

INDORAMA VENTURES PLC

Announcement no. 815

9 September 2011

Company Rating:	A+
Outlook:	Stable
New Issue Rating:	-

Rating Rationale

TRIS Rating assigns the company rating of Indorama Ventures PLC (IVL) at "A+". The rating reflects the company's strong position as a leading worldwide producer in the polyester value chain, its cost competitiveness and reliable production base due to vertical integration, plus its geographically diverse customer base spanning the globe. The rating also takes into consideration the capability and experience of the management team as well as IVL's access to key technologies. However, the rating is constrained by the volatile nature of the petrochemicals industry, its sizable investment in search of target growth, and the uncertain global economy.

IVL, formerly named Beacon Global Co., Ltd., was established by the Lohia family on 21 February 2003 as a holding company. The company invests mainly in businesses along the polyester value chain, comprising production of purified terephthalic acid (PTA), polyethylene terephthalate (PET), and polyester fiber and yarn. Currently, IVL's total installed capacities are: 1,934 thousand tonnes per annum (KTA) of PTA, 3,387 KTA of PET and 634 KTA of polyester. PTA is a major feedstock in the production of PET and polyester. PET is used to produce a wide range of packaging for beverages, food, personal and home care products, pharmaceuticals, as well as other consumer and industrial products. Polyester products are offered in a broad range for various end sectors which include apparel, home textiles, non-wovens, technical textiles, and automotive industries. The growth prospects for PET and polyester fiber are sound, because their properties allow these materials to substitute for traditional materials. PET is substituted for glass and aluminum in packaging, while polyester fiber and yarn is substituted for cotton in fiber and yarn. PET and polyester fiber are desirable due to their relatively superior characteristics, recyclability, and lower prices. These properties help to sustain the demand for PET and polyester fiber and yarn during the economic downturn.

IVL is a member of Indorama Group which also has sibling companies based in Indonesia and India, which focus on polyester and other petrochemicals. The company was listed on the Stock Exchange of Thailand (SET) on 5 February 2010, diluting the shareholding of the Lohia family from 92.9% to 66.4% at present. IVL's headquarters is located in Bangkok, Thailand.

IVL's experience in the polyester value chain dates back in 1995 when Indorama Polymers PLC (IRP) started a PET plant in Lopburi province (Thailand). The company's strategy aimed to be a global leader in polyester value chain businesses. During 2006-2010, IVL's assets more than tripled through the consolidation of related operating companies, brown field acquisitions, and green-field projects. The succession of its own project developments were the commercial operations of Orion Global, Lithuania, in 2006, and Alphapet, the United States (US), in 2009. Both are PET manufacturing plants. In 2011, IVL acquired companies in the US, Mexico, Poland, China, Indonesia, and Germany. In the first quarter of 2011, IVL spent around Bt22,000 million on acquisitions, which makes IVL the world's largest PET producer. The performance of post acquisition will be monitored.

At present, IVL's facilities are located in 11 countries across three continents: Asia, Europe, and North America. In addition, the company has a PET green-field project under construction, located in Nigeria, Africa. IVL's successful growth record is owed in part to its low-cost acquisition of distressed assets, intense management commitment to production efficiency, and ability to leverage the various key technologies in the polyester value chain. In addition, IVL's presence in key global regions enhances its access to a worldwide customer base, which in turn yields high production utilization. The reliability of production is supported by feedstock procurement via its captive use, and virtual integration through

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co-location with major suppliers. These enable IVL to offer competitive prices to customers due to lower production cost and lower logistics costs. IVL can also avoid in part trade barriers in some competitive markets such as North America and Europe. Moreover, the engagement in both PTA and polyester products helps boost and stabilize its profitability.

As IVL's products are categorized as commodity products, the company is exposed to the risk associated with the cyclical nature of the petrochemical industry as well as fluctuations in commodity prices. New production capacity and an uncertain global economy may negatively impact demand, selling prices, and margins. However, IVL's business model of producing PTA and its derivative products should provide some cushion against the fluctuations. Being vertically integrated yields benefits, not only to secure feedstock sources for PET and polyester products, but also to reduce logistics costs and fixed costs through the sharing of common facilities.

IVL's financial profile is considered moderate. Total revenue increased dramatically from Bt18,760 million in 2006 to Bt53,332 million and Bt96,858 million in 2008 and 2010, respectively. The increase reflected asset acquisitions in 2008 and the start-up of a green-field project in the US in 2009. In the first half of 2011, the acquisitions plus rising selling price elevated IVL's revenue by 91.5% year-on-year (y-o-y) to Bt91,853 million. Profitability also improved after integrating PTA manufacture into the business portfolio in 2008. Operating income before depreciation and amortization as percentage of sales improved from 8.2% in 2007 to approximately 13% between 2009 and 2010. In the first half of 2011, the ratio dropped to 10.9% due to the squeeze spread of PTA product. Although the PET spread was widened at the same time, it could not totally offset the pressure on margins. The resilience of premium margin remains to be proved. Cash flow protection has improved, partly due to IVL's sizable production and market base after the acquisitions. Funds from operations (FFO) increased significantly from Bt2,673 million in 2008 to Bt11,153 million in 2010. As a result, the FFO to total debt ratio improved from 6.3% in 2008 to 34.6% in 2010. For the first half of 2011, the company generated FFO of Bt9,440 million, an increase of almost double compared with the same period of last year. The earnings before interest, tax, depreciation and amortization (EBITDA) interest coverage ratio was enhanced from 2.5 times in 2008 to 10-11 times during 2010 through the first half of 2011.

