Asia Petrochemical Industry Conference 2006

Country Report

From

MALAYSIA

Prepared by:

Malaysian Petrochemicals Association (MPA)

FACTS ON MALAYSIA

Economy of Malaysia	
Currency	1 Ringgit = 100 sen
Fiscal year	Calendar year
Trade organisations	APEC, ASEAN, WTO
GDP ranking	33rd
GDP	$290bn (2005)
GDP growth	7.4% (2004)
GDP per capita	$11,160 (2005)
GDP by sector	Agriculture (7.3%), industry (33.5%), services (59.1%) (2004)
Inflation	1.3% (2004)
Population below poverty line	8% (1998)
Labour force	10.26m (2004)
Labour force by occupation	Manufacturing 27%, agriculture, forestry and fisheries 16%, local trade and tourism 17%, services 15%, government 10%, construction 9% (1999)
Unemployment	3.8% (2005)
Main industries	Peninsular Malaysia – rubber and palm oil processing and manufacturing, light manufacturing industry, electronics, tin mining and smelting, logging and processing timber
Exports	$140bn (2005)
Main partners	United States 19.6%, Singapore 15.7%, Japan 10.7%, China 6.5%, Hong Kong 6.5%, Thailand 4.4% (2003)
Imports	$110bn (2005)
Main partners	Japan 17.3%, United States 15.5%, Singapore 11.9%, China 8.8%, South Korea 5.5%, Taiwan 5%, Germany 4.7%, Thailand 4.6% (2003)

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KUALA LUMPUR, MALAYSIA

Country Report – MALAYSIA

1. MALAYSIAN ECONOMY

OVERVIEW OF THE MALAYSIAN ECONOMY IN 2005

Malaysia GDP Growth Rate

Year	Growth Rate (%)
2001	4.2
2002	4.1
2003	5.2
2004	7.1
2005	5.0
2006F	5.5

(Source: Central Bank of Malaysia)

The Malaysian economy continued to strengthen in 2005 with Gross Domestic Product (GDP) recording a growth of 5.3% during the first three quarters of 2005 compared to 7.1% in 2004. The manufacturing sector enabled Malaysia to achieve 5.3% growth for the economy in the whole of 2004. This was achieved in tandem with the rebound in the electrical and electronics (E&E) industry. For the whole year, the services sector sustained its growth of 6.5%. The agriculture sector recorded negative growth of 2.1% in real terms for 2005. The construction sector shrank by 1.6% for the whole year. The construction continued to record a decline of 5.1% in the first seven months of 2005. The mining sector registered a 0.8% growth in 2005.

Boosted by strong export performance, Malaysia's total trade continued on an upward momentum, reaching RM967.8 billion in 2005, a 9.9% growth in 2004. This trend is expected to continue and total trade should breach the RM1 trillion mark this year. Exports in 2005 continued to remain robust, expanding by 11% to reach RM533.8 billion from RM480.7 billion in 2004. Imports grew by 8.5% to a value of RM434 billion. As a result, Malaysia's trade balance in 2005, widened to RM99.8 billion, an increase of 23.7%, from RM80.7 billion in 2004. This was the eighth consecutive year of trade surplus. Malaysia's export growth of 11% in 2005, was higher than the world merchandise export growth of 6.5%, projected by the World Trade Organisation (WTO), for that year.

The main drivers of export growth in 2005 were strong external demand, growth in exports to major markets, particularly to the United States of America (USA), and ASEAN; and escalation in the average price of crude petroleum from US$41.40 per barrel in 2004 to US$56.50 per barrel in 2005, that boosted Malaysia's export earnings from petroleum products and liquefied natural gas.

Strong external demand, had spurred growth of Malaysia's exports to all major markets in 2005. From the regional perspective, Malaysia's total trade with North-East Asia, comprising Japan, the PRC, Hong Kong, ROK and Taiwan, was the largest, with a value of RM318.5 billion in 2005. This was followed by ASEAN, with total trade of RM246.2 billion, North America, RM165.9 billion and the European Union (EU), RM113.1 billion. Collectively, these regions accounted for 87.2% of Malaysia's global trade.

The strongest growth in total trade in 2005 was registered with ASEAN, which increased by 13.8%. The growth was attributed to the 15.4% growth in exports, and 11.6% growth in imports. ASEAN accounted for 26.1% of Malaysia total exports in 2005, as compared with the 25.1% share in 2004. Growth in exports to ASEAN has been maintained at a relatively high level. Since 2002, exports have been growing at an average annual rate of 13.6%. Growth of exports to ASEAN in 2005 was led mainly by exports to Singapore, which increased by 15.5% to RM83.3 billion, exports to Thailand, increasing 25.1% to RM28.7 billion and exports to Indonesia, which increased by 7.7% to RM12.6 billion. Exports to the CLMV countries (Cambodia, Lao PDR, Myanmar and Vietnam) also expanded. Collectively, total exports to these countries increased by 10.1% to RM5.8 billion in 2005. In 2005, Malaysia's exports under the Common Effective Preferential Tariff Scheme (CEPT) rose by 28.4% to RM 11.1 billion. Malaysia's exports under CEPT scheme were mainly to Thailand, Indonesia, the Philippines and Vietnam.

(Source: Central Bank of Malaysia)

OUTLOOK FOR 2006

The World Bank has forecasted that in 2006 world economy will grow at 3.2%, similar to the rate of growth experienced in 2005. Global trade for 2006 is forecasted to grow at 7%, compared with 6.2% in 2005. The IMF also made a similar favorable forecast for international trade. In 2006, the export growth for advanced countries is forecasted to be 6.3%, while growth for developing and emerging economies is expected to be in the region of 10.3%. The import growth for advanced countries in 2006, is projected to reach 5.8% and for developing and emerging economies, the forecast is 11.9%. Based upon the projected outlook for the global economy, and trade, as well as the expected expansion of the domestic economy, Malaysia's exports in 2006 are set to remain robust. Continued growth is expected, for most product sectors, in all major markets. Exports of E&E products, the major contributor to Malaysia's total exports, is expected to strengthen, due to increasing demand for wireless applications, and consumer electronics, particularly in major markets, such as the USA, the PRC, ROK, Taiwan and Japan.

