



Profit From Malaysia's

Petrochemical Industry

A Perfect Time to Benefit from Malaysia's Petrochemical Infrastructure

Through the harnessing of its rich oil and gas reserves and the forging of smart partnerships with some of the world's largest petroleum companies, Malaysia has established the ideal infrastructure to support a vibrant petrochemical industry.

Today, investors benefit from the facilities that are already in place. Integrated petrochemical complexes offer centralised utilities, efficient storage services, and a comprehensive transportation network that help reduce capital and operational costs.

In addition, Malaysia provides a wide range of tax incentives to meet the varying needs of investors. Customised incentive packages that cover tax and non-tax incentives are also available to key projects.

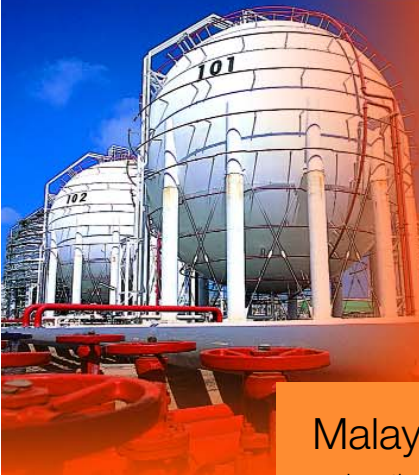
The presence of petroleum giants such as Shell and ExxonMobil for over 100 years demonstrates their long-term confidence in Malaysia's oil and gas industry. Through efforts spearheaded by the government and the country's national oil company, Petroliam Nasional Berhad (PETRONAS), Malaysia has also attracted investors and business partners among petrochemical multinationals such as Dow Chemicals, ConocoPhillips, Kaneka, Polyplastics, Toray, Mitsubishi, Dairen, Mitsui, BP Amoco, BASF, Idemitsu, Titan, DSM, Thirumalai and Eastman Chemicals.

The United States is the largest source of investments in Malaysia's petrochemical sector, followed by Japan, the United Kingdom, Germany and Taiwan.



The ASEAN Bintulu Fertiliser plant in Bintulu, Sarawak





Rich in **oil & gas reserves** and
Petrochemical Feedstocks

Malaysia ...

- has the world's 25th largest crude oil reserves (4.5 billion barrels)
- has the world's 12th largest natural gas reserves (89 trillion cubic feet)
- is the world's 3rd largest producer of liquefied natural gas

Location of Oil Refineries in Malaysia

Oil Refineries	Location
Petronas Penapisan (Terengganu) Sdn Bhd	Kertih, Terengganu
Petronas Penapisan (Melaka) Sdn Bhd	Tangga Batu, Melaka
Malaysia Refining Company Sdn Bhd	Tangga Batu, Melaka
Shell Refining Company (FOM) Bhd	Port Dickson, Negri Sembilan
Esso (Malaysia) Bhd	Port Dickson, Negri Sembilan

Oil & Gas Reserves in Malaysia (as at January 2004)

RESERVES	NATURAL GAS (trillion cubic feet)	CRUDE OIL (billion barrels)
Peninsular Malaysia	32.5	2.03
Sarawak	46.6	1.26
Sabah	9.9	1.21

Above: Storage tanks in Kertih, Terengganu

Right: The Duyong Gas Complex off Terengganu

Top, facing page: A gas processing plant in Terengganu





To further boost gas supply within the country, Malaysia has formed joint-venture partnerships with ASEAN members. It has signed an agreement with Indonesia to purchase 1.8 trillion cubic feet of gas over the next 20 years. A new source of gas supply will also be made available when the Malaysia-Thailand Joint Development Area comes onstream.

The availability of feedstock at competitive prices has made Malaysia a viable petrochemical hub in the ASEAN region, attracting more than US\$9 billion of investments from leading petrochemical and chemical manufacturers.

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.