IVL's investments during 2008 had weakened its balance sheet. Total debt increased from Bt11,562 million in 2007 to Bt42,602 million in 2008, which included debt financing investment and consolidated debt of those invested subsidiaries. As a result, the total debt to capitalization ratio increased from 64.6% to 70.6% in the same period. During 2010 through the first half of 2011, IVL's financial position improved. The equity base grew through an initial public offering worth Bt3,824 million in 2010 and the exercise of transferable subscription rights (TSR) worth Bt17,224 million in the first quarter of 2011. The total debt to capitalization ratio improved to 47.9% at the end of June 2011, although total debt increased to Bt56,502 million from Bt32,205 million in 2010. As of June 2011, The company's cash balance (cash and cash equivalent) was Bt20,595 million, which will be used to prepay debt of approximately Bt5,300 million in the third quarter of 2011. However, the company has planned to invest more during 2011-2014 to achieve an overall capacity of 10,000 KTA. The investment may be funded by the operating cash flow and new debt. Therefore, the total debt to capitalization ratio is expected to remain in the range of 40%-50% in the short to medium term.

Rating Outlook

The "stable" outlook reflects the expectation that IVL will be able to sustain its ability to generate a reliable stream of cash on benefit from being integrated along the polyester value chain. The company is also expected to maintain its financial strength and sufficient liquidity to mitigate the volatility inherent in the petrochemicals industry.

Indorama Ventures PLC (IVL)

Company Rating:

A+

Rating Outlook:

Stable

KEY RATING CONSIDERATIONS

Strengths/Opportunities

- World-leading producer in polyester value chain
- Geographic and product diversity
- Reliable production base with access to various technologies
- Demand prospect on further product development

Weaknesses/Threats

- Fluctuation in the petrochemicals industry

- Uncertainty of global economy
- Increase in debt from business expansion

CORPORATE OVERVIEW

IVL, formerly named Beacon Global Co., Ltd., was established by the Lohia family on 21 February 2003 as a holding company. The company was listed on the SET on 5 February 2010, diluting the shareholding of the Lohia Family from 92.9% to 66.4% at present. Its headquarters is located in Bangkok, Thailand. IVL is a member of

Indorama Group which also has sibling companies based in Indonesia and India focusing on polyester and other petrochemicals.

IVL mainly invests in businesses along the polyester value chain comprising production of PTA, PET, and polyester fiber and yarn. PET is used to produce a wide range of packaging for beverages, food, personal and home care products, pharmaceuticals, as well as other consumer and industrial products. Polyester products are offered in a broad range for various end sectors which include the apparel, home textiles, non-wovens, technical textiles, and automotive industries.

Currently, IVL's total capacity is 5,956 KTA comprising 1,934 KTA of PTA, 3,387 KTA of PET, and 634 KTA of polyester fiber and yarn. IVL's plants are located in 11 countries across three continents: Asia, Europe, and North America. In addition, the company is constructing an 84 KTA PET plant in Nigeria, which enables IVL to access the African continent.

Table 1: IVL's Capacities as of July 2011*

Unit: KTA					
Product	Thailand	Asia	Europe	North America	Total
PTA	1,373	-	561	-	1,934
PET	270	610	953	1,555	3,387
Polyester	330 **	113	120	71	634
Total	1,973	723	1,634	1,626	5,956

* Including joint venture (JV) capacity

** Including wool capacity (equivalent)

Source: IVL

In the first six months of 2011, PET contributed 68% to IVL's revenues mainly from North America and Europe. PTA and polyester contributed 18% and 12%, respectively, mostly derived from Asian region.

Table 2: IVL's Revenue Breakdown Between Jan-Jun 2011

Unit: %						
Product	Thailand	Asia*	Europe	North America	Others	Total
PTA	3.8	11.7	2.0	0.0	0.9	18.4
PET	2.8	6.3	23.0	29.7	6.7	68.4
Polyester	2.4	5.1	1.1	2.1	1.4	12.0
Others	0.0	0.3	0.8	0.0	0.1	1.2
Total	9.0	23.3	26.8	31.8	9.1	100.0

* Excluding Thailand

Source: IVL

RECENT DEVELOPMENTS

▪ *Became the world's largest PET producer through acquisitions*

From 2008 through 2010, IVL pursued a growth strategy driven by acquisitions through the merger of its related operating companies, and acquisitions and investments in brown-field and green-field projects. During that period, IVL's total capacity rose from approximately 700 KTA in 2007 to nearly 4,000 KTA in 2010. In the first half of 2011, IVL spent approximately Bt22,000 million on acquisitions, which elevated its total capacity to almost 6,000 KTA. These transactions made IVL the world's largest PET producer with the installed capacity of 3,387 KTA.

In January 2011, IVL completed the purchase of a 400 KTA of PET plant in China from Guangdong Shinda UHMWPE Co., Ltd. This acquisition is the first investment by IVL in China. The company expects to capture the fast growing demand in this country.

The acquisitions of PET and polyester plants in the US and Mexico from Invista S.a.r.l. were complete in March 2011. The US assets were renamed Auriga Polymers Inc., operating a 460 KTA PET and polyester fiber plant. This site also has a full research and development (R&D) facility to initiate production innovations. The Mexico site is owned by IVL Holding S.de.R.L.de.C.V. The company is responsible for operating a 478 KTA PET plant.

IVL also expanded its production base into Poland and Indonesia through the acquisition assets from SK Chemicals in March 2011. The assets comprise a 153 KTA PET plant in Poland and a 197 KTA PET and polyester filament yarn plants in Indonesia. The Poland PET plant is located next to a third-party PTA facility, which benefits IVL as it co-located with IVL's plants. The acquisition in Indonesia enables IVL to penetrate new markets with good growth potential.

IVL's portfolio of polyester fiber and yarn facilities was strengthened after IVL completed an investment in Trevira GmbH (Trevira), Germany, through a joint venture (JV), Trevira Holding GmbH. IVL holds a 75% stake in JV, while the rest is held by Sinterama S.p.A. of Italy. Trevira is a leading product innovator in polyester filament and yarn. Trevira's facilities comprise a 120 KTA of polyester filament and yarn plant with full R&D facilities.