The economies of Malaysia's major markets have been forecasted to grow this year, and this will positively impact Malaysia's export performance. The upward trend of exports to fast-growing markets in West Asia, South Asia, and ASEAN, is expected to be sustained. It is expected that ASEAN will continue to be a predominant trade partner for Malaysia, and Malaysia will also remain a major contributor to the expansion of intra-ASEAN trade, as it already accounts for about 26% of total intra-ASEAN trade. The reinstatement of the preferential tariff for four Malaysian product groups under the EU GSP Scheme, from January this year, will help to further boost Malaysia's exports to the EU. With the inclusion of the additional product groups, about 81% of Malaysia's exports to the EU will be eligible for preferential treatment, compared with 16% previously. The product groups that will be reinstated for Malaysia are consumer electronics, plastics, rubber and wood.

2. PETROCHEMICAL INDUSTRY

OVERVIEW

Malaysia has a well-developed oil and gas sector and a growing petrochemical industry. The petrochemical industry is an important sector in Malaysia with investments totaling RM28 billion (US$7.4 billion) as at the end of 2004. From being an importer of petrochemicals, Malaysia is today an exporter of major petrochemicals products. A wide range of petrochemicals are produced in Malaysia such as olefins, polyolefins, aromatics, ethylene oxides, glycols, oxo-alcohols, exthoxylates, acrylic acids, phthalic anhydride, acetic acid, styrene monomer, polystyrene, ethylbenzene, vinyl chloride monomer and polyvinyl chloride.

Five major types of petrochemical resins produced locally are polyethylene, polypropylene, polyvinyl chloride, polystyrene and acrylonitrile butadiene styrene. Other major petrochemical products include styrene monomer, vinyl chloride monomer, urea/ammonia, acetic acid, ethyl oxide/ethylene glycol and derivatives, acrylic acid and esters and terephthalic acid.

The rapid growth of the industry is mainly attributed to the availability of oil and gas as feedstock, a well-developed infrastructure, a strong base of supporting services, the country's cost competitiveness, as well as Malaysia's strategic location within ASEAN and her close proximity to major markets in the Far East.

The long term reliability and security of gas supply ensures the sustainable development of the country's petrochemical industry. The completion of the Peninsular Gas Utilisation (PGU) project by Petronas in 1998, consisting of a trans-peninsular gas transmission pipeline system and six gas processing plants, has resulted in a ready supply of gas to the industry.

To complement the existing gas reserves and to ensure further security of gas supply, Malaysia has forged partnerships with other ASEAN members for the supply of gas. A total volume of 1.8 trillion standard cubic feet (tscf) is obtained from the West Natuna field Indonesia through an agreement with PERTAMINA, the Indonesian state-owned oil and gas company. A new source of gas providing 390 million standard cubic feet per day (mmscfd) is coming on stream in 2005 from the Malaysian-Thailand Joint Development Area (JDA). In addition, gas supply will be further enhanced with the implementation of the ASEAN gas grid, a venture to make gas available to all the 10 ASEAN countries.

PETRONAS the multinational petrochemical company is embarking on a development of a new world scale methanol plant adjacent to its existing methanol plant in Labuan. The new plant will utilize Lurgi's Mega Methanol technology and is scheduled to commence operations by the end of 2007. Methanol produced from the new plant will be supplied to the domestic market as well as to the growing markets in Southeast Asia, North East Asia and India. Petronas will invite multinational oil and gas companies to set up petrochemical operations in the multi-billion ringgit integrated Petronas Petroleum Industry Complex (PPIC) in Kertih, Terengganu. The PPIC, covering 4,000ha, is a world-class integrated complex housing more than 40 petroleum based installations and supporting plants. Facilities include an oil refinery with condensate spliter, six gas processing plants, 11 gas-based petrochemical plants and 5 ancillary facilities. Among the global petroleum and

petrochemical companies that have invested in the PPIC are ExxonMobil, Dow Chemical, BASF, BP, Amoco, DSM, Mitsubishi, Idemitsu and Sasol.

The approach taken by Petronas to develop the petrochemical business in an integrated manner has succeeded in attracting renowned joint venture partners to set-up world scale plants. Petronas has embarked on an expansion of its methanol plant in Labuan. Their subsidiary ASEAN Bintulu Fertilizer Sdn Bhd signed an agreement with Namhae Chemical Corporation of Korea to establish a joint venture for a melamine production plant in Bintulu, Sarawak scheduled to be commissioned in 2007.

Today, investors benefit from the facilities that are already in place. Malaysia has established the ideal infrastructure to support a vibrant petrochemical industry. Integrated petrochemical complexes offer centralized utilities, efficient storage services and a comprehensive transportation network that help reducing capital and operational costs. Malaysia provides a wide range of tax incentives to meet the varying needs of investors.

Furthermore, the country has the world's 25th largest crude oil reserves (4.5 billion barrels), the 12th largest natural gas reserves (89 trillion cubic feet) and is the world's 3rd largest producer of liquefied natural gas. The United States is the largest source of investments in Malaysia's petrochemical sector, followed by Japan, the United Kingdom, Germany and Taiwan.

The six gas processing plants located in Kertih Terengganu – with a combined capacity of 2,000 million cubic feet (mmscf) of sales gas per day – ensure the industry an adequate supply of petrochemical feedstocks such as methane (sales gas), ethane, propane, butane and condensates. Meanwhile, Malaysia's Peninsular Gas Utilisation (PGU) trans-peninsular gas transmission pipeline channels sales gas to industries around the country.

WORLD-CLASS FACILITIES IN PETROCHEMICAL ZONES

1) KERTIH, TERENGGANU

Kertih in Terengganu has now transformed into a petrochemical hub. It houses the Petronas Petrochemical Integrated Complex (PPIC) that links the entire range of the oil and gas value chain – beginning from upstream exploration and production to the final stage of petrochemical manufacturing.