Production of Petrochemical Feedstocks (as at January 2004)

Petrochemical Products	Capacity (mtpa)	Company/Refinery
Naphtha	2,380,000	<ul style="list-style-type: none"> • Petronas Penapisan (Terengganu) Sdn Bhd • Petronas Penapisan (Melaka) Sdn Bhd • Malaysia Refinery Company Sdn Bhd • Shell Refinery Company (FOM) Bhd • Esso (Malaysia) Bhd
Methane (sales gas)	2,000 mmscf	• Petronas Gas Berhad
Olefins:		
<i>Ethane</i>	1,383,000	
<i>Propane</i>	1,799,000	
<i>Butane</i>	1,166,000	
<i>Condensate</i>	1,260,000	
Propane	148,400	• Malaysia LNG Tiga Sdn Bhd
Butane	273,900	
Liquefied Petroleum Gas (LPG)	137,700	
Ethylene	1,560,000	<ul style="list-style-type: none"> • Titan Petrochemical (M) Sdn Bhd • Ethylene Malaysia Sdn Bhd • Optimal Olefins (M) Sdn Bhd
Propylene	766,000	<ul style="list-style-type: none"> • Titan Petrochemical (M) Sdn Bhd • MTBE (M) Sdn Bhd • Optimal Olefins (M) Sdn Bhd
Benzene, Toulene and Xylene (BTX)	775,000	<ul style="list-style-type: none"> • Titan Petrochemical (M) Sdn Bhd • Aromatics Malaysia Sdn Bhd



World-class Facilities in Petrochemical Zones

Kertih, Terengganu

Formerly a quiet fishing village, Kertih 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.

Facilities & Infrastructure

- Gas processing plants
- Peninsular Gas Utilisation (PGU) project
- Centralised utility facilities
 - Supply of utilities such as power, industrial gases, water and steam
- Institut Teknologi Petroliaam
 - Training centre
- Kertih Port
 - Centralised tankage facilities
 - Mainly bulk liquid port
- Kuantan Port
 - Centralised tankage facilities
 - Container and bulk liquid port
 - Railway linking Kertih, Gebeng and Kuantan Port

Petrochemical Plants in Kertih

PETROCHEMICAL PLANTS	PRODUCTS
Petronas Aromatics Sdn Bhd	Paraxylene, Benzene
Petronas Ammonia Sdn Bhd	Ammonia
BP Petronas Acetyls Sdn Bhd	Acetic Acid
Ethylene (M) Sdn Bhd	Ethylene
Polyethylene (M) Sdn Bhd	Polyethylene
Optimal Olefins (Malaysia) Sdn Bhd	Ethylene and Propylene
Optimal Chemical (Malaysia) Sdn Bhd	Ethanolamines, Ethoxylates, Glycol Ethers, Butanol and Butyl Acetate
Optimal Glycol (Malaysia) Sdn Bhd	Ethylene Oxide, Ethylene Glycol
Petlin Sdn Bhd	Low Density Polyethylene
Vinyl Chloride (M) Sdn Bhd	Vinyl Chloride Monomer and Polyvinyl Chloride

Gebeng, Pahang

Gebeng 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.



Facilities & Infrastructure

- Peninsular Gas Utilisation (PGU) project
- Centralised utility facilities
 - Supply of utilities such as power, industrial gases, water and steam
- Kuantan Port
 - Centralised tankage facilities
 - Pipeline and piperack system connecting Gebeng to Kuantan Port
 - Container and bulk liquid port
 - Railway linking Kertih, Gebeng and Kuantan Port
- Environment Technology Park
 - Incorporating a training centre, a waste collection and processing centre as well as raw material management and storage facilities, maintenance and servicing facilities.
- East Coast Highway (expected completion in 2004)

Petrochemical Plants in Gebeng

PETROCHEMICAL PLANTS	PRODUCTS
BASF Petronas Chemical (M) Sdn Bhd	Acrylic Acid and Esters, Syngas, Butyl Acrylate, Oxo-alcohols, Phthalic Anhydride and Plasticizers, Butanediol, Tetrahydrofurane and Gamma-butyrolactone
Eastman Chemicals (M) Sdn Bhd	Polyester Copolymers
Amoco Chemicals (M) Sdn Bhd	Purified Terephthalic Acid
Kaneka Paste Polymers Sdn Bhd	Dispersion Polyvinyl Chloride
Kaneka Malaysia Sdn Bhd	Methyl Methacrylates Copolymers
MTBE (Malaysia) Sdn Bhd	MTBE, Propylene
Polyplastics Asia Pacific Sdn Bhd	Polyacetals
Polypropylene (M) Sdn Bhd	Polypropylene

Top, facing page: Centralised tankage facilities at the Kertih Terminal
 Above: The control room of a petrochemical plant in Gebeng, Pahang
 Below: The BP Amoco plant in Gebeng



Pasir Gudang-Tanjung Langsat, Johor

Pasir Gudang, located next to the Johor Port, is now an established industrial area. To cope with the needs of the growing petrochemical industry, the adjacent Tanjung Langsat site has been developed to enhance manufacturing capacity.