▪ *IVL secured its feedstock for Indonesia production*

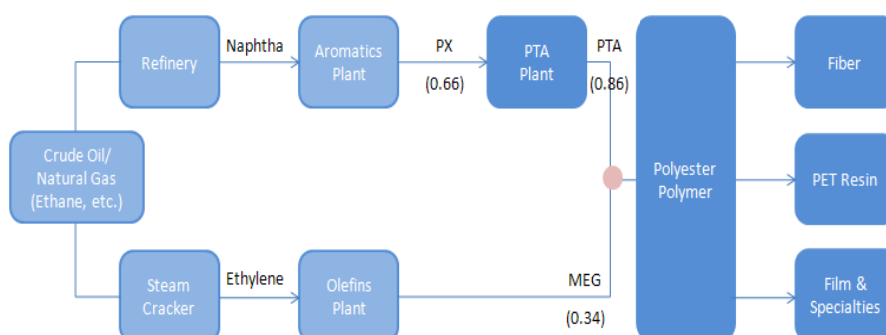
IVL's board of directors approved the purchase of a 50% stake in PT Polyprima Karyesreska (PT Polyprima). The

definitive share purchase agreement was signed on 30 June 2011. PT Polyprima, located in Indonesia, is a PTA producer with a capacity of 465 KTA. However, operations have been suspended and the company is in a debt restructuring process. After completing the restructuring, IVL's stake will be reduced to 41%, while another major

shareholder, PT Indorama Synthetics Tbk (PTIRS), will hold 41%. IVL expects that the restructuring process will be completed in the fourth quarter of 2011, operations are expected to resume in the second quarter of 2012. PT Polyprima is targeted to be a source of PTA for IVL's PET and polyester fiber and yarn operations in Indonesia.

INDUSTRY ANALYSIS

Chart 1: Polyester Manufacturing Process



Source: IVL

To manufacture polyester, a downstream petrochemical product, PTA is a key feedstock, then combined with monoethylene glycol (MEG), produced from ethylene, to form polyester polymer. This polymer will be processed to obtain polyester products, such as fiber, PET resin, and film and specialties. Generally, producing one tonne of polyester polymer requires 0.86 tonnes of PTA and 0.34 tonnes of MEG. One tonne of PTA requires 0.66 tonnes of paraxylene (PX). The key success factors in the industry are partly a strong cost advantage, global presence, a diversified product portfolio, and a degree of vertical integration. The companies with these characteristics can usually with-stand cyclicity in the industry.

PTA Industry:

PTA is an intermediate petrochemical. Almost all PTA produced worldwide is used in the production of polyester, including polyester fiber, PET resin, and polyester film, which are used in a wide variety of applications and products. Therefore, demand for PTA is driven by the demand for polyester products.

According to IVL, a global polyester producer, the global demand for PTA was estimated to rise by 12.9% to 43.8 million tonnes in 2010. The manufacture of polyester

fiber accounted for approximately 61% of total PTA consumption, followed by PET resin (32%) and polyester film (7%). During 2001-2009, PTA demand grew by an average of 6.9% per annum. The rise in PTA consumption has been driven by the strong demand for polyester fiber and PET resin, and the replacement of dimethyl terephthalate (DMT) as the polyester polymer intermediate of choice. However, the global financial crisis in 2008 temporarily dampened PTA demand to drop by 1.1% because of a slowdown in demand for polyester products, driven by de-stocking of inventories.

The global PTA industry is dominated by Asia, in particular China, because Asia is the main production base and the main market for polyester products. Demand for PTA in Asia was estimated to be 34.5 million tonnes in 2010, or 78.7% of the global demand. North America and the European Union are ranked as the second and the third largest consuming regions, with consumption shares of 9.3% and 5.5%, respectively. Growth in the amount of PTA used in Asia in 2007-2010 averaged 8.0% per annum, while the average growth rate over the same period for North America and the European Union was 0.4% and -1.6%, respectively.

On the supply side, Asia is also the leading PTA

producing region in the world. The production capacity of PTA in Asia was estimated at 38.3 million tonnes in 2010, equaling 78.6% of the world's capacity, followed by 6 million tonnes in North America and 3 million tonnes in the European Union. Many producers are expected to add more production capacity in the near future, leading to a potential of overcapacity and more competition. As PTA is a commodity product, competition is generally focused on price. To secure competitive edge, producers need to have reliable sources of raw materials, cost efficiencies in manufacturing and logistics, domestic market presences, and economies of scale. Some successful PTA producers are part of comprehensive integrated petrochemical companies. These producers should benefit from vertical integration. The world PTA market is rather concentrated, with the top 15 producers representing over 75% of total effective production capacity. Major producers comprise BP Chemical, Zhejiang Yizheng Petrochemical, Mitsubishi Group, Sinopec Group, and Reliance Industries.

PET Resin Industry:

PET, also known as PETE, is a thermoplastic, a material that changes its shape when heated. Due to PET's good characteristics, such as transparency, light weight, strength, unbreakableness, recyclability, hygiene, and preservation of product taste, PET resin is the world's packaging material choice for many foods and beverages. The major finished product that requires PET resin as a raw material is beverage packaging. PET packaging has made strong inroads into the carbonated soft drink market and the bottled water market. PET containers are also used for packaging other beverages like sports drinks and fruit juices. But PET has not yet successfully tapped the markets for beer and dairy products containers. However, due to the continuing development and innovation of PET applications, both beer and dairy are two potential markets for PET resin producers. PET resin also is used to make bottles for cooking and salad oils, sauces, and dressings. Moreover, PET resin has other applications including containers for foods, cosmetics, personal care products, home care products, and pharmaceuticals.

Over the past decade, PET resin has been increasingly replacing other packaging materials, such as glass, aluminum, and paper. In the beverage packaging market, PET resin surpassed glass and aluminum in 2005 to be the leading packaging material.

According to IVL, the global demand for PET resin

was estimated to be 17.3 million tonnes in 2010, rising 11.3% from 2009. During 2001-2009, demand for PET resin grew by an average of 8.7% per annum. The growing consumption of PET resin has been driven by the following three factors. Firstly, demand for PET packaging has risen. This growth is influenced by economic conditions and population growth. Secondly, PET resin has continued to be used as a substitute for existing packaging materials due to its cost advantages and superior characteristics. Thirdly, the development and innovation of PET packaging has risen, which increases the number of PET applications to match changes in lifestyles or consumer preferences. However, the recent global financial crisis negatively affected the demand for PET resin. In 2008, PET resin consumption grew only by 2.7%, falling from 7.4% in 2007.

