# Contents

## CHAPTER ONE

**MALAYSIAN ECONOMY**

- 1.1 OVERVIEW OF MALAYSIAN ECONOMY IN 2016 ................................. 3
- 1.2 TRADE PERFORMANCE IN 2016 ................................................. 5
- 1.3 INVESTMENTS ........................................................................ 7
- 1.4 ECONOMIC OUTLOOK FOR 2017 ............................................... 8
- 1.5 MALAYSIA – KEY ECONOMIC INDICATORS .................................. 10

## CHAPTER TWO

**PETROCHEMICAL INDUSTRY IN MALAYSIA** ........................................... 11

- 2.1 PETROCHEMICAL INDUSTRY ...................................................... 11
- 2.2 PLASTICS INDUSTRY ................................................................. 12

## CHAPTER THREE

**COMMITTEE REPORTS** ...................................................................... 13

- 3.1 GENERAL MATTERS & RAW MATERIALS COMMITTEE ................. 13
- 3.2 POLYOLEFINS COMMITTEE ....................................................... 14
  - 3.2.1A LDPE .............................................................................. 16
  - 3.2.1B LLDPE ........................................................................... 17
  - 3.2.1C HDPE ........................................................................... 18
  - 3.2.2 PP .................................................................................. 19
- 3.3 STYRENICS COMMITTEE ............................................................. 20
- 3.4 PVC COMMITTEE ...................................................................... 22
- 3.5 SYNTHETIC RUBBER COMMITTEE ........................................... 23
- 3.6 SYNTHETIC FIBER RAW MATERIALS COMMITTEE ................... 28
- 3.7 CHEMICALS COMMITTEE .......................................................... 30

## CHAPTER FOUR

**MALAYSIAN PETROCHEMICALS ASSOCIATION (MPA)** ............................... 34

- 4.1 BACKGROUND ........................................................................ 34
- 4.2 MPA MEMBERS ...................................................................... 34
- 4.3 MPA COUNCIL 2016/2017 .......................................................... 36
- 4.4 MPA SECRETARIAT ................................................................... 37
CHAPTER ONE

MALAYSIAN ECONOMY

1.1 OVERVIEW OF MALAYSIAN ECONOMY IN 2016

In 2016, Malaysian economy continued to face considerable external and domestic headwinds. While some of the impact of earlier domestic shocks gradually dissipated during the year, growth performance was affected by the materialisation of new risks and ongoing adjustments to external shocks that have impacted the economy since end of 2014. External shocks include weak commodity prices, lower growth in both advanced and regional economies and geopolitical developments. Despite these challenges, however, the economy recorded a commendable performance and grew by 4.2% in 2016.

The challenging global landscape necessitated continued spending adjustments by households, businesses and the Government, amid the dissipating impact of previous domestic shocks. Export performance and investment activity were relatively subdued throughout the year following lacklustre global demand and low commodity prices. In addition, the unexpected outturn of political developments in the advanced economies, especially the UK and the US, and the macroeconomic policies adopted by these economies, have led to heightened uncertainty in financial markets and a significant reversal of capital flows from emerging economies. On the domestic front, the economy continued to face headwinds from higher cost of living and weak sentiments. Ongoing adjustments by households, especially the low and middle-income groups, to the increased cost of living were further exacerbated by soft labour market conditions. Concurrently, business and consumer sentiments were affected by a confluence of global and domestic factors, including the heightened volatility in financial markets and the prolonged underperformance of the ringgit.

These external and domestic challenges resulted in a slower expansion across all sectors of the economy during the year. The environment of higher prices and increased uncertainties led to moderate growth of household spending. While tentative signs of a recovery in the spending momentum emerged towards the second half of the year, overall growth of household spending remained below its long-term average of 6.6% (1990 - 2015). Investment growth moderated amid the multiple shocks to the economy and the uncertain business environment. In early 2016, the projection of lower petroleum-related revenue arising from low crude oil prices resulted in the recalibration of the Government’s Budget and re-prioritisation of Government expenditure. The reduction in Government spending further weighed down on real activity.
In the external sector, the current account of the balance of payments remained in surplus, but by a smaller amount. This stemmed from a lower trade surplus as export growth moderated in line with the subdued global demand. The persistent structural deficits in the services and income accounts also contributed further to the narrowing of the current account surplus. The financial account continued to record net outflows. While direct investment registered net inflows, portfolio investment inflows in the first half of the year were offset by larger net outflows in the second half of the year.

