film markets in this region. Being the world's fastest and widest line with highest capacity in the region, this is expected to be the most cost competitive line in the Group and the Company hopes to be able to ramp it up to optimum levels, within 4-6 months of start-up. The newly announced BOPP line in Indonesia is another step towards diversifying the product portfolio and becoming a one stop solution for all packaging film needs of our customers.

3.6. Risk from trade barrier measures

Trade barrier measures imposed by various countries are broadly of two major types:

- a) Anti-dumping (AD): An anti-dumping duty can be imposed on imports if the ex-factory prices of such imported products are proved to be lower than the local selling prices of the similar products in the countries of the exporters. For the past few years, the countries adopting this measure are the European Union member countries and the US against such countries as India, China, Brazil and South Korea.
- b) Anti-subsidy: A countervailing duty (CVD) can be imposed if the government or any government agency provides any benefits or privileges specifically to any company or exporter of such country.

Such tax measures will cause import duty on the goods produced and exported from the targeted countries imposed at such a high rate that such goods will carry higher prices and hence have difficulty to compete with the products of the rivals. For manufacturers having a regional manufacturing base in such locations, such trade defense measures can be an opportunity if anti dumping duties are levied against imports from the Asian low-cost producers.

The company is taking all safeguards to insulate against the risk arising out of anti-dumping duties and other protective barriers imposed by the importing countries. A geographically well-diversified sales portfolio like ours will help mitigate the adverse fall-out of such an action, if any. And by having a local manufacturing presence in USA and Europe, it can take advantage of such trade barriers levied by these countries against imports from Asian countries.

As an outcome of the Anti-Dumping investigation initiated by the Government of Brazil against UAE, Mexico and Turkey, in respect of PET film imports into Brazil, the government of Brazil, w.e.f March, 2012 had imposed anti-dumping duty of USD 67.44 / MT on the Company's subsidiary in Turkey (Polyplex Europa). During sunset review which was concluded in February 2018, the investigating authorities kept the duty rates unchanged @ USD 67.44 / MT. It should also be noted that it was the minimum rate as compared to the rates announced for other countries as well as other producers in Turkey. Polyplex Europa's exports to Brazil are not a very significant portion of their overall sales volume and as such, there is no major impact from the anti-dumping margin imposed.

As an outcome of the Anti-dumping investigation by the Government of Indonesia against Thailand, a final Anti-Dumping duty of about 2.2% on imports from PTL into Indonesia has been levied since December 2015. There has been no major impact of this marginal duty, on our sales to Indonesia. And with the start-up of the new line in Indonesia, this market will anyway be catered from the new line and hence, there is no adverse impact of this duty on our Thailand operations.

As an outcome of the Anti-Dumping investigation initiated by the Government of Korea in 2017, a final Anti Dumping duty of 3.92% on imports from PTL into Korea has been levied since November 2017 and this will be applicable for a period of 3 years from date of applicability. There has been no major impact of this duty on our sales to Korea. And with the start-up of the new line in Indonesia, we will also have the flexibility to supply to Korea from the new line in Indonesia. Polyplex's strategy of having a geographically diversified manufacturing set up has protected it from such trade barriers and helped retain its competitive positioning over the years.

3.7. Risks from future projects

The major risks associated with any new Projects are as below:

- **Market Risk:** Since Polyplex has a global reach and an extensive marketing and distribution network, the Company does not foresee any major risk in developing markets for its products. With respect to the market risk for the Indonesia project, the Company has been serving the Indonesian market from Thailand unit for past several years and has been able to increase its market penetration over the years. As such, the Company sees no major risk in marketing of the products from the new line in Indonesia.
- **Competition Risk:** The Company believes that its cost structure would be globally very competitive and it has the widest product range which is one of the major advantages to gain an edge over some of the existing producers/new entrants.
- **Project Implementation risk:** Due to the experienced Projects team at Polyplex, the Company remains confident of successful implementation of new projects on time and within Budgeted costs except for un-foreseen circumstances. The Project at Indonesia is on schedule and the PET Film line and Metallized film line are expected to start commercial operations around mid-August 2019. There is a slight delay in the PET resin line which is expected to start by October, 2019 but the Company plans to source its Resin externally, to be able to operate the film lines.
- **Funding Risk:** For large projects, the Company takes long term Debt to the extent of 65-75% of the Project cost and the balance is funded out of internal accruals. Based on the good relationship with existing banks and the low gearing ratio, the Company is quite confident of raising the required financing for any new future Projects at competitive terms and conditions. For the Indonesia project, the Company contracted term loan of up to USD 55 million (or Euro equivalent) and the balance is being funded out of Equity investment and/ or inter- co loans from the Turkey subsidiaries. Until March, 2019, PTL has already injected IDR 337.5 billion (approx. \$ 25 million) of Equity into the new Indonesia entity.
- **Currency Risk:** For any new project, the currency of borrowing is decided, based on the projected operational cash flows of the project. The currency which has the maximum surplus in the operational cash flows is chosen to be the currency for the loan. If there are multiple currencies of surplus in operations, the Company may also consider borrowing in more than 1 currency (USD and/or Euro), depending on the currency exposure in the Project cost. This helps to create a natural hedge for the Project expense as well as the loan repayments, as and when the repayments start. The company also has internal FX guidelines to cover net exposure of Project costs, in various currencies by booking appropriate forward contracts, so that

the risk on the initially estimated overall Project cost, on account of currency fluctuations is minimized.

Apart from all the Project specific risks and their mitigation plans as discussed above, the Company would also like to mention here that the overall Project risk of any new Project is covered by taking appropriate Insurance policies to cover various risks such as Erection and Construction all risks, Marine risks, Loss of Profit coverage due to delay in Project Start-up etc.

3.8. Risk from dependence on the parent company

As at 31st March, 2019, Polyplex Corporation Ltd. (PCL), through direct and indirect shareholding, controls 51% of the paid-up shares in the Company.

In the initial 2-3 years of its incorporation, PTL's core management team consisted of persons who were previously employed by PCL and they played a vital role in successfully establishing PTL's operations ahead of the schedule and at a lower-than-estimated cost, together with ensuring high productivity levels resulting in the Company's ability to produce quality products at a competitive cost. However, after about 4-5 years of running, once operations were fully stabilized, the company successfully implemented a program for reducing the dependence on expatriates by increasing the proportion of local Thai staff in operating/managerial positions and has been managing the production and operations efficiently thereafter.

The Company's present management team is composed of experienced key personnel in production, marketing, distribution and accounting/finance. It has thus been able to run the business on its own without too much reliance on the parent company.

PTL's business operations are independent from PCL with respect to public offering of equity, borrowing of loans, and other investments in the future. The parent company need not request any approval from any government bodies except for reporting of significant events to two stock exchanges where it is listed, namely Mumbai Stock Exchange and National Stock Exchange.

The Company is confident that there will be no conflict of business interest between PCL and PTL on account of the following:

- It is Polyplex's policy in business operation that there is an equitable distribution of business between the various manufacturing units aligned to efficient servicing of customers.
- The investment in PTL and its subsidiaries is significant as compared to PCL's own assets and hence considered to be the flagship company of the Polyplex Group. As such, the success of PTL is very critical for PCL.

3.9. Risk from Sponsor Group holding about 51% of total shares

PTL's major shareholder is PCL (As of March 31, 2019 the promoter Mr. Sanjiv Saraf and related parties control 50.03% in PCL), holding 17.19%, and Polyplex (Asia) Pte. Ltd. ("PAPL") which is wholly owned by PCL, holding 33.81%, thus in aggregate holding 51% of PTL paid-up common shares of Bt. 900 million. Thus, in matters that require a three-fourths majority vote of shareholders, the minority shareholders can successfully oppose corporate actions undertaken or supported by the majority shareholders. However, the parent company will continue to play a vital role in determining the Company's policy and strategic direction setting.

However, PTL has set up a three-member Audit Committee to provide for an audit of the operations and the management.

Besides, PCL is listed on the Stock Exchanges in India and abides by the Corporate Governance regulations prevailing for listed companies in India.