Among the regional markets, Asia is the largest consumer of PET resin. Demand for PET resin in Asia in 2010 was estimated at 5.6 million tonnes, or 32.1% of the global demand. At the same time, consumption in North America and the European Union was slightly lower at 3.9 million tonnes and 3.4 million tonnes, respectively. PET resin consumption in Asia grew by 11.3% per year on average during 2007-2010, while growth in North America and the European Union averaged 0.4% and 2.2% in the same period. The growth rates in North America and the European Union were lower than in Asia due in part to the recessions in the advanced economies. In addition, the recent economic slowdown in North America and Europe may further dampen demand in the short to medium term.

On the supply side, Asia is also the dominant PET producer. The production capacity in Asia for PET resin was estimated at 10.2 million tonnes in 2010, equaling 49.5% of the world's capacity, followed by North America (4.6 million tonnes) and the European Union (2.8 million tonnes). Asia is a major exporter of PET resin while the European Union is a significant importer. Like the PTA industry, the PET resin market will probably face the challenge of overcapacity caused by huge capacity additions. As PET resin is a commodity product, competition is mainly focused on price. To counter high competition, producers must have competitive edges including security of raw material supplies, cost efficiencies in manufacturing and logistics, a domestic market presence, and economies of scale. In addition to competition among PET producers, PET resin competes against glass, aluminum, paper, and other plastics. The world PET resin industry is rather concentrated with the

top 10 producers representing approximately 60% of the total effective production capacity. Major producers comprise IVL, M&G Group, Jiangsu Sanfanxiang Group, and Sinopec Group. Some producers are also integrated producers, making their own PTA.

Polyester Fiber Industry:

Polyester fiber, also known as polyester, is a synthetic fiber derived from petroleum. It is the most widely used fiber in the world. Polyester has several advantages over traditional fabrics such as cotton. It does not absorb moisture but does absorb oil. This quality makes polyester the perfect fabric for the application of water-, soil-, and fire-resistant finishes. Polyester clothing can be preshrunk in the finishing process, and thereafter the fabric resists shrinking and will not stretch out of shape. Moreover, the fabric is wrinkle-free and abrasion-resistant, lightweight, washable, quick drying, and is not damaged by mildew.

Polyester fiber can be separated into two types of products: polyester filament yarns and polyester staple fibers. Polyester staple fibers are bundles of strands cut into short lengths, which are employed in knitted and woven textiles for clothing and home furnishing and are often blended with cotton or other natural and synthetic fibers. Polyester fiberfill, another form of staple fiber, is used as stuffing for pillows and as insulation and padding for bedding and furniture. Polyester filament yarns are continuous strands of fiber, which are used in clothing, home furnishings, and technical textiles.

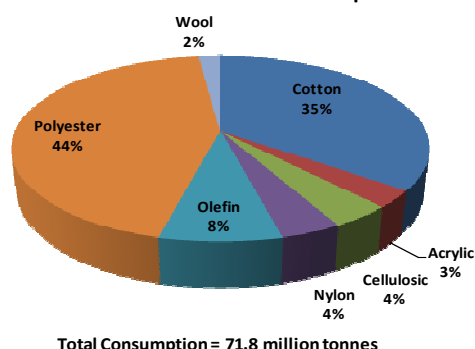
Polyester's characteristics yield a wide range of applications. Polyester fiber is used in the manufacture of many products including apparel (e.g., woven and knitted apparel, and active ware), home furnishings (e.g., sheets, pillow cases, bedspreads, curtains, and draperies), and other industrial products (e.g., industrial hose and belting, luggage, medical and sanitary applications, and tire cord).

Demand for polyester fiber has surpassed demand for cotton since 2003 and has exceeded the combined demand of all other fibers since 2010. Polyester fiber demand outpaced other fibers because it is durable and cost effective.

The consumption of fiber was estimated to grow by 5% to 75.1 million tonnes in 2010 worldwide, according to Yarns and Fiber Exchange (YNFX), the dominant marketplace for the world textile industry. World demand for textile fibers has recovered after demand dropped due to the recent global financial crisis. The growth in

demand has rebounded to 4% in 2009 from -7% in 2008. Consumption in 2010 was 2.0 million tonnes above the level in 2007 and the highest-ever level of textile fiber consumption. In 2010, total fiber demand was driven mainly by increased consumption of synthetic fibers, with a 6% increase in staple fibers and an 8% increase in filament fibers. At the same time, cotton consumption rose by only 3%. After cotton prices jumped, cotton was replaced by polyester staple. According to YNFX, world fiber consumption is predicted to rise by 2% to 76.9 million tonnes in 2011, with a strong growth in the uses of synthetic fibers and cellulosic fibers.

Chart 2: World Fiber Consumption



Source: Chemical Market Associates, Inc. (CMAI), 2009

According to IVL, the global demand for polyester fiber was estimated to be 36.8 million tonnes in 2010, rising 12.2% from 2009. During 2001-2009, polyester fiber demand grew by an average of 6.2% per annum. The rise in the consumption of polyester fiber has been driven by three factors. Firstly, demand has risen for its principal end-use products, such as apparels and home furnishings. This growth is driven by economic conditions and population growth. Secondly, due to its versatility and cost advantages, polyester fiber has continued to substitute for other natural and synthetic textile fibers, such as cotton, nylon, and acrylics. Thirdly, product developments and innovations have increased the number of polyester fiber applications to match changing lifestyles and consumer preferences. However, the global financial crisis adversely affected the demand for polyester fiber. The growth rate in the consumption of polyester fiber dipped deeply to 3.8% in 2009, down from 7.9% and 4.6% in 2007 and 2008, respectively.