Facilities & Infrastructure

- Peninsular Gas Utilisation (PGU) project
- A co-generation plant
- Tank farms are being developed for bulk storage of petrochemical liquid
- Johor Port
 - With a 1,000-metre berth and a hazardous cargo jetty
 - Three hazardous liquid bulk terminals to handle LPG, chemicals and petrochemicals
- Tanjung Pelepas Port, a world-class container port
- Tanjung Langsat Port
 - Located adjacent to the 4,000 acres of industrial land in Tanjung Langsat
 - Equipped with a twin-berth jetty consisting of outer (30,000 DWT) and inner (7,000 DWT) berths

Petrochemical Plants in Pasir Gudang-Tanjung Langsat

PETROCHEMICAL PLANTS	PRODUCTS
Titan Petrochemicals (M) Sdn Bhd	Ethylene, Propylene, BTX
Titan Polyethylene (M) Sdn Bhd	Polyethylene
Titan PP Polymer (M) Sdn Bhd	Polypropylene
Petrochemicals (M) Sdn Bhd	Polystyrene
Idemitsu SM (M) Sdn Bhd	Ethylbenzene, Styrene Monomer
BASF (M) Sdn Bhd	Expandable Polystyrene
Dairen Chemical (M) Sdn Bhd	Ethylene Vinyl Acetate



Malaysia has a skilled and trainable workforce.



Bintulu, Sarawak

Home to several gas-based petrochemical plants, Bintulu is also 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.

Facilities & Infrastructure

- Bintulu Port
- Bintulu Airport

Petrochemical Plants in Bintulu

PETROCHEMICAL PLANTS	PRODUCTS
Asean Bintulu Fertiliser (M) Sdn Bhd	Ammonia, Urea
Malaysia LNG Sdn Bhd	Liquefied Natural Gas
Malaysia LNG Dua Sdn Bhd	Liquefied Natural Gas
Malaysia LNG Tiga Sdn Bhd	Liquefied Natural Gas
Shell MDS (M) Sdn Bhd	Middle Distillates

*Above: The Malaysian Liquefied Natural Gas plant in Bintulu, Sarawak
Below: A panoramic view of the Bintulu petrochemical operations*





Incentives for Growth

A corporate tax rate of 28% applies to both local and foreign-owned companies in Malaysia. A wide range of tax incentives is also available to these companies. These incentives are constantly reviewed by the government to ensure that companies in Malaysia maintain their competitive edge.

1. Incentives for Manufacturing Companies

- *Pioneer Status*: Income tax exemption of 70% or 100% on the statutory income for five years; or
- *Investment Tax Allowance*: Investment tax allowance of 60% or 100% on the qualifying capital expenditure for five years. The allowance can be utilised to offset against 70% or 100% of the statutory income.
- *Reinvestment Allowance*: Reinvestment allowance of 60% for 15 years on the qualifying capital expenditure. The allowance can be offset against 70% or 100% of the statutory income.
- *Accelerated Capital Allowance*: An accelerated capital allowance consisting of an initial allowance of 40% and an annual allowance of 20% is available for three years after the reinvestment allowance period.

2. Incentives for High Technology Companies

- Pioneer Status with a tax exemption of 100% on the statutory income for five years; or
- Investment Tax Allowance of 60% on the qualifying capital expenditure for five years which can be offset against 100% of the statutory income.

3. Incentives for Strategic Projects

- Pioneer Status with a tax exemption of 100% on the statutory income for ten years; or
- Investment Tax Allowance of 100% on the qualifying capital expenditure for five years which can be offset against 100% of the statutory income.

4. Pre-packaged Incentives

Customised packages that cover tax and non-tax incentives.

5. Incentives to Strengthen Industrial Linkages

6. Incentives for R&D

7. General Incentives

- Industrial Building Allowance
- Infrastructure Allowance
- Tariff Related Incentives

*Above and below:
Among the business
organisations foreign
investors can approach
for assistance is the
Malaysian International
Chamber of Commerce
& Industry which
represents business
communities from
about 40 countries.*



Why Malaysia?