The strong fundamentals of the Malaysian economy have accorded Malaysia the ability to weather these challenges. The diversified sources of growth in the economy have allowed the adverse impact of sector-specific shocks to remain manageable. Despite some softening, labour market conditions remained stable with continued income growth providing continued support to household spending. Healthy financial institutions and ample domestic liquidity also ensured orderly financial intermediation. Notwithstanding the weak global demand, Malaysia’s external position remained strong, supported by ample international reserves and manageable levels of external debt.

In addition, appropriate and timely policy responses played a key role in supporting growth during the year. These included a combination of an accommodative monetary policy and targeted pro-growth measures. Bank Negara Malaysia adjusted the Overnight Policy Rate (OPR) downwards to maintain the degree of monetary accommodativeness. The reduction in the OPR was complemented by efforts to increase household disposable income and support business activity. For example, the Government embarked on policies to create a conducive ecosystem for a sharing economy that would unlock new sources of income for households. Other measures, such as the reduction of employees’ EPF contributions and higher payments from Bantuan Rakyat 1Malaysia (BR1M), were also introduced during the year to support low and middle-income households, while incentives were provided to spur business activity, particularly among the small and medium enterprises (SMEs). These included funds and incentives to increase adoption of technology, promote entrepreneurship and increase research and development (R&D) activity.

In recognising the challenges posed by global and domestic trends such as ageing population, the influx of new technologies and lower productivity gains, critical reforms and structural adjustments remained a priority. Efforts to enhance export competitiveness were accelerated in line with the role of the external sector as an important engine of growth for the economy. Ongoing investments to modernise the physical and virtual infrastructure remain on track to meet the rising demand for greater interconnectedness. In developing a high quality workforce, the quality of the education...
system remained a policy priority, with increased emphasis on skills improvement and life-long learning. Notwithstanding the limited impact on economic growth in the short-term, these structural reforms are key to the sustained future growth of the Malaysian economy.

1.2 TRADE PERFORMANCE IN 2016

Malaysia’s trade in 2016 remained resilient despite the uncertainties in the global environment. Total trade grew by 1.5% to reach RM1.485 trillion, compared to RM1.463 trillion in the previous year.

The increase was contributed by higher trade with China, which expanded by RM10.09 billion, the United States of America (USA) (↑RM6.87 billion), Republic of Korea (↑RM3.56 billion), Taiwan (↑RM3.29 billion) and Saudi Arabia (↑RM3.04 billion).

Significant increases were also recorded with Turkey (↑RM2.81 billion), Hong Kong SAR (↑RM1.93 billion), India (↑RM1.85 billion), Mexico (↑RM1.64 billion), Brazil (↑RM1.52 billion), Bangladesh (↑RM1.48 billion), ASEAN (↑RM1.41 billion) and the European Union (EU) (↑RM549.6 million).

Exports rose by 1.1% to RM785.93 billion and imports increased by 1.9% to RM698.66 billion, resulting in a trade surplus of RM87.27 billion, the 19th consecutive year of trade surplus since 1998.

Major contributors to export growth in 2016 were:

- Expansion of manufactured and agricultural exports by 3.2% and 4.7%, respectively, compensating for the lower performance of mining goods;
- Continued growth for electrical and electronics (E&E) exports driven by strong global demand for electronic devices; Rising exports to ASEAN by 5.4% with significant growth to Singapore, CLMV (Cambodia, Laos, Myanmar and Viet Nam) countries and the Philippines;
- Higher exports to Free Trade Agreements (FTA) partners; particularly to Turkey, India and Pakistan;
- Robust export growth to advanced countries, in particular, the USA and Euro zone notably Germany, Belgium, Italy and Hungary; and
- Greater demand from emerging markets such as Mexico and countries in South Asia.
Exports of manufactured goods grew by 3.2% or RM20.24 billion to RM645.67 billion. Manufactured exports accounted for a larger share of total exports at 82.2% compared to 80.5% in 2015.