Among the regional markets, Asia is the largest consumer of polyester fiber as the textile industry has migrated to Asia from North America and Europe. Demand

in Asia in 2010 was estimated at 21.4 million tonnes, or 58.1% of the global demand. At the same time, consumption in North America and the European Union totaled 4.8 million tonnes and 4.7 million tonnes, respectively. Growth of polyester fiber consumption in the Asian region in 2007-2010 averaged 11.4% per annum, while the growth rates in North America and the European Union were 0.9% and 0.3%, respectively. The low consumption growth rates in North America and the European Union were due in part to recessions in these advanced economies. In addition, the recent economic slowdown in North America and Europe may further dampen regional demand in the short to medium term.

Asia is the dominant supplier of polyester fiber, in particular China. The production capacity of polyester fiber in Asia was estimated at 55.9 million tonnes in 2010, equaling 93.3% of the world capacity, followed by North America (1.5 million tonnes) and the European Union (1.0 million tonnes). Asia is the sole exporter of polyester fiber while the European Union and North America are the biggest importers.

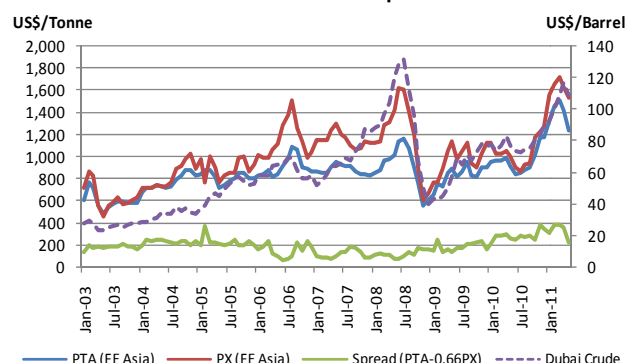
The polyester fiber industry has substantial overcapacity, mainly due to significant investments in China in recent years. However, in 2010, higher demand resulting from the sharp rise in cotton prices absorbed the increased amount of polyester production. As polyester fiber generally is a commodity product, competition is mainly focused on price. To counter the high competition, producers must have some competitive edge, such as secured sources of raw materials, cost efficiencies in manufacturing and logistics, flexible operations, and economies of scale. In addition to competition among polyester fiber producers, polyester fiber competes against cotton, wool, and other synthetic fibers. The world polyester fiber market is fragmented, with the top 20 producers representing approximately 50% of total effective production capacity. Some producers are integrated and produce their own supplies of PTA. However, the non-commodity polyester fiber segment, a smaller market segment, has fewer players and competition is primarily driven by product quality and customer service.

▪ Volatile prices and margins

Prices for PTA, PET resin, and polyester fiber in each region are primarily determined by the underlying raw

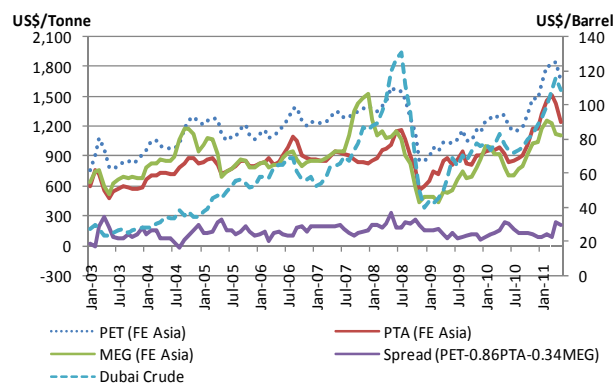
material cost structure and the demand-supply balance in each region. In addition, for the regions which import polyester products, prices include additional costs for delivery and duty. PTA is produced from PX, which is obtained from petroleum. Therefore, PTA prices also reflect the PX price and availability. PET resin and polyester fiber price volatilities also reflect the dynamic prices of their feedstocks, particularly PTA and MEG. Consequently, prices of all polyester products fluctuate with oil prices. The different adjustments in product prices and raw material costs are due to different demand-supply balances in each market, making the margins of PTA, PET resin, and polyester fiber quite volatile. PTA prices in Asia reached a high of US\$1,512/tonne in March 2011, the highest in more than eight years; PET prices in Asia also hit a record high of US\$1,848/tonne in April 2011. Prices of the PTA and PET feedstocks increased more slowly. Therefore, the spreads of PTA and PET rose to US\$379/tonne and US\$241/tonne, respectively.

Chart 3: Asian PTA Prices and Spreads and Oil Prices



Sources: 1) Petroleum Institute of Thailand (PTIT)
 2) US Energy Information Administration (EIA)

Chart 4: Asian PET Prices and Spreads and Oil Prices



Sources: 1) PTIT
 2) EIA

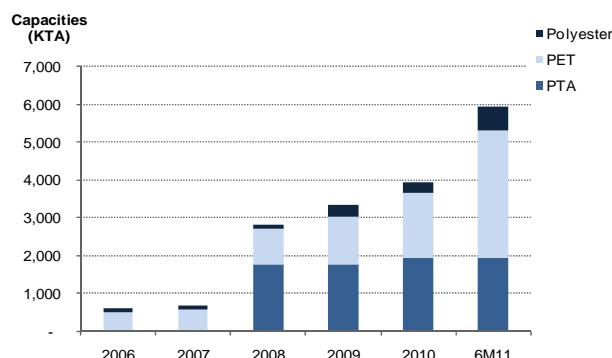
BUSINESS ANALYSIS

IVL's business profile reflects the company's strong position as a leading global producer all along the polyester value chain, its cost competitiveness, and reliable production base resulting from vertical integration as well as its globally diversified ranges of production and market bases. Its experienced management team in polyester value business plus the company's ability to access the key technologies also strengthen its business profile.