Ideal Springboard to ASEAN Market

“ Malaysia’s political and economic stability, productive workforce, developed infrastructure, and strategic location in the heart of South-East Asia make her the ideal springboard for manufacturers to launch into the ASEAN region. A growing domestic and regional market, together with a strong partner such as PETRONAS, have contributed to making Malaysia our location of choice. ”

Peter Wentworth, CE, BP Malaysia



Best Combination of Qualities...*Malaysia Boleh!*

“ Eastman Chemical Company’s decision to build a co-polyester plastic plant in Malaysia was based on a two-year study of 11 sites in four countries in South-East Asia. Fourteen factors were evaluated, including access to markets in the region, competitively priced raw materials, availability of capable workforce, a pro-business environment and logistics. Malaysia’s highly skilled workforce has exceeded our expectations. An outstanding investment destination, the country exemplifies the spirit of *Malaysia Boleh!* (Malaysia can do it). ”

David Brubaker, Vice-President (Operations), Eastman Chemical AsiaPacific



Malaysia and Petronas — A Perfect Fit for Dow

“ Dow was looking for a competitive source of raw material, where the infrastructure was in place, where there was a partner with the experience to form a lasting joint-venture. Petronas and Malaysia were the perfect fit for Dow. ”

Robert L Kisker, CEO, Optimal Group



An Oasis of Stability

“ Malaysia has been an oasis of stability, reliability and security in the region, allowing the business community to reap the fruits of their investments many times over. Despite numerous global economic upheavals, we have been able to sustain our business remarkably well, thanks to the tremendous cooperation and understanding of a visionary and pro-business government. ”

S. Okabe, Chief Representative in Malaysia, Toray Industries Inc, Japan



Technology Transfer

“ The Idemitsu Group’s investment in Malaysia goes back to 1972 when its first joint-venture project for polystyrene production started in Johor Bahru, the southern gateway to Peninsular Malaysia. Over the last quarter of a century, we have established a close relationship with the Malaysian oil industry in respect to technology transfer and the purchase of Malaysian crude oil and LPG. ”

Seiki Kuga, Managing Director, Petrochemicals (M) Sdn Bhd and Poly-Star Compounds Sdn Bhd



The Way Ahead

Challenges & Opportunities

With the full realisation of the ASEAN Free Trade Area (AFTA) in 2003, petrochemical manufacturers in Malaysia will benefit from a single market with a total population of 530 million, a combined GDP of US\$737 billion and a total trade of US\$720 billion. In addition, gas and feedstock supply will be further enhanced with the implementation of the ASEAN Gas Grid.

ASEAN intra-regional trade, which grew by 42% from US\$32.6 billion in 1995 to US\$46.3 billion in 2003, is expected to receive a boost when manufacturers begin to take advantage of the wider regional business network. The petrochemical intra-regional trade has experienced an even higher growth of 61.6% from US\$5.6 billion in 1995 to US\$9 billion in 2003.

Petrochemical manufacturers based in Malaysia will not only benefit from AFTA but also from the access to a much larger Asia Pacific market. For example, Malaysia's total exports to China have increased three-fold from US\$3.5 billion in 1995 to US\$12.1 billion in 2001. Even more impressive is Malaysia's export of petrochemicals to China which has multiplied 13 times from US\$43 million to US\$566 million within the same period.

With China being a net importer of petrochemical products, especially fine chemicals and specialised products, her entry into the World Trade Organisation will also open up new business opportunities for petrochemical manufacturers in Malaysia.

Malaysia already has the infrastructure and systems in place for petrochemical manufacturers to compete favourably with regional players. The challenge now is to identify more value-added products, expand market segments, and develop effective marketing strategies.

The Malaysian government, on its part, will implement measures to further enhance the business environment, infrastructure development, human resource support and the position of feedstock supply — the factors for a stable and conducive investment environment that ensures the further development of Malaysia's petrochemical industry.

Malaysia's Multimedia Super Corridor has resulted in a workforce competent in the K-economy.



Why Investors Choose **Malaysia**

- Strategic location
- Gateway to ASEAN and AFTA
- Economic stability
- Government's commitment
- Rich reserves of natural gas
- Competitive source of raw materials
- World-class facilities
- Integrated infrastructure
- Skilled technical manpower
- Quality of life



Kuala Lumpur's light rail transit provides a convenient mode of commuting.



Malaysia uses the latest digital and fibre optics technology to provide high quality telecommunication services at competitive prices.



*Life is an adventure in Malaysia—
a land of perpetual summer.*

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