3.10.Foreign exchange risk

Most of PTL's products, i.e. about 75-85%, are for exports, which are mostly denominated in US dollars and Euro. As against this, raw material (PTA & MEG) prices are linked to the US dollar, although their payments are done in Thai Baht and there are Long term loan related interest payments/loan repayments in USD and Euro. On a standalone basis, the company as at March 31st '19 had Euro loans of about 89.9 million and USD loans of about 5.1 million, including Euro 88 million borrowed from its subsidiary in Turkey for the investment in Indonesia, repayment including prepayment banks' term loans and working capital loans. There are some expenses which are in Thai Baht, i.e. locally procured raw materials, packing materials, salaries, utilities and other administrative expenses which have to be settled by income from domestic sales and from the surplus income from USD/Euro exports. Thus, broadly speaking, PTL has a net surplus US dollar and Euro position on the trade front, which can be hedged somewhat against repayment of its long-term loans. To the extent possible, the company has been trying to create a natural hedge to mitigate the risk from currency fluctuations. On an ongoing basis, the company also takes forward covers, to cover the net surplus exposure in USD and Euro.

Similarly, the Company's subsidiary in Turkey has a net surplus Euro currency whereas they have certain payments in the local currency, which is hedged from time to time by taking appropriate forward covers.

The subsidiary in USA mainly has USD revenues and USD payments, so there is a natural hedge. The project financing was also made in USD currency. Apart from bank loans taken for project financing and working capital financing, the US subsidiary has also taken some inter-co loans from Polyplex Europa (PE) for supporting its financing requirements. These loans are Euro denominated and the O/S amount of the loan at 31st March, 2019 was Euro 42.5 million.

The new subsidiary in Indonesia has contracted Long term debt of USD 55 million (or Euro equivalent) for its Project financing. Disbursal until 31st March, 2019 is Euro 10.9 million Euro and USD 0.8 million. Apart from this, they have also borrowed inter-company debt of Euro 9 million from the Group company in Turkey to support its project financing and working capital requirement. Once operations start up, the Company will have exports to Europe and US and will have revenue from Euro and USD currencies which can be used to hedge against Loan repayment. On an ongoing basis, the Company plans to cover the net surplus exposures in Euro and USD currencies, by taking appropriate forward covers.

However, the Company continues to be exposed to unrealized FX fluctuation impact as the forex loans need to be restated at the period end exchange rate and this can create sharp swings in the reported profitability of the Company. The Company would like to focus on improving the operational performance, rather than trying to protect the unrealized FX fluctuation impact, as the purpose of borrowing loans in foreign currency and the natural hedge from export earnings would be defeated if the forex loans are swapped to local currency, in order to eliminate the risk of unrealized FX fluctuation on the loan restatements. In order to protect the interest of the shareholders, the Company has been normalizing the impact of the unrealized

FX fluctuation, while reporting the performance and while considering the Net profits for dividend payout.

3.11. Interest rate risk

As of March 31, 2019, the Company's outstanding long-term bank loans on a consolidated basis were Euro 12.8 million and USD 17.4 million whereas outstanding short-term loans were USD 15 million and Baht 1,119 million. The USD loans have floating LIBOR based interest rates and the Euro loans have floating EURIBOR based rates. Apart from the above, the Company in Thailand and the subsidiaries in Indonesia and USA have inter-company loans from the Turkey subsidiary totaling to Euro 139.5 million, which gets eliminated in consolidation. Pricing of these loans are linked to Floating EURIBOR rates. The floating interest rate may put the Company at a risk of rising financial cost if the interest rates move up. There are various reasons for interest rate changes like economic growth, inflation expectations and unemployment, among others. All these factors are external and uncontrollable. However, the company has been constantly monitoring the interest rates and will take interest rate swaps for converting the liability into fixed rates, if considered beneficial.

3.12. Risk from overlap of products and markets

The product portfolio of PCL, PTL, PE and PUL is quite similar. In order to mitigate the risk from overlapping of products and markets, Polyplex has also evolved an equitable policy for distribution of markets, between its Indian, Thailand, Turkey and USA operations based on the several factors like product range, delivered cost to customer, supply lead times and preferential duty access. Based on the same, PTL would mainly serve South East Asia, Asia Pacific, China, and Australia & New Zealand. PCL would serve South Asia. Turkey operations will mainly cater to Europe, Africa and CIS/Russian markets.