▪ Truly global player in polyester value chain

As of June 2011, IVL is considered one of the world leading producers in polyester value chain with the total capacity of 5,956 KTA. It is ranked the world largest PET producer and the 11th largest PTA producer. Although established in 2003, IVL's experience in the polyester value chain dates back in 1995 when IRP started a PET plant in Lopburi, Thailand. In 1997, the group diversified into polyester fibers and yarns by acquiring a polyester fiber plant in Nakorn Pathom, Thailand, from Siam Polyesters. In 2003, the group expanded its production base into North America, the first step toward becoming truly global, by acquiring StarPet, a PET plant in the US. In 2006, the group expanded into Europe through its green-field projects, building a PET plant in Lithuania. In 2008, the company further expanded in Europe through its acquisitions of PET connected with PTA plants in the Netherlands and a PET plant in England. IVL also backward integrated, adding PTA plants in Thailand into its portfolio through the consolidation of related operating companies and acquisitions. The melt-to-resin (MTR) technology was introduced in 2009 when the US AlphaPet plant commenced operation. The acquisitions during the first half of 2011, spanning three continents, have strengthened its leading position. In addition, IVL initiated an 84 KTA PET green-field project in Nigeria, Africa. Construction is expected to be completed within this year and commercial operation will commence in 2012. As a result, IVL's PET production base will cover four continents, underpinning its reputation as a truly global producer. The sizable production allows IVL to enjoy economies of scale, from the procurement, fixed cost sharing, and sales perspective.

Chart 5: IVL's Total Capacities*



* Including JV capacity

Source: IVL

▪ Integrated production enhances IVL's competitiveness

A reliable production base for PET and polyester fiber and yarn as well as cost competitiveness are stemming from the integration with PTA production. Integration extends to plants co-located with its own assets, as well as the plants located in the same region and co-located with suppliers. These three characteristics enable IVL to secure its feedstocks and lower production costs through reduced logistics cost and shared facilities.

Table 3: IVL's Integrated Plants

Unit: KTA

Site	PTA Capacity	PET Capacity	Polyester Capacity	Total Capacity	Type
Rotterdam, The Netherlands	377	231	-	608	Co-site
Map Ta Phut, Thailand	602	-	182	784	Adjacent
Decatur, US	-	438	-	438	Co-location
Wloclawek, Poland	-	153	-	153	Co-location

Source: IVL

IVL has integrated PTA production into portfolio since 2008 when it acquired PTA plant connected with PET plant from Eastman Chemical Company in the Netherlands. This co-site comprises a 377 KTA PTA plant, a 231 KTA PET plant, and a utilities complex. The produced PTA mainly supplies the connected PET plant while the rest is used to supply its PET plants in England and Lithuania. In Thailand, IVL consolidated Indorama Petrochem, a 771 KTA PTA plant, from a related company, and acquired TPT Petrochemicals, a 602 KTA PTA factory, located adjacent to IVL's polyester plant. The feedstock for these plants, PX, is supplied mainly by PTTAR through the pipeline. The

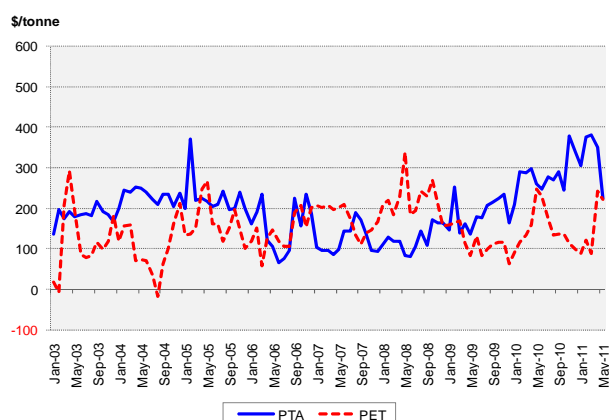
produced PTA mainly feeds IVL's PET and polyester plants in Thailand, while the rest of the PTA products are exported across Asia. In the US, IVL secures its PET feedstock through long-term contracts and built its PET plant adjacent to a supplier's complex, BP, connected through a pipeline.

■ **Integration should stabilize margins**

As is the nature of the petrochemical industry, IVL is exposed to price fluctuations for both raw materials and finished products. The price fluctuation reflects demand and supply in each region. Normally, prices of the three main regions (Asia, Europe, and North America), though different, show a similar trend. IVL's production bases in the proximity to the suppliers and markets plus the monthly price adjustments and cost pass-through mechanisms should reduce the risk associated with a mismatch in the prices of end products and raw materials.

In the past, IVL focused on PET. When the PET spread (the price difference between one tonne of PET and 0.86 tonnes of PTA plus 0.34 tonne of MEG) was squeezed, IVL's margin plummeted, hurting its performance. The backward integration into PTA production should benefit IVL by stabilizing its margins. The data of the PTA spread (the price difference between one tonne of PTA and 0.66 tonnes of PX) shows an inverse relation with the PET spread. Theoretically, the wider PTA spread will pressure PET spread. Therefore, the integration with PTA will partially stabilize a margin for a whole chain. This relationship is expected to provide some cushion against price fluctuations. However, effectiveness of the backward integration should be monitored and proved.

Chart 6: PTA and PET Spread in the Far East Region



Source: PTIT

IVL is seeking sustainability and has focused on the developed world markets due to the higher and more stable margins seen compared with Asia.

■ **Geographically diversified**

Polyester value chain products are mostly characterized as a commodity product. The product prices, theoretically, are not different across regions, after taking into consideration import parity and transportation costs. Therefore, a global production base enhances IVL's ability to penetrate each key market. IVL can offer a competitive price in a particular region as to IVL's proximity to the market means it has lower logistics cost compared with importing products from other regions. In addition, some key markets such as Europe and North America have imposed trade barriers, therefore, the presence of IVL's production facilities in those regions partially avoids such barriers. IVL's network and ability to sell globally is a key factor sustaining the high utilization rate for its plants, building economies of scale. The company's global presence provides better value to clients seeking global suppliers when they expand globally.

Approximately 50% of PTA is consumed within the group to ensure reliable source of feedstock to produce PET and polyester fiber and yarn. The rest of PTA is sold through its own channels and agents, mainly focusing on the Asian and European regions.

