A Perfect Time to Benefit from Malaysia’s Petrochemical Infrastructure

Through the harnessing of its 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.

The presence of world renowned petrochemical companies such as SHELL, BASF, Eastman Chemicals, Toray, Idemitsu, Kaneka, Polyplastic, Dairen, Mitsui, Reliance Group, Lotte Chemical and the country’s national oil company, Petronas National Berhad (PETRONAS) demonstrates Malaysia’s potential as a strategic investment location for petrochemical industries.

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 operation costs. The Pengerang Integrated Complex (PIC), a new world class petrochemical complex is being developed by PETRONAS in Pengerang, Johor. This new facility will develop value-added products and expand market segments for petrochemicals products in Malaysia. In addition, Malaysia provides a wide range of tax incentives to meet the varying needs of investors.

From 2000 to 2015, Germany is the largest source of foreign investments in Malaysia’s Petrochemical sector, followed by Japan, the Netherlands, the United States and the Republic of Korea.
Malaysia ...

- has the world’s 28th largest reserves of crude oil and condensates (5.8 billion barrels)
- has the world’s 16th largest natural gas reserve (13.2 trillion standard cubic feet)
- has one of the world’s largest production facility at a single location of liquefied natural gas

### Location of Oil Refineries in Malaysia

<table>
<thead>
<tr>
<th>Oil Refineries</th>
<th>Location</th>
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<tbody>
<tr>
<td>SHELL Refining Company (Federation of Malaya) Berhad</td>
<td>Port Dickson, Negeri Sembilan</td>
</tr>
<tr>
<td>Petronas Penapisan (Terengganu) Sdn. Bhd.</td>
<td>Kertih, Terengganu</td>
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<tr>
<td>Petronas Penapisan (Melaka) Sdn. Bhd.</td>
<td>Tangga Batu, Melaka</td>
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<tr>
<td>Malaysia Refining Company Sdn. Bhd.</td>
<td>Tangga Batu, Melaka</td>
</tr>
<tr>
<td>Petronas Malaysia Refining &amp; Marketing Bhd.</td>
<td>Port Dickson, Negeri Sembilan</td>
</tr>
<tr>
<td>Kemaman Bitumen Company Sdn. Bhd.</td>
<td>Telok Kalong, Terengganu</td>
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To complement the existing gas reserve and ensure further security of gas supply, Malaysia has forged partnerships with other ASEAN countries such as Thailand (Malaysia-Thailand Joint Development Area), Vietnam and Indonesia for the supply of gas. In addition, gas supply is further enhanced with the ongoing implementation of the ASEAN gas grid, a venture to make gas available to all the 10 ASEAN countries.

The availability of feedstock at competitive price has made Malaysia a viable petrochemical hub in the ASEAN region, attracting more than RM37.4 billion of the investments in 2015 from leading petrochemical manufacturers.
The six gas processing plants located in Kertih, Terengganu – with a combined capacity of 2,000 million standard cubic feet (mscf) per day – ensure an adequate supply of petrochemical feedstocks such as methane (sales gas), ethane, propane, butane and condensates to meet demands.

In addition to the LNG Regasification Facilities at Sungai Udang Port in Melaka, PETRONAS’ first Floating LNG facility (PFLNG 1) is expected to produce its first drop LNG in Quarter 3, 2016 at the Kanowit field, offshore Bintulu, Sarawak. This will be followed by a second FLNG (PFLNG 2) in the Rotan Field offshore Sabah which is schedule for commissioning in 2018. It will play a significant role of PETRONAS’s effort to unlock the gas reserves in Malaysia’s remote and stranded fields.

Meanwhile, Malaysia’s Peninsular Gas Utilisation (PGU) trans-peninsular gas transmission pipeline channels sales gas to industries around the country.

**Production of Petrochemical Feedstocks**

<table>
<thead>
<tr>
<th>Petrochemical Products</th>
<th>Company/Refinery</th>
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</table>
| **Naphtha**            | • Petronas Penapisan (Terengganu) Sdn. Bhd.  
                         | • Petronas Penapisan (Melaka) Sdn. Bhd.  
                         | • Malaysia Refinery Company Sdn. Bhd.  
                         | • Shell Refinery Company (FOM) Bhd.  
                         | • Petron Malaysia Refining & Marketing Bhd.  
                         | • Kemaman Bitumen Company Sdn. Bhd. |
| **Ethane**             | • Petronas Gas Berhad  |
| **Propane**            |                  |
| **Butane**             |                  |
| **Condensate**         |                  |
| **Ethylene**           | • Lotte Chemical Titan (M) Sdn. Bhd.  
                         | • Petronas Chemicals Ethylene Sdn. Bhd.  
                         | • Petronas Chemicals Olefins Sdn. Bhd. |
| **Propylene**          | • Lotte Chemical Titan (M) Sdn. Bhd.  
                         | • Petronas Chemicals MTBE Sdn. Bhd.  
                         | • Petronas Chemicals Olefins Sdn. Bhd. |
| **Benzene**            | • Lotte Chemical Titan (M) Sdn. Bhd.  
                         | • Petronas Chemicals Aromatics Sdn. Bhd. |
| **Toulene**            |                  |
| **Xylene**             |                  |
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. Located within the PPIC is PETRONAS’ Integrated Petrochemical Complex (IPC), which mainly consists of ethylene-based petrochemical plants.