2) GEBENG, PAHANG

Gebeng in Pahang is another petrochemical hub for multinational players like BASF, Amoco, Kaneka, Eastman and Polyplastics. The petrochemical zone provides an integrated environment that meets the specific needs of the petrochemical industry.

3) PASIR GUDANG PORT

Pasir Gudang is a port (Johor Port Authority) town located 35 km east of Johor Bahru in Malaysia. It is the western end of the Johor Bahru metropolitan area. The population is around 70,000. It is connected by the 4 lane Pasir Gudang Highway, a trunk road and a railway line to Johor Bahru. The main industries are transportation and logistics, shipbuilding, petrochemicals and other heavy industries and oil palm storage and distribution. It is the site of one of two major power stations in the state of Johor, the Sultan Iskandar Power station.

Pasir Gudang is administered by the Pasir Gudang Local Authority, a subsidiary of Johor Corporation. It is the first local authority in Malaysia that was privatized, although Johor Corporations is the investment arm of the Johor State Government.

4) TANJUNG LANGSAT PORT

Tanjung Langsat Port (TLP) is the third port in Johor, Malaysia, designed to complement the Port of Tanjung Pelepas and Johor Port in Pasir Gudang. Positioning itself as Southeast Asia's premier specialty terminal, it handles bulk cargo such as liquefied petroleum gas (LPG) and dangerous chemicals.

Initiated in 1995 and commencing partial operation in 2003, TLP is situated 12 nautical miles (22 km) from the international shipping lane, 8 km from Johor Port and 45 km from Johor Bahru. It has 3.09 square km (763 acres) of land within the port area and a 4.5 km shoreline fronting the straits of Johor.

When completed in 2012, Tanjong Langsat Port facilities will include:

- L-shaped twin-berth jetty capable of handling medium-range tankers of up to 30,000 deadweight tonnes (dwt);
- Marine support base
- Deep sea fishing terminal/multi-purpose wharves;
- Liquid cargo terminal

The main activities of the port are:

- Petrochemicals and liquid bulk handling
- Marine support base
- Deep sea fishing and multi-purpose/ barter trade terminal
- Processing and storage of petroleum based and liquid bulk cargo
- International cruiser centre

Petrochemical industries will account for 60% of the activities at the complex, with gas production, steel-making and marine and marine-related industries making up the remaining 40%. Several chemical companies operating in the Pasir Gudang industrial area have opened new manufacturing facilities at TLP due to space constraints in Pasir Gudang.

TLP is targeting petroleum-based liquid bulk cargo from the industrial area around Pasir Gudang as well as the adjacent "Tanjung Langsat Industrial Estate" developed for petrochemical facilities. The 18.87 square km industrial estate was developed by Johor Corporation, especially for heavy industries, including petroleum and gas. Johor Corporation, the investment arm of the Johor state government, holds 95% equity interest in the company, while the remaining 5% is held by its wholly-owned subsidiary, TPM Technopark Sdn Bhd.

TLP is expected to face stiff competition from existing integrated petrochemical complexes in Pahang and Terengganu, as well as overseas, namely the Banyan Logistics Hub on Singapore's Jurong Island and the Majisan Port, off the coast of Shanghai Chemical Industry Park (SCIP) at Caojing, China. All are vying to become the Asian chemical logistics hub. Currently, large chemical carriers usually transfer cargo to smaller ships at Singapore or Ulsan, South Korea.

However, TLP's deepwater facility will lend itself a comparative advantage. Because of its close proximity, TLP is a competitor of the port of Singapore where complaints over high cost have been rather persistent. Already, Trafigura Pte.Ltd., a Japanese oil trading company, has planned to shift the bulk of its petroleum storage operations from Singapore to TLP, once the construction of the petroleum storage facilities is completed in 2008. According to its Managing Director, operating at TLP would be 60% cheaper.

5) BINTULU, SARAWAK

Bintulu in Sarawak is the largest producer of liquefied natural gas (LNG) in Malaysia. There are three LNG plants with a combined capacity of 24 million tonnes a year.

PETROCHEMICALS INDUSTRY PROJECTS

1. Approved Manufacturing Projects with Investments of RM100 million and Above – 2005

Industry	New			
Petroleum Products (incl. Petrochemicals)	No.	Domestic Investment (RM)	Foreign Investment (RM)	Total Capital Investment (RM)
	2	504,512,203	90,896,000	595,408,203
	Expansion/Diversification			
Petroleum Products (incl. Petrochemicals)	No.	Domestic Investment (RM)	Foreign Investment (RM)	Total Capital Investment (RM)
	-	-	-	-
	Total			
Petroleum Products (incl. Petrochemicals)	No.	Domestic Investment (RM)	Foreign Investment (RM)	Total Capital Investment (RM)
	2	504,512,203	90,896,000	595,408,203

2. Approved Projects for Year 2005 and 2004

	2005				
Petroleum Products (incl. Petrochemicals)	No.	Employment	Domestic Investment (RM)	Foreign Investment (RM)	Total Capital Investment (RM)
	15	276	601,709,116	133,022,064	734,731,180
	2004				
	No.	Employment	Domestic Investment (RM)	Foreign Investment (RM)	Total Capital Investment (RM)
	16	387	1,090,121,374	812,355,202	1,902,476,576

3. Approved New and Expansion/Diversification Projects for Year 2005 and 2004

Petroleum Products (incl. Petrochemicals)	2005					
	New		Expansion/Diversification		Total	
	No	Total Capital Investment (RM)	No	Total Capital Investment (RM)	No	Total Capital Investment (RM)
	8	659,463,920	7	75,267,260	15	734,731,180
Petroleum Products (incl. Petrochemicals)	**2004**					
	New		**Expansion/Diversification**		**Total**	
	No	**Total Capital Investment (RM)**	**No**	**Total Capital Investment (RM)**	**No**	**Total Capital Investment (RM)**
	6	626,820,896	10	1,275,655,680	16	1,902.476,576