Over 95% of PET is sold through IVL's channels, while the rest is sold through its agents. The major customers are engaged in packaging industry and the consumer products industry producing beverages, home care and personal care products. IVL's customer base is diversified and balanced in terms of revenue. Approximately 25% of PET revenue is contributed by its top 10 customers; no customer accounted for more than 10% of PET revenue.

Although polyester fiber and yarn production are based mainly in Thailand, IVL's markets cover the globe over 60 countries. More than half (55%) of sole polyester fiber and yarn is sold directly, while 25% and 20% are sold through representative offices and agents, respectively. IVL's polyester products are used for apparel, home textiles, technical textiles, non-wovens, and used in the automotive industry.

■ **Customer-centric through product innovation**

In addition to the competitive prices offered, IVL also focuses on its customers' needs for reliable supply,

product quality, and product applications. The reliable sources of supply are derived from the proximity of its production plants to the market as well as the technology selected for production. IVL's plants employ well-known technology developed by Zimmer, Eastman, Inventa-Fischer, and Invista. The state-of-art technologies have ensured IVL can serve customers with reliable quality and innovation.

The management team also focuses on leveraging the advantages of those technologies across the group. Knowledge sharing is conducted yearly to leverage not only the advantage of each technology but also to improve plant efficiency and product development. The management team efficiently exercises its experience in the polyester value chain and employs various technologies when acquiring distress assets. The assets are profitably turned around through analytical investigations to identify and ensure possible energy and cost savings, including waste reuse or recycling.

R&D facilities help IVL serve customer needs as well as add value to its products. The company holds its own brand for innovative products such as X-Flame® and Ambs® fiber and yarn, which have flame-retardant and anti-microbial properties. IVL's innovative ability should be strengthened after the acquisition of Invista's Spatanburg (Auriga) facility, and the investment in Trevira GmbH, Germany, in the first half of 2011. IVL could leverage on the strong R&D platform of Auriga and Trevira to bring synergy to the existing production lines. Auriga focuses on a specialty PET resin used in bottles for beer, juice, and wine. The R&D team at Auriga comprises scientists, engineers, and technician with more than 25 years of experience. Trevira concentrates in specialty grades of polyester fiber and yarn. This R&D support should help IVL quickly respond to customer needs.

▪ ***Pursuing growth opportunity all along polyester value chain***

As its vision is to be a global producer, IVL has initiated plan to increase its production capacity through both acquisitions and investments in brown-field and green-field projects across the globe. IVL plans to increase its overall capacity from approximately 6,000 KTA currently to 10,000 KTA within 2014. The investments will cover the whole value chain, including investments in Middle East and Africa. IVL's geographic diversification is expected to expand over the next five years as it increases production

and sales in the emerging markets. Hence, the company will have a sizable investment program in the medium term. According to its growth strategy, IVL focuses on acquisition rather than large scale expenditures to build new plants, thus returns have been achievable from the date of acquisition. For an acquisition of polyester fiber and yarn business, IVL is targeting on the players with R&D capability and patents in the market. The company is also developing its operations in emerging markets, which are less penetrated and less competitive.

FINANCIAL ANALYSIS

IVL's financial profile is considered moderate. The equity injection in 2010 and in the first half of 2011 improved its leverage. Vertical integration along polyester value chain and geographical diversification should enhance margins and provide a reliable stream of cash.

▪ ***Operating margin improved partly due to vertical integration***

As IVL expanded its production base globally during 2008-2010, total revenue increased significantly from Bt18,760 million in 2006 to Bt53,332 million and Bt96,858 million in 2008 and 2010, respectively. The increase in production capacity was due to acquisitions during the first half of 2011 plus rising selling price which lifted IVL's revenue by 91.5% (y-o-y) to Bt91,853 million.

IVL also has enjoyed the benefits of vertical integration since it acquired the PTA business in 2008. Operating income before depreciation and amortization as percentage of sales improved from 8.2% in 2007 to approximately 13% between 2009 and 2010. However, the ratio dropped to 10.9% in the first half of 2011. The drop reflected a squeeze in the PTA spread, though a wider PET spread could not totally offset the pressure on margins. The resilience of premium margin generated through integration need time to be proved.

▪ ***Strong cash flow stems from sizable production***

IVL's total assets more than tripled from 2006 to 2010 through the consolidation of related companies, brown-field acquisitions, and green-field investments. The increase in sizable both the production and market bases after the intensive business expansions have improved the ability to generate cash. FFO dramatically increased from Bt2,673 million in 2008 to Bt11,153 million in 2010. It nearly doubled to Bt9,440 million in the first half of 2011

compared with the same period of last year. The higher FFO helped boost the FFO to total debts ratio from 6.3% in 2008 to 34.6% in 2010. This level of FFO could repay all of IVL's debts within four or five years. The debt repayments are well structured, spreading out over the next six years and matched the operating cash flows. The EBITDA interest coverage ratio also improved, from 2.5 times in 2008 to 10-11 times throughout 2010 and the first half of 2011.

▪ **Strengthened capital structure**

IVL's total debt increased significantly, weakening its balance sheet during the acquisition in 2008. Total debt included the financing for investments and the consolidated debt of those invested subsidiaries. Total debt increased from Bt11,562 million at the end of 2007 to Bt42,602 million at the end of 2008. As a result, the total debt to capitalization ratio deteriorated from 64.6% to 70.6% over the same period. However, the ratio improved notably to 49.8% at the end of 2010 after the initial public

offering (IPO). IVL's IPO worth Bt3,824 million in 2010 increased its equity based.

IVL's total debt increased from Bt32,205 million at the end of 2010 to Bt56,502 million at the end of June 2011 due to further investments. However, the leverage ratio improved to 47.9% at the end of June 2011. The improvement reflected an enlargement of the equity base through the exercise of transferable subscription rights (TSR) worth Bt17,224 million in the first quarter of 2011. The company's cash balance (cash and cash equivalent) was Bt20,595 million, which will be used to prepay debt of approximately Bt5,300 million in the third quarter of 2011.