The new line in Indonesia would mainly cater to the domestic market, but in the initial period will also consider exporting some volumes to Korea, Japan, Europe and USA, depending on the Pricing, material availability, delivered cost to customer, preferential duty access etc. The US manufacturing entity would mainly focus on North American market. Certain markets which are basically spot markets such as Middle East, South America etc may be serviced by either of the supply locations depending on the availability of the product and other factors such as capacity availability etc.

The Polyplex Group also has a policy on future investments in polyester film / related areas between the Company and its parent company. Investments in India/SAARC region would be decided and made by PCL and its other subsidiaries (excluding the Company) while investments in Thailand / ASEAN region as well as other countries would be in all likelihood be made by PTL or the subsidiaries in which the Company has a major stake. The above is subject to availability of Investible cash / ability to borrow debt by the existing / preferred Company as per the policy. In line with this Investment policy, the investment in Indonesia is fully owned by PTL.

3.13. Credit risks

Credit risk of customers is another significant risk for any business. Credit risk refers to the risk of non-payment by debtors. This risk increases in case of unsecured or open payment terms. The Company manages the risk by adopting appropriate

credit control policies and procedures. The Company has a well-defined and robust internal credit management system to monitor unsecured sales. The Company also has a global credit insurance cover to secure non-payment risks of customers. As such, most of the sales, which are on credit are secured either through a Letter of credit issued by the customer or secured under credit insurance coverage. The Company also takes extra caution in selection of any new customers and granting of credit.

3.14. Risk from regulatory measures or drive against use of plastics

There are growing concerns, in general, on the usage of plastics and more specifically, single-use plastics such as carry bags, straws, disposable spoons etc.

Within various forms of packaging, flexible packaging is held to be a relatively environmental friendly form of packaging due to its lower packaging weight to product ratio with a significantly lower carbon footprint (GHG emission), etc. However, it's recyclability is an issue arising from technical challenges and lack of efficient & economic collection mechanism for post-consumer waste. This has led to regulatory measures like banning the use of single use plastics, implementing levies and mandating recyclability. In addition, all the stakeholders in the value chain including brand owners, converters, plastic manufactures, etc. are working together on various fronts e.g. higher recycled content, improved collection system, achieving higher recyclability by changing the structure, etc.

To keep the things in perspective, the BOPET film in flexible packaging is very small part (<1%) of total plastic world which is estimated to be ~400 million tons p.a.

As per Industry experts, given the advantage of BOPET film in flexible packaging, there are currently no viable alternatives to PET film in this segment. Further, any new alternative would take few years' time to be established and to gain acceptance in the Industry and hence, there is no major threat to this industry in the medium term of next 3-5 years.

Polyplex Group has been one of few companies working in this area for a long time. The Company had invested in a Recycling arm in Thailand in 2013 which focuses on recycling and develops PET resins using post-consumer plastic waste for varied applications. The Company has recently launched a few products with post-consumer recycling (PCR) content of up to 90%. Other than doubling its efforts on R&D activities, finding more sustainable solutions like single substrate structure, Bio-PET, the Group is an active member of international forums and associations working in this direction.

4. Operating Assets

4.1 Core assets of the Company as of March 31, 2019

The Net book value of Property, Plant and Equipment is as under:

ASSET TYPE	Unit – Baht million	
	31 ST MARCH, 2019	31 ST MARCH, 2018
Land	539,933	460,393
Buildings and building improvements	2,075,368	2,156,881
Machinery and equipment	6,004,254	6,361,749
Furniture, fixtures and office equipment	73,893	52,814
Motor vehicles	18,301	2,466
Assets under installation and construction	815,117	28,194
TOTAL NET BOOK VALUE	9,526,866	9,062,497

***Note:** The Company and its subsidiaries have pledged their property, plant and equipment amounted to approximately Baht 5,864 million (2018: Baht 6,566 million) as collateral to secure credit facilities obtained from financial institutions*

4.2 Intangible Assets

The net book value of other intangible assets as at 31 March 2019 was Baht 3,249 as compared to Baht 2,234 million in 2018.