4. Approved Manufacturing Projects with Malaysian Majority *Ownership for Year 2005 and 2004

Petroleum Products (incl. Petrochemicals)	2005					
	New		Expansion/Diversification		Total	
	No	Total Capital Investment (RM)	No	Total Capital Investment (RM)	No	Total Capital Investment (RM)
	4	442,161,315	6	68,267,260	10	510,428,,575
Petroleum Products (incl. Petrochemicals)	**2004**					
	New		**Expansion/Diversification**		**Total**	
	No	**Total Capital Investment (RM)**	**No**	**Total Capital Investment (RM)**	**No**	**Total Capital Investment (RM)**
	4	6,902,614	6	684,479,380	10	691,381,994

*** Projects with Malaysian equity ownership of more than 50 percent.**

5. Projects Approved with Foreign Participation for Year 2005 and 2004

Petroleum Products (incl. Petrochemicals)	2005		2004	
	No.	Foreign Investment (RM)	No.	Foreign Investment (RM)
	7	**133,022,064**	**8**	**812,355,202**

6. Exports

Petroleum Products	2005			2004	
	Value (RM mil)	Share * (%)	Change (%)	Value (RM mil)	Share * (%)
	2,214.4	**0.4**	**29.1**	**1,715**	**0.3**

*** % share to total exports**

3. THE DEVELOPMENT

FUTURE DIRECTIONS FOR THE MALAYSIAN PETROCHEMICAL INDUSTRY

The petroleum and petrochemical industry is one of the leading industries with total investments of RM55 billion. The industry covers petroleum products, natural gas and petrochemicals. Overall, Malaysian investments in the industry amounted to RM34.8 billion (63.3%) with Petronas being the major investor. Foreign investments, mainly from the USA and Japan, accounted for 36.7% of the total investments in the industry.

The petroleum products sector includes lubricating oils and refinery products such as gasoline, kerosene, fuel oils, gas oils, jet oils, diesel bitumen and naphtha.

The total capacity of the five refineries and one gas-to-liquid plant in operation is 635,0000 barrels of crude oil per day. The refineries supply mainly to the domestic market. Total investments in these projects amounted to RM6.9 billion of which 87% are domestic investments. The investors are Petronas, Shell, Esso and Conoco.

The demand for lubricating oils is estimated to range between 25,000 to 300,000 metric tons per annum (mtpa). The major companies in this sector are Petronas, Shell, BP, Esso, Mobil and Caltex which supply 70% of the total demand. The remaining 16 companies in production are mainly SMIs. Total investments in this sector are estimated at RM1.1 billion of which 63% are domestic investments. Base oil for the production of lubricating oils is currently imported as base oil production is only expected to start in 2008.

Natural gas is mainly used for the production of liquefied natural gas (LNG), power generation and as feedstock for the petrochemical industry. Malaysia is currently the third largest producer of LNG in the world after Algeria and Indonesia, with a capacity of 24 million mtpa. The Bintulu complex in Sarawak consists of three LNG plants with total investments of RM13 billion. It is the single largest site for LNG in the world. Eighty per cent of the investment is owned by Petronas and the Sarawak State Government. Foreign investors involved in these projects are Shell, Mitsubishi and Nippon Oil LNG. The entire LNG production is exported, mainly to Japan, Republic of Korea and Taiwan. Currently, the Bintulu complex also produces 450,000 mtpa of LPG, mainly for the export market.

The six gas processing plants (GPPs), with a combined capacity of 2,000 million standard cubic feet of gas per day and total investments of RM4 billion, are located in Terengganu. The GPPs produced methane (sales gas) for power generation and ethane, propane, butane and condensate as feedstock for the petrochemical industry. The GPPs are part of the Peninsular Gas Utilisation (PGU) Project which includes a trans-peninsular gas transmission pipeline system connecting the GPPs to various industrial areas in Peninsular Malaysia.

The availability of hydrocarbon feedstock from indigenous oil and gas has led to the development of the petrochemical industry. The two ethane crackers in Kertih which use ethane from the six GPPs in Kertih and Tok Arun provide feedstock for the polyethylene plants, acetic acid plant and DOW Petronas ethylene derivatives complex. Condensate from the GPPs also provide feedstock to the aromatic plant in Kertih for the production of paraxylene and benzene.

Propane from the GPPs is the raw material for the propane dehydrogenation plant in Gebeng. This provides feedstock to the polypropylene and MTBE plants and also the BASF Petronas integrated propylene derivatives complex for the production of acrylics, oxo alcohols, butanediol, butylacrylates, plasticisers and tetrahydrofurane.

Titan's integrated operation in Pasir Gudang-Tanjung Langsat, Johor includes a naphtha cracker which provides feedstock for its own production of polypropylene, polyethylene and aromatics. It also provides feedstock for the production of ethylene vinyl acetate (EVA). Naphtha is available from the petroleum refineries and Shell's middle distillates synthesis (MDS) plant in Bintulu, Sarawak. However, a large proportion of the naphtha requirement is still being imported.

There are currently 40 companies in operation with a capacity of 12.8 million tones of petrochemical products annually. Total investments in these companies is RM31.5 billion, of which 47 per cent is domestic and 53 per cent is foreign. In comparison, before 1990, there were only six petrochemical companies in Malaysia, with a total production capacity of 2.2 million mtpa. Total investments in these companies was RM2.7 billion.

The range of products produced by these companies includes commodity and engineering grade plastic resins, petrochemical derivatives as well as specialized and fine chemicals.

The main domestic investor in the petrochemical industry is Petronas. The USA is the largest source of foreign investment contributing 40 per cent of total foreign investments in petrochemicals. The major investors are Dow Chemicals, BP Amoco, Shell, BASF, Eastman Chemicals, Toray, Mitsubishi, Idemitsu, Polyplastic, Kaneka, Dairen and the Titan Petchem Group.