Exports of E&E products rose by 3.5% or RM9.8 billion to RM287.72 billion, accounting for 36.6% of total exports. Increase in exports of E&E products over RM1 billion were registered for, among others:

- Electronic integrated circuits, increased by RM3.67 billion to RM100.05 billion;
- Parts and accessories for office machines, ↑RM3.36 billion to RM7.79 billion;
- Photosensitive semiconductor devices, ↑RM2.88 billion to RM18.2 billion; and
- Apparatus for transmission or reception of voice, images and other data, ↑RM1.74 billion to RM10.33 billion.

Markets which registered significant increase in exports of E&E products were Singapore, the USA, Germany, Mexico, India, the UAE, Viet Nam and Turkey. Greater manufacturing activities in ASEAN saw increased exports of E&E products by 6.9% to this market.

Other manufactured products that contributed to the growth in exports for 2016 were:

- Chemicals and chemical products, ↑RM3.86 billion to RM58.99 billion;
- Optical and scientific equipment, ↑RM2.66 billion to RM28.75 billion;
- Processed food, ↑RM1.98 billion to RM19.99 billion;
- Machinery, equipment and parts, ↑RM1.53 billion to RM37.69 billion;
- Transport equipment, ↑RM1.46 billion to RM13.48 billion; and
- Textiles, apparels and footwear, ↑RM671.4 million to RM13.88 billion.

Trade with the FTA partner countries stood at RM935.33 billion with exports of RM490.05 billion while imports totalled RM445.28 billion. FTA partner countries contributed 62.4% of Malaysia’s total exports in 2016. The main exports to the FTA partner countries in 2016 were E&E products, petroleum products, chemicals and chemical products, LNG and manufactures of metal. FTA partner countries that registered increases in exports were Viet Nam, Singapore, Turkey, Myanmar, Pakistan, the Philippines, India, Cambodia and Laos.
1.3 INVESTMENTS

The manufacturing sector underwent a major transformation during the year under review with consumption of manufactured goods continuing to surge in emerging markets that also became increasingly sophisticated. Technological changes, which incorporated initiatives like advanced robotics, large-scale factory digitisation, and 3-D printing along with a host of energy innovations, have been on the rise.

A total of 733 manufacturing projects with investments valued at RM58.5 billion were approved in 2016 compared with 680 manufacturing projects with investments of RM74.7 billion in 2015. Amid the risks and uncertainties globally, investors remained confident on Malaysia being a viable foreign investment destination. Foreign investments in 2016 amounted to RM27.4 billion and accounted for 46.8 per cent of the total investments approved for the year. The balance of RM31.1 billion came from domestic investments.

Despite the prevalent global slowdown, Malaysia continued to attract significant amounts of new investments. Investments in new project in 2016 amounted to RM27.7 billion (340 projects), constituting 47.4 per cent of the total investments approved. Of this, RM10.3 billion or 37.2 per cent was from the foreign sources while RM17.4 billion or 62.8 per cent was in the form of domestic investments.

Existing companies in Malaysia continued to expand and diversify their operations, reflecting their unbroken confidence in the country’s investment environment. A total of 393 projects with investments amounting to RM30.8 billion for expansion and diversification were approved in 2016, accounting for 52.6 per cent of the total investments approved. Of this, RM17.1 billion or 55.5 per cent was from foreign sources while RM13.7 billion or 44.5 per cent was domestic investments.

The petroleum products including petrochemicals recorded the highest investments approved in 2016, amounting to RM15.3 billion. This was followed by E&E products (RM9.2 billion), basic metal products (RM5.0 billion), transport equipment (RM4.8 billion), natural gas (RM3.6 billion), food manufacturing (RM3.3 billion), chemical and chemical products (RM3.1 billion) and non-metallic mineral products (RM3.0 billion). These eight industries accounted for RM47.9 billion or 81.9 per cent of total investments approved.
1.4 ECONOMIC OUTLOOK FOR 2017

Global economic activity is projected to improve in 2017, underpinned by an expansion in domestic demand in the advanced and emerging market economies, boosted in part by expansionary fiscal policies in selected major economies. These pro-growth policies would spur global demand and provide impetus to global trade. The outlook would also be supported by a recovery in commodity prices amid the move to reduce oversupply conditions. Nonetheless, the global economy will continue to be subjected to several downside risks. These include a potential retreat from globalisation and free trade in the advanced economies, and uncertainty over the UK and EU negotiations and geopolitical developments. Anticipation of monetary policy divergence between the US and the other major economies could also result in overadjustment in the foreign exchange markets amidst destabilising capital flows.