Total debt is not expected to be much lower than the current level due to IVL's sizable plans for investment during 2011-2014 to achieve the target of increasing overall capacity to 10,000 KTA within 2014. Therefore, the total debt to capitalization ratio is expected to remain in the range of 40%-50% in the short to medium term.

Financial Statistics and Key Financial Ratio*

Unit: Bt million

	----- Year Ended 31 December -----					
	Jan-Jun 2011	2010	2009	2008	2007	2006
Sales	91,853	96,858	79,994	53,332	32,345	18,760
Gross interest expense	1,085	1,307	1,715	1,529	659	470
Net income from operations	6,946	9,197	4,354	311	823	605
Funds from operations (FFO)	9,440	11,153	8,471	2,673	2,067	1,595
Capital expenditures	23,762	2,418	3,785	4,856	1,745	3,372
Total assets	145,818	78,005	74,260	69,768	25,361	21,501
Total debts	56,502	32,205	40,101	42,602	11,562	10,418
Shareholder equity	61,427	32,405	22,466	17,707	6,348	5,352
Operating income before depreciation and amortization as % of sales	10.9	12.8	13.0	7.0	8.2	9.1
Pretax return on permanent capital (%)	9.4 **	18.1	12.5	5.9	11.7	15.3
Earnings before interest, tax, depreciation and amortization (EBITDA) interest coverage (times)	10.1	11.4	6.3	2.5	4.1	4.0
FFO/total debt (%)	16.7 **	34.6	21.1	6.3	17.9	15.3
Total debt/capitalization (%)	47.9	49.8	64.1	70.6	64.6	66.1

* Consolidated financial statements

** Non-annualized

Rating Symbols and Definitions

TRIS Rating uses eight letter rating symbols for announcing medium- and long-term credit ratings. The ratings range from AAA, the highest rating, to D, the lowest rating. The medium- and long-term debt instrument covers the period of time from one year up. The definitions are:

- AAA** The highest rating, indicating a company or a debt instrument with smallest degree of credit risk. The company has extremely strong capacity to pay interest and repay principal on time, and is unlikely to be affected by adverse changes in business, economic or other external conditions.
- AA** The rating indicates a company or a debt instrument with a very low degree of credit risk. The company has very strong capacity to pay interest and repay principal on time, but is somewhat more susceptible to the adverse changes in business, economic, or other external conditions than AAA rating.
- A** The rating indicates a company or a debt instrument with a low credit risk. The company has strong capacity to pay interest and repay principal on time, but is more susceptible to adverse changes in business, economic or other external conditions than debt in higher-rated categories.
- BBB** The rating indicates a company or a debt instrument with moderate credit risk. The company has adequate capacity to pay interest and repay principal on time, but is more vulnerable to adverse changes in business, economic or other external conditions and is more likely to have a weakened capacity to pay interest and repay principal than debt in higher-rated categories.
- BB** The rating indicates a company or a debt instrument with a high credit risk. The company has less than moderate capacity to pay interest and repay principal on time, and can be significantly affected by adverse changes in business, economic or other external conditions, leading to inadequate capacity to pay interest and repay principal.
- B** The rating indicates a company or a debt instrument with a very high credit risk. The company has low capacity to pay interest and repay principal on time. Adverse changes in business, economic or other external conditions could lead to inability or unwillingness to pay interest and repay principal.
- C** The rating indicates a company or a debt instrument with the highest risk of default. The company has a significant inability to pay interest and repay principal on time, and is dependent upon favourable business, economic or other external conditions to meet its obligations.
- D** The rating for a company or a debt instrument for which payment is in default.

The ratings from AA to C may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within a rating category.

TRIS Rating's short-term ratings focus entirely on the likelihood of default and do not focus on recovery in the event of default. Each of TRIS Rating's short-term debt instrument covers the period of not more than one year. The symbols and definitions for short-term ratings are as follows:

- T1** Issuer has strong market position, wide margin of financial protection, appropriate liquidity and other measures of superior investor protection. Issuer designated with a "+" has a higher degree of these protections.
- T2** Issuer has secure market position, sound financial fundamentals and satisfactory ability to repay short-term obligations.
- T3** Issuer has acceptable capacity for meeting its short-term obligations.
- T4** Issuer has weak capacity for meeting its short-term obligations.
- D** The rating for an issuer for which payment is in default.

All ratings assigned by TRIS Rating are local currency ratings; they reflect the Thai issuers' ability to service their debt obligations, excluding the risk of convertibility of the Thai baht payments into foreign currencies.

TRIS Rating also assigns a "Rating Outlook" that reflects the potential direction of a credit rating over the medium to long term. In formulating the outlook, TRIS Rating will consider the prospects for the rated company's industry, as well as business conditions that might have an impact on the fundamental creditworthiness of the company. The rating outlook will be announced in conjunction with the credit rating. In most cases, the outlook of each debt obligation is equal to the outlook assigned to the issuer or the obligor. The categories for "Rating Outlook" are as followed:

- Positive** The rating may be raised.
- Stable** The rating is not likely to change.
- Negative** The rating may be lowered.
- Developing** The rating may be raised, lowered, or remain unchanged.

TRIS Rating may announce a "CreditAlert" as a part of its monitoring process of a publicly announced credit rating when there is a significant event that TRIS Rating considers to potentially exerting a substantial impact on business or financial profiles of the rated entity. Due to an insufficient data or incomplete developments of the event, such as merger, new investment, capital restructuring, and etc., current credit rating remains unchanged. The announcement aims to forewarn investors to take a more cautious stance in investment decision against debt instruments of the rated entity. CreditAlert report consists of a "Rational" indicating warning reasons, a "CreditAlert Designation", and a current credit rating. Rating Outlook is withheld in the announcement.

CreditAlert Designation illustrates a short-term rating outlook indicative of the characteristics of impacts on the credit rating in one of the three directions (1) *Positive* (2) *Negative* and (3) *Developing*.

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