Petronas has also made significant contributions to the development of support infrastructure, utilities and services dedicated to the industry. This has created an investment environment which is conducive for the petroleum and petrochemical industry to expand, particularly in Kerteh, Terengganu and Gebeng, Pahang.

The development of the plastic fabrication industry is supported by the local production of polymers and plastic resins. At least 60 per cent of the local consumption of plastic resins is sourced locally. The plastic conversion and fabrication sector is one of the important supporting industries catering mainly to the E&E, automotive and construction industries. Plastic resin compounders, converters and fabricators provide the downstream linkage to the polymer ndustry.

Malaysia is a net exporter of petroleum products and petrochemicals. In 2005, the petroleum products and petrochemical industry was estimated to contribute RM56 billion to the country's export earnings compared with RM49 billion in 2004. The main export markets were People's Republic of China, ASEAN, the USA and Japan. Imports totaled RM 37 billion in 2005 compared with RM32 billion in 2004. Imports were mainly from Singapore, Saudi Arabia and he USA.

In 2005, Malaysia was a net importer of petrochemical products, with imports of RM17.3 billion and exports of RM16.8 billion. In 2004, imports totaled RM15.6 billion while exports amounted to RM16.1 billion.

While People's Republic of China remains the largest export market for Malaysian products, there could be potential for increased demand for commodity-type petrochemicals such as polyethylene (PE), polypropylene (PP) and polyvinylchloride (PVC) resins from the other ASEAN countries, especially Cambodia, Laos, Myanmar and Vietnam as their economies grow. The demand from Thailand, Indonesia and the Philippines would be for higher value-added products such as oxo-alcohols, polybutylene terephthalate (PBT), polyacetal (PA) and acrylonitrile butadiene styrene (ABS) resins.

Projects Approved in 2005

In 2005, a total of 15 projects were approved in this sector with investments of RM735 million compared with RM1.9 billion in 2004. Eight were new projects (RM660 million) while seven were expansion/diversification projects (RM75 million). Domestic investments amounted to RM602millon (82%) and foreign investments totaled RM133 million (18%).

Among the major projects approved were:-

- A Malaysian-owned new project with investments of RM420.6 million, to produce ammonia;
- ABF-Namhae Melamine Sdn Bhd, an ASEAN-Korean new joint-venture project with investments of RM175 million to produce melamine powder;
- MTBE Malaysia Sdn Bhd with additional investments of RM60.9 million to diversify into the production N-butane, iso-butane and hydrogen rich gas.

The proposed melamine powder plant in Bintulu, Sarawak will make melamine available for the production of melamine-formaldehyde adhesives used by the plywood and other wood-based industries, providing further linkages between the petrochemical and wood-based sectors.

The expansion project by MTBE Malaysia Sdn Bhd to produce N-butane, iso-butane and hydrogen rich gas will provide synergies with BASF Petronas Complex in Gebeng, Pahang, which uses these materials as feedstock. In addition, BASF Petronas has also planned to extract carbon dioxide from its syngas plant for sale. This will further reduce the emission of greenhouse gases from their integrated petrochemical complex.

The BASF Group has also been approved Operational Headquarters (OHQ) status to establish an Asia Pacific Shared Services Centre with more than 400 staff to provide IT and Information Systems support services as well as other services such as financial and human resource management services to 42 related companies in 15 countries in the Asia Pacific region, including People's Republic of China and Japan.

In terms of implementation of approved petroleum and petrochemicals projects, the bitumen refinery in Kemaman, Terengganu is currently under construction. In Gebeng, Pahang, the polybutylene terephthalate (PBT) resin plant, being constructed by Toray BASF PBT Sdn Bhd will be commissioned in the first quarter of 2006. The plant will make available a new type of engineering plastic, PBT, for the plastic products processing sector. This resin is used mainly in the production of automotive parts and E&E products. In Pasir Gudang-Tanjung Langsat, Titan's planned expansion/diversification into the production of propylene, polypropylene and butadiene is currently implemented. The refinery complex in Melaka is also expected to start production of base oil in 2008.

The high price of crude petroleum in 2005 has led to increased operating capacities of the refineries and petrochemical plants in the country as well as high energy costs. This has soured energy conservation projects such as the RM466 million co-generation facilities currently being implemented by the two Petronas refineries in Melaka.

4. PLASTICS INDUSTRY

The Malaysian plastics industry continued with its robust growth in 2005 despite higher crude oil and resin prices. Total sales of the industry were estimated at RM13 billion in 2005, an increase of 15 per cent compared with 2004. This was attributed mainly to export sales which expanded by 19 per cent. The plastic products industry contributed 2.7 per cent to GDP. Total investments are estimated to be RM5 billion. There are currently 1,400 plastic manufacturers in the country with a total of 81,000 employees.

Malaysia is a net exporter of plastic products, with exports estimated to increase from RM5.4 billion in 2004 to RM6.5 billon in 2005. Major export destinations were People's Republic of China, Hong Kong, Singapore, Japan and Thailand. The major products exported were packaging materials such as flexible films, sheets and bags, bottles and containers (50%) and plastic components for the E&E industry (27%).

Imports of plastic products increased to RM4.9 billion in 2005 compared with RM4.7 billion in 2004. The imports were mainly from Japan, Singapore, People's Republic of China, the USA and Thailand. The main items imported were articles of plastic (59%) and plates, sheets, films and foils (39%).

Total resin consumption in 2005 was estimated at 1.5 million tonnes compared with 1.4 million tonnes in 2004. This was attributed to the growth in demand in the E&E industry, particularly household appliances and components of ICT devices and packaging products.

Of the 1,400 plastic product manufacturers, 900 (70%) are SMIs. About 800 (60%) of these companies are Malaysian-owned. The main production processes used in the industry are injection moulding, film extrusion, blow moulding, pipes and profile extrusion, foam moulding and composite fabrication.

The main market segments are plastic packaging, E&E components, household, automotive, construction and agriculture.