4.3 Investment in subsidiary company

PTL's wholly owned subsidiary Polyplex (Singapore) Pte. Ltd. (PSPL), an investment holding company, holds 100 % stake in Polyplex Europa Polyester Film Sanayi Ve Ticaret Anonim Şirketi (PE), a company incorporated in Turkey which is manufacturing and distributing PET films. PTL monitors and supervises the operations of PSPL by having couple of representatives who sit on the latter's board of directors. PE has further invested 100% in a trading company in Turkey – Polyplex Paketleme Çözümleri Sanayi ve Ticaret A.Ş (PP) for the distribution of the company's products in the Turkey region.

PSPL also holds 100% stake in Polyplex (Trading) Shenzhen Co. Ltd, which is a trading company set up in China in the year 2009 and which started commercial operations in 2010. The liquidation is under way and expected to be completed within this Financial Year.

In January 2006, PTL had acquired 80.24% stake in Polyplex (Americas) Inc., to enhance its distribution network in the North American market. PCL, PTL's parent company also had a 9.88% stake while the balance 9.88% was held by a foreign US-based shareholder. In January 2013, PTL acquired the minority stake from the shareholders to make PA its 100% subsidiary. Post this acquisition, PA was merged with Polyplex USA LLC w.e.f 31st January, 2013.

In 2011, PTL invested in a 100% owned subsidiary Polyplex America Holdings Inc. (PAH), an Investment holding company, which further invested in Polyplex USA LLC (PUL) which is 100% owned subsidiary of PAH, the company under which a PET Thin Film line and PET Resin project was commissioned in 2013.

In 2013, PTL invested 100% in a trading company in Netherlands – Polyplex Europe B.V, which will be engaged in the warehousing and distribution of different products of the Company in the European market.

As a sustainability initiative, the Company invested in a project to recycle and provide sustainable solution for film-based process waste. The project was implemented in Thailand in December 2013, under the Company's subsidiary - EcoBlue Limited, in which the Company is holding 66.5% stake.

The Polyplex Group also has a policy on future investments in polyester film / related areas between the Company and its parent company. Investments in India/SAARC region would be decided and made by PCL and its other subsidiaries (excluding the Company) while investments In Thailand / ASEAN region as well as other countries would be in all likelihood be made by PTL or the subsidiaries in which the Company has a major stake. The above is subject to availability of Investible cash / ability to borrow debt by the existing / preferred Company as per the policy.

5. Legal Dispute NONE

6. General Information

The company	Polyplex (Thailand) Public Company Limited
Stock Exchange of Thailand symbol	PTL
Registered Head office	75/26, Ocean Tower II, 18 th Floor, Sukhumvit Soi 19, Kwaeng North Klongtoey, Khet Wattana, Bangkok - 10110
Telephone	(662) 665-2706-8
Facsimile	(662) 665 2705
Factory -1	Siam Eastern Industrial Park, 60/24, Moo 3, Tambol Marbyangporn, Amphur Pluak Daeng, Rayong- 21140
Factory -2	Siam Eastern Industrial Park, 60/91 Moo 3, Tambol Marbyangporn, Amphur Pluakdaeng , Rayong 21140
Factory -3	Siam Eastern Industrial Park, 60/109,Moo 3, Tambol Marbyangporn, Amphur Pluakdaeng , Rayong 21140
Type of Business	Manufacturer of Polyester Thin Film (Plain and Metallized), Polyester Chips, Polyester Thick Film (Plain), Extrusion Coated film, Cast Polypropylene Film (Plain and Metallized), Silicone Coated Film and Blown PP Film
Company registration number	0107547000729
Telephone	(66) 38 627 074 - 99
Facsimile	(66) 38 627 070
Website	http://www.polyplexthailand.com
Registered Capital	Baht 900,000,000
Common Shares	900,000,000 shares
Par Value	Baht 1.00 per share
Paid-up Capital	Baht 900,000,000
Number of Employees	1,159 including subsidiaries in Turkey, USA and China, and 682 in Thailand.