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 Petroleum Petronas (INSTEP)
  - Training centre
- Kertih Port
  - Centralised tankage facilities
  - Mainly bulk liquid port

Petrochemical Products Produced In Kertih:
- Paraxylene
- Benzene
- Ammonia
- Acetic Acid
- Ethylene
- Polyethylene
- Propylene
- Ethanolamines
- Ethoxylates
- Glycol Ethers
- Butanol
- Butyl Acetate
- Ethylene Oxide
- Ethylene Glycols
Gebeng, Pahang

Gebeng is another petrochemical hub for multinational players like BASF, Reliance Group, Kaneka, Eastman Chemicals 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

Petrochemical Plants in Gebeng Producing:
- Acrylic Acid and Esters
- Syngas
- Butyl Acrylate
- 2-Ethyl Hexyl Acrylate
- Oxo-alcohols
- 2-Ethylhexanol
- Phthalic Anhydride and Plasticizers
- Butanediol
- Tetrahydrofuran
- Gamma-butyrolactone
- Polyester Copolymers
- Purified Terephthalic Acid (PTA)
- Dispersion Polyvinyl Chloride
- Methyl Methacrylates Copolymers
- Methyl Tertiary Butyl Ether (MTBE)
- Propylene
- Polyacetals
- Polybutylene Terephthalate (PBT)
- N-Butane
- Butyl Acetate
- Isoprenol, citral, citronellol, L-menthol, energol-e & energol-c
- DL-Isopulegol
- 2-Ethylhexanoic acid
- Highly reactive polyisobutylene
Pasir Gudang-Tanjung Langsat, Johor

Pasir Gudang, located next to 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
- Tank farms has been developed for bulk storage of petrochemical liquid
- Johor Port
  - Strategically positioned in the heart of the sprawling 8,000-acre Pasir Gudang Industrial Estate
  - With berths of almost 2.4 km, the port provides liquid bulk, dry bulk, general cargo (breakbulk) and container services
  - Three hazardous liquid bulk terminals to handle LPG, chemicals and petrochemicals
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- Tanjung Pelepas Port, a world-class container port
- Tanjung Langsat Port
  - Endowed with a 4.5-kilometre shoreline which is ideal for O&G and marine-related industries
  - Four zones: Storage terminals, oilfield services & equipment (OFSE), regional marine supply base and offshore fabrication & maritime hub.
  - The liquid cargo jetty, with water depth of 15.0 metres, caters to vessels ranging from 5,000 to 120,000 dwt.
  - The dry cargo jetty can cater vessels up to 40,000 dwt.

Petrochemical Plants in Pasir Gudang-Tanjung Langsat

Produce:

- Ethylene
- Propylene
- BTX
- Polyethylene
- Polypropylene
- High Impact Polystyrene
- Ethylbenzene
- Styrene Monomer
- Expandable Polystyrene
- Ethylene Vinyl Acetate
- Styrene butadiene rubber
- Styrene acrylics & full acrylics

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 existing LNG plants in Bintulu, with an additional LNG project currently in active stages of implementation. These plants make up the LNG complex, one of the world’s largest LNG production facilities in a single location.

Facilities & Infrastructure

- Bintulu Port
- Bintulu Airport
- Samalaju Port (due for completion by the end of 2016)

Petrochemical Plants in Bintulu Produce:

- Ammonia
- Urea
- LNG
- Synthetic Gas Oil
- Synthetic Kerosene
- Synthetic Naphtha
- Synthetic Solvents
- Synthetic Detergent Feedstock
- Synthetic Paraffin Wax / Waxy Raffinate

Sipitang, Sabah

The Sipitang Oil and Gas Industrial Park (SOGiP) is strategically located within Sabah, Brunei and Labuan region.

The availability of natural gas as feedstock from Sabah’s offshore production facilities has enabled SOGiP to be well positioned to spearhead the development of oil & gas industry in Sabah. PETRONAS Chemicals Group’s (PCG) Sabah Ammonia Urea (SAMUR) project is currently underway and is estimated for commercial operations in second half of 2016.
8 Profit from Malaysia’s Petrochemical Industry

Incentives for Growth

A corporate tax rate of 25% 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. Other Incentives
   • Industrial Building Allowance
   • Tariff Related Incentives.
   • Tax Incentives for Small and Medium Enterprises to register patent and trademarks.

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.
PETRONAS remains fully committed to its project in Pengerang, Johor and is currently progressing well despite the downturn in the oil and gas industry as a result of the plunge in energy and crude oil prices.

The Pengerang Integrated Petroleum Complex (PIPC) which is located on a 20,000-acre land in Pengerang, will focus on the downstream oil and gas value chain in Johor and will house oil refineries, naphtha crackers, petrochemical plants as well as a liquefied natural gas (LNG) import terminal and a regasification plant. New high-value and high-demand products and by-products such as polymers, pharmaceutical products and plastics will be produced from the refined feedstock.

Projects within the PIPC include the Pengerang Independent Deepwater Petroleum Terminal (PIDPT) and the Refinery and Petrochemical Integrated Development (RAPID) Project. These petrochemical projects which are set to take off in the near future will allow industry players to join forces with local and foreign investors to invest in new technologies and products while creating countless job opportunities.

Existing infrastructure and systems in Malaysia provide a conducive environment for petrochemical manufacturers to compete favourably with regional players. The commitment to identify more value-added products, expand market segments, and develop effective marketing strategies requires measures by Government to further enhance the business environment, infrastructure development, human resources 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.
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

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

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

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