While currently relatively small, the demand for plastic parts and components for medical equipment for the emerging biotechnology industries is expected to grow. Efforts will be undertaken to encourage local and foreign investors to produce such high value-added and precision products in the country. This will eventually bring about changes in the market segment with a decline in the dominance of the packaging segment and an increase in the production of moulded products using engineering plastics, bringing the industry in line with the plastics industry in developed countries such as Japan, Republic of Korea and Taiwan.

In 2005, total world consumption of plastic resins was estimated at 171 million tonnes per annum compared with Malaysia's estimated consumption of 1.5 million tonnes (0.9%). Per capita consumption of plastic products is 55kg in Malaysia. This is still considered low, compared with 160kg in German, 155kg in the USA, 90kg in Singapore and 87 kg in Japan. However, consumption is higher than in Thailand (30kg) and People's Republic of China (22kg). The demand for plastic resins is expected to increase in view of advances in product specifications and designs which will

lead to new applications for plastics. The high resin prices in 2005 have maintained the demand for recycled resins and interest in recycling activities.

Polyethylene (PE), polypropylene (PP), polyvinylchloride (PVC) and polystyrene (PS) remain the main types consumed in the country. The industry also witnessed increasing usage of engineering plastics such as acrylonitrile butadiene styrene (ABS) acrylonitrile styrene (AS), polyacetyl (PA) and polyester copolymers which are available locally. However, other engineering plastics such as polyamides (nylons) and polycarbonates (PC) will continue to be imported, while polybutylene terephthalate (PBT) will be available locally in 2006 from Toray BASF PBT Resin Sdn Bhd's new plant in Gebeng, Pahang. Polymer blends such as gas reinforced polypropylene and nylons have also been introduced. The engineering plastics are mainly used for the production of parts and components for the E&E industry, automotive parts and medical equipment. In flexible packaging, more bio-, photo- or chemical degradable plastics are being introduced as the industry becomes more aware of the need to be environment-friendly.

During the year, efforts have been made to begin Life Cycle Inventory Analysis (LCIA) in plastic products in line with the moves in the developed markets such as the European Union (EU) and Japan, to monitor the amount of greenhouse gases emitted in the production of plastic products. A national LCIA database is currently being prepared by SIRIM with assistance from Japan.

Projects Approved in 2005

In 2005, a total of 81 projects were approved with investments amounting to RM1.2 billion compared with 87 projects with investments of RM679.4 million in 2004. Domestic investments amounted to RM585 million (49%) while foreign investments totaled RM595 million (51%).

Of the 81 projects approved, 44 were new projects with investments of RM520 million while 37 were expansion/diversification projects (RM660 million). There were 51 Malaysian-owned projects approved (RM608 million), of which 33 were new projects (RM433 million) while 18 were expansion/diversification projects (RM175 million).

Plastic packaging remained the dominant sub-sector with 21 projects approved (26%) involving investments of RM591 million (50%). Of these, 13 were new projects (RM143 million) and eight were expansion/diversification projects (RM447.7 million). The majority of these projects were for the manufacture of flexible films, sheets and bags and blow moulding bottles and containers.

Among the major projects approved were:-

- Penfibre Sdn Bhd with investments of RM345 million from Japan, to expand he production of polyethylene terephthalate (PET) film with new grades.
- PET Far Eastern (M) Sdn Bhd, a Malaysian-Taiwanese new joint-venture project with investments of RM34 million, to produce polyethylene terephthalate (PET) bottles and performs.
- HondTat Industries Sdn Bhd, a Malaysian-owned new project with investments of RM34.7 million, to produce plastic bags and films.

In the plastic components sub-sector, a total of 23 projects were approved with investments of RM213 million. Sixteen projects were for expansion/diversification (RM116 million) and seven were new projects (RM97 million). The major project approved involved an existing foreign-owned company with additional investments of RM26 million to expand its production of plastic parts and components, and sub-assemblies thereof.

In the consumer and industrial products sub-sector, 21 projects were approved with investments amounting to RM234 million. Major projects approved were:-

- ME-Plas (M) Sdn Bhd, a majority Malaysian-owned joint-venture project with investments of RM44.6 million to produce high-impact anti-bacteria water pipes.
- IEV Manufacturing Sdn Bhd, a Malaysian-Australian joint-venture project with investments of RM38 million to produce marine growth preventers made of plastics.

High resin prices had maintained the strong interest in recycling activities. This was also in line with the greater environmental awareness shown by both the plastic products producers and consumers. Five projects were approved for the recycling of plastics with investments of RM50.9 million. The major project approved was a Malaysian-owned project with investments of RM31.3 million to produce recycled plastic pellets and flakes.

Five projects were approved for the production of plastic compounds (RM72 million) including two new Malaysian-owned projects for the production of anti-bacterial compounds and PVC compounds with investments of RM22 million. The other six projects were approved for the manufacture of masterbatch, formalin, wax products and epoxy resin with investments of RM19.9 million.

Fifty-six per cent (56%) of the investments in the plastic products industry in 2005 involved expansion/diversification projects. This indicates that existing Malaysian manufacturers are competitive and able to expand and diversify their operations in Malaysia, despite strong competition from lower cost locations.

The projects to produce anti-bacteria plastic water pipes and anti-bacterial plastic compounds indicated the shift of the industry towards higher value-added products to cater to the needs of a more health-conscious market. The industry also ventured into innovative uses of plastics, such as in the production of marine growth preventers to protect structures like oil rigs from marine growths.

The increasing usage and availability of locally-produced engineering plastics will lead to the production of a wider range of precision parts and components for the medical device, automotive and E&E industries. The emerging biotechnology industry will require a large number of equipment made of plastics. Generally, such equipment needs to be manufactured under clean-room conditions and requires special properties such as being able to handle living organisms without contamination to the users or the environment.

The high prices of petroleum products such as plastic resins and the growing environmental awareness has also hastened research into sources of renewable and biodegradable plastic materials -

based on natural products such as corn starch, glucose and palm oil. While materials such as polylactic acid are already available on a commercial basis, prices tend to be high.