Subsidiaries in which the company holds more than 10% share – As at 31st March, 2018

Company Name and Address	Business Type	Registered Capital (shares)	Issued & Paid Up - No. of shares held by the Company	% shareholding	Type of Shares
Polyplex (Singapore) Pte Ltd. 61, Club Street, Singapore-069436	Investment Holding Company	100,000 300,000	100,000 39,100	100% 100%	Common Preference
Polyplex Europa Polyester Film* Sanayi Ve Ticaret A.S. Karamehmet Mah. Avrupa Serbest Bolgesi, , 3 Sokak No. 4 Ergene , Tekirdag, TURKEY	Manufacturing Company	1,500,000	1,500,000	100%	Common
Polyplex Trading (Shenzhen) Co. Ltd* Room.1309,A block, Galaxy Century Building, Caitian South Rd., Futian District ,Shenzhen People's Republic of China	Trading &Distribution Company	\$400,000**	\$400,000**	100%	Common
Polyplex (Americas) Holding Inc. 251 Little Falls Drive, Wilmington, DE 19808	Investment and Trading Distribution Company	10,000	9,324	100%	Common
Polyplex USA LLC*** 641 South Lawrence Street, Montgomery, AL 36004	Manufacturing Company	****	\$46,616,500	100%	Common
EcoBlue Limited 60/91, Moo 3 Siam Eastern Industrial Park, Marbyangporn Sub-district, Pluak Daeng District, Rayong, THAILAND	Manufacturing Company	1,065,000	708,225	66.5%	Common
Polyplex Paketleme Çözümleri Sanayi ve Ticaret A.Ş# Muhittin Mahallesi,Çetin Emeç Bulvarı,Acun Sokak,Cemil Bayram Apt.,No:7/1 Çorlu/Tekirdağ_Turkey	Trading &Distribution Company	20,000	20,000	100%	Common
Polyplex Europe B.V. Zuidplein 126WTC, Toren H, 1077 XV Amsterdam NETHERLANDS	Trading &Distribution Company	30,000	2,000	100%	Common
PT. Polyplex Films Indonesia Jl. Modern Industri XVIII Blok AN No. 7, Nambo Udik, Cikande, Serang Regency, Banten, Indonesia -42186)	Manufacturing Company	54,000	33,749	99.997%	Common

* Indirect holding via PSPL

**\$ 400,000 refers to the registered & paid up Share capital of Polyplex Trading (Shenzhen) Co. Ltd. There is no concept of number of shares or par value per share in People's Republic of China.

*** Indirect Holding via Polyplex America Holdings Inc.

****There are no shares of Polyplex USA LLC. Capital contribution from PAH is termed as Members Unit and it is 100% by PAH.

Indirect holding via Polyplex Europa Polyester Film Sanayi Ve Ticaret Anonim Sirketi

Other references

(a) Registrar

Name	Thailand Securities Depository Co., Ltd.
Address	93 Ratchadaphisek Road, Dindaeng, Bangkok 10400, Thailand
Telephone	(662) 009-9000
Facsimile	(662) 009-9991

(b) Trustee

N/A

(c) Auditing Firm

1) Name	EY Office Limited
Address	33 rd Floor, Lake Rajada Office Complex, 193/136-137 Rajadapisek road Near Queen Sirikit National Convention Centre Bangkok 10110, Thailand
Telephone	(662) 264-0777
Facsimile	(662) 661-9190
Auditors*	Mr. Chayapol Suppasdtanon (CPA No. 3972) and/or Ms. Pimjai Manitkajohnkit (CPA No. 4521) and/or Ms. Sumana Punpongsanon (CPA No. 5872) and /or Ms. Rosaporn Decharkom (CPA No. 5659) and/or Ms. Rungnapa Lertsuwankul (CPA No. 3516) and/or Mr. Sophon Permsirivallop (CPA No. 3182)

* Auditors of the company for the FY 2018-19

(d) Legal Advisors

Name	Linklaters (Thailand) Ltd
Address	20 th Floor, Capital Tower, All Seasons Place, 87/1 Wireless Road Bangkok 10330, Thailand
Telephone	(662) 305 8000
Facsimile	(662) 305 8010
Contact person	Mr. Pichitpon Eammongkolchai
Name	Baker & McKenzie Ltd.
Address	990 Abdulrahim Place, 5 th floor and 22 nd -25 th Floors, Rama IV Road, Silom, Bangrak Bangkok 10500, Thailand
Telephone	(662) 636-2000
Facsimile	(662) 636-2110
Contact person	Mr. Theppachol Kosol

(e) Advisor or manager under management contract

N/A