With the gradual improvement in global growth, recovery in global commodity prices and the continued growth of domestic demand are expected to collectively support Malaysia’s growth performance. The Malaysian economy is projected to register a sustained growth of 4.3% - 4.8% in 2017.

Domestic demand will continue to be the principal driver of growth, underpinned by private sector activity. Notwithstanding the higher inflation, private consumption growth is expected to be sustained by continued wage growth and the increase in disposable income due to selected Government measures and higher global commodity prices. In an environment of cautious business sentiment and continued uncertainty in the economy, investment growth is projected to remain modest. Nonetheless, private investment activity will be supported by higher capital expenditure in export-oriented industries and implementation of ongoing and new projects, particularly in the manufacturing and services sectors. While public expenditure would be lower as a result of the Government’s continued commitment to fiscal consolidation, the public sector is projected to support growth, driven mainly by higher public investment arising from the ongoing implementation of key infrastructure projects in selected sectors.

Malaysia’s external sector is expected to remain resilient despite continued uncertainties in the global environment. Both exports and imports are expected to strengthen in 2017, underpinned by the projected improvements in global growth, higher commodity prices and sustained domestic demand. Nonetheless, import growth is expected to continue to outpace export growth, resulting in a lower trade surplus. The services account is projected to register a larger deficit, in line with higher
trade and improvement in investment activity. Overall, the current account is expected to register a surplus of 1.0% - 2.0% of GNI in 2017.

On the supply side, all economic sectors are projected to register positive growth in 2017. The services and manufacturing sectors would be the key contributors to overall growth. The agriculture sector is expected to rebound as yields recover from the El Niño weather phenomenon. Growth in the mining sector is expected to remain steady, as a stronger expansion in natural gas output offsets a moderation in the crude oil sub-sector.

Headline inflation is projected to average higher in the range of 3.0% - 4.0% in 2017, given the prospect of higher global commodity and energy prices, and the impact of the depreciation of the ringgit exchange rate. These cost-push factors, however, are not expected to cause significant spillovers to broader price trends, given the stable domestic demand conditions. Core inflation is, therefore, expected to increase modestly.
1.5 MALAYSIA – KEY ECONOMIC INDICATORS

<table>
<thead>
<tr>
<th>Malaysia - Key Economic Indicators</th>
<th>2014</th>
<th>2015</th>
<th>2016p</th>
<th>2017f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (million persons)</td>
<td>30.7</td>
<td>31.2</td>
<td>31.7</td>
<td>32.1</td>
</tr>
<tr>
<td>Labour force (million persons)</td>
<td>14.3</td>
<td>14.5</td>
<td>14.7</td>
<td>14.9</td>
</tr>
<tr>
<td>Employment (million persons)</td>
<td>13.9</td>
<td>14.1</td>
<td>14.2</td>
<td>14.3</td>
</tr>
<tr>
<td>Unemployment (as % of labour force)</td>
<td>2.9</td>
<td>3.1</td>
<td>3.5</td>
<td>3.6 - 3.8</td>
</tr>
<tr>
<td>Per Capita Income (RM)</td>
<td>34,839</td>
<td>36,078</td>
<td>37,736</td>
<td>39,656</td>
</tr>
<tr>
<td>(USD)</td>
<td>10,645</td>
<td>10,238</td>
<td>9,096</td>
<td>8,906f</td>
</tr>
</tbody>
</table>

**NATIONAL PRODUCT (% change)**

| Real GDP at 2010 prices | 6.0 | 5.0 | 4.2 | 4.3 - 4.8 |
| (RM billion)            | 1,012.5 | 1,062.8 | 1,107.9 | 1,158.5 |
| Agriculture, forestry and fishery | 2.1 | 1.2 | -0.1 | 4.0 |
| Mining and quarrying    | 3.5 | 3.7 | 2.7 | 2.7 |
| Manufacturing           | 6.2 | 4.9 | 4.4 | 4.3 |
| Construction            | 11.7 | 8.2 | 7.4 | 8.0 |
| Services               | 6.6 | 5.1 | 5.6 | 4.9 |
| Nominal GNI (RM billion) | 8.7  | 8.2  | 6.0  | 6.7  |
| Real GNI (RM