For plastic converters, there is potential to add to the value chain by developing specific applications which are strategic such as in engineering plastics, composite materials and environment-friendly products.

CONCLUSION

The petroleum products industry group sub-sector is one of the main contributors to the growth of the manufacturing sector in Malaysia. The development of petroleum products sub-sector has been driven by the availability of hydrocarbon feedstock from the indigenous oil and gas. Employment in the petroleum products sub-sector registered growth, with synthetic resins sub-sector recording the highest increase of 11.2% to 5,176 employees from 4,654 employees in 2003. The increase was due to rapid growth in the petrochemical industry which requires a large number of skilled and experienced technical manpower.

The Malaysian petrochemical industry has moved up the value chain with the establishment of the crackers, syngas and aromatic facilities. These facilities produce the basic feedstock for the petrochemical industry and reduce the dependence on imports of this feedstock. Petroleum products industry group has been identified as a potential industry to be further developed through expansion and diversification of its current activities both in the manufacturing and manufacturing-related services facilities. The development potential that has yet to be fully tapped is the full integration of petrochemical complexes in Kertih and Gebeng, given the identification of new products which wil fit into the two petrochemical complexes.

Committee Meetings

1. General Matters & Raw Materials Committee

GENERAL MATTERS & RAW MATERIALS COMMITTEE

1. Review of 2005

Malaysia economy registered a 5.3% annual growth rate last year. Its petrochemicals industry operated at higher rates compared to 2004 amid skyrocketing crude oil prices.

Table 1: Production, Import, Export and Consumption of Raw Material in Malaysia.

Product	Unit: KMT	2003	2004	2005	Change %
Ethylene	Production	1,494	1,564	1,610	3
	Import	31	65	39	-67
	Export	82	115	105	-10
	Consumption	1,443	1,514	1,531	1
Propylene	Production	837	914	934	3
	Import	36	18	24	25
	Export	33	0	0	n/c*
	Consumption	840	932	960	3
	Consumption	32	34	36	6
Benzene	Production	259	297	275	-8
	Import	154	153	134	-14
	Export	148	141	151	7
	Consumption	168	162	161	-1

NOTE: *n/c indicated no change.

Table 2: Nameplate capacity for raw materials in Malaysia in 2005.

Product (Unit: KMT)	Ethylene Malaysia Sdn Bhd	Optimal Olefins (M) Sdn Bhd	MTBE (M) Sdn Bhd	Aromatics Malaysia Sdn Bhd	Titan Chemicals Corp. Bhd	Shell (FCC)	Total
Ethylene	400	600			730		1,730
Propylene		95	380		420	140	1,035
Benzene				195	110		305

PETRONAS currently has two petrochemical complexes located in Kuantan, Pahang and Kertih, Terengganu for its olefins and aromatics derivatives production since 1995. Titan, on the other hand, has its own complex in Pasir Gudang, Johor Bahru since 1993 by using naphtha feedstock.

Approximately 95% of olefins capacities in Malaysia i.e. Ethylene Malaysia (M) Sdn Bhd, Optimal Olefins (M) Sdn Bhd and Titan Chemical Corp. Bhd for its integrated domestic polyolefins production. The remaining of 5% is for export market such as China and other neighboring countries.

Total of 3 complexes, the ethylene nameplate capacities are about 1.73 million tons per year. In 2005, Malaysia ethylene plants were operated at 94% as downstream demand increased by

3.5% to 1.5 million tons per year. Import of ethylene has been reduced by 67% from 65kmt in 2004 to current 39kmt from Saudi Arabia, Korea, Taiwan and United Kingdom. Export of ethylene has been reduced by 8% compare to last year resulting from strong domestic demand. Malaysia's largest trade partners for ethylene business are Indonesia, Singapore and Taiwan throughout past several years.

Total propylene production was at 94% to 934 kmt per annum and polypropylene demand was growing at a rate of 6%. MTBE (M) Sdn Bhd produced 380,000 tons with a propane-dehydration (PDH) unit and diverts to its integrated polypropylene plant.
Titan has expanded its one of the propylene units at end 2005 by 20kmt to 150kmt per year.

Import of propylene has been increased by 3% from 18kmt in 2004 to current 24kmt as polypropylene registered a substantial growth of 6%. The largest import partners for propylene are Singapore and United States of America.

On the other hand, butadiene is used for producing ABS resin in Malaysia. Toray Plastics operates a 200kmt per year ABS facility in Penang. Malaysia currently has no producer for butadiene and relied heavily on imported butadiene.

Aromatics Malaysia de-bottlenecked its aromatics complex by converting xylene isomerization process from ethylbenzene isomerization type to ethylbenzene dealkylation type during the second quarter of 2005. The incremental benzene capacity is 70kmt per annum.

Malaysia's benzene exports were increased by 7% from previous year to 151kmt in 2005 mainly to Singapore and Thailand whilst imports were reduced to 134kmt from neighboring countries such as India.

2. Prospects for 2006

International Monetary Fund (IMF) and Bank Negara project Malaysia's economy to be 5.8% in 2006. Titan has expanded its ethylene by 30kmt to 300kmt per annum in February 2006 and it is expected to support its newly acquired polyethylene plant in Indonesia after first quarter of 2006. Furthermore, Titan is planning for a 115kmt per year propylene plant via metathesis process and a 150kmt per year butadiene plant to be built in November 2007.

The domestic consumption of polyethylene is anticipated to grow by 6.3% to 890kmt per year and polypropylene is at 5.9% to 365kmt per annum. These two sectors continue to be the major force for ethylene and propylene demand.

The continuous increasing competition from China and Middle East is expected to pose new challenges for Southeast Asia olefins producers and market prices in the future. The rise of China and India, in terms of olefins downstream sectors i.e. polyolefins and vinyls remain to be the determinant for international plastics demand. Nevertheless, Malaysia olefins industry will continue to maintain its significant role for supporting its downstream activities.

In early 2006, Titan Chemicals Corp. Bhd in Malaysia will expand its capacity by 15kmt per annum following its cracker expansion. Malaysia's benzene sector is expected to remain its strong presence as an exporter within the region for the coming years with the expansions of

both companies to support its domestic consumption and neighboring countries' import requirements.

2. Polyolefins Committee

POLYOLEFINS COMMITTEE

2005 Review

The Malaysia economy expanded by 5.3% in 2005, the moderate growth compared to previous year. The economy benefited from both stronger external and domestic demand.

a) LDPE

Domestic demand grew moderately at 5%.
The export volume is high to all countries around the region as domestic demand is still relatively insignificant.

b) LLDPE

Domestic demand increased by 5% with new demand mainly from stretch film application. A high portion of LLDPE supplies are imported.

c) HDPE

Domestic demand expanded by 7% with import material grew 6% on the back of strong export demand.

d) PP

Domestic demand increased 10% as it due to strong domestic automotives and packaging sector.

2006 Outlook

With world GDP expected to be around 3.0 – 3.6% grow in 2006, consultant forecasting petrochemicals utilization rates shall be above 90%; a level where producers have historically enjoyed pricing power. However, high crude oil price may not only support price hike in petrochemical industry, but can also affect the global demand growth rate.

Malaysia's economy expected to expand slightly better at 6%.

a) LDPE
Production expected to be lower due to Petlin's maintenance turnaround. The domestic demand is forecasted to grow by 10%.

b) LLDPE
The demand will increase by 9% as newly installed capacities shall be operated fully this year.

c) HDPE
Production expected to decline due to Titan's maintenance turnaround. The domestic demand is likely to grow by 4% as downstream fabricators continued to invest in the businesses.

d) PP
Production is expected to decline by 1% due to Titan's maintenance turnaround. Similar to past year, the domestic demand is expected to increase by 6%.

3. PVC Committee

PVC COMMITTEE

(Unit: 1,000MT)

	2004	2005	2006 - Prospects
Capacity	257	280	280
Production	152	233	233
Domestic Demand	142	150	159
Balance	10	83	74
Import	41	41	41
Net Inventory	51	124	115

Number of products = 4 (include 1 Paste PVC of 30,000MTS Capacity)

2005 RESULTS:

Demand growth was severely affected by:-

a) Acute shortage of foreign labour especially in the construction industry
b) High oils price
c) Aggressive expansion by Carbide PVC producers in China.

FUTURE PROSPECTS

According to the Construction Industry Development Board (CIDB):-

a) More construction work contracts is expected to be given out during the earlier part of 9th Malaysia Plan (9MP) implementation
b) 2 Projects to be continued from 8th Malaysia Plan are namely
   i) East Coast highway phase 2
   ii) Rawang – Ipoh dual track railway.

The expenditure limit of the 9th Malaysia Plan would be around RM150b from 2006 – 2010 and in the first year, an allocation of RM30b has been projected. Assuming that, 70% of this allocation was the initial expenditure for the implementation of the construction projects, the value of work would come to RM21b.

With the government sector's contribution estimated at about 53% or RM21b and that in the private sector of 47% or RM19b, the total value of new works in 2006 is projected at RM40b. – Bernama

4. Styrenics Committee

B. STYRENICS COMMITTEE

MALAYSIAN STYRENIC DERIVATIVE SUPPLY & DEMAND (2002 - 2009)

		2003	2004	2005	2006	2007	2008	2009
SM	Capacity	220	220	220	220	220	220	220
	Demand	315	320	310	334	334	390	405
PS	Capacity	140	140	140	140	140	140	140
	Demand	164	154	148	148	152	154	156
ABS	Capacity	220	220	220	220	220	330	330
	Demand	99	95	100	100	102	105	108
EPS	Capacity	75	75	75	75	75	75	90
	Demand	36	36	35	35	36	38	40

1. Bigger capacity of styrenic based polymers commenced in early 1990s. Currently:
    - GPPS/HIPS:140Kmts(Idemitsu :Petrochemicals)
    - ABS : 220Kmts (Toray)
    - EPS : 75Kmts (BASF)

2. Idemitsu SM started production in 1997 with 200Kmts. Capacity was increased to 220Kmts in 2003.

3. Malaysian demand for Styrene based polymers has been closely related to export oriented E&E Industry:
    - PS : 148 Kmts
    - ABS : 136 Kmts
    - EPS : 36 Kmts

4. Upstream feedstock for SM, i.e. Ethylene & Benzene, are available domestically.

5. There is no indication of capacity expansion up to 2006. ABS capacity will be increased from 220 Kmts to 330 Kmts in early 2008.

6. Malaysian E&E demand may be stagnant or slightly **increased** with the relocation of production capacity to China.

Malaysian SM CAPACITY & DEMAND

YEAR	2003	2004	2005	**2006**	2007	2008	2009
DEMAND	315	320	310	**334**	334	390	405
CAPACITY	220	220	220	**220**	220	220	220

BALANCE	-95	-100	-90	**-114**	-114	-170	-185

5. Synthetic Rubber Committee

SYNTHETIC RUBBER COMMITTEE

MALAYSIAN PRODUCTION OF SR

Malaysia's production of synthetic rubber (SR) is relatively small compared to natural rubber (NR). It is estimated that 20,000 tonnes of Acrylonitrile Butadiene (NBR) latex was produced in Malaysia in 2005.

The recently announced expansion will add 20,000 tonnes (by the second half of 2007) of capacity per annum in order to meet the growing demand from synthetic glove manufacturers. The butadiene monomer used in the production process is likely to be sourced from neighbouring Thailand.

The tables below show the estimated SR output and consumption (vs. NR) for Malaysia.

Synthetic Rubber Production ('000 tonnes)

	2004	2005
Malaysia	**18**	**20**

NR and SR Consumption ('000 tonnes)

	2004 NR	2004 SR	2004 Total	2004 %SR	2005 NR	2005 SR	2005 Total	2005 %SR
Malaysia	**416**	**137**	**553**	**25**	**426**	**133**	**559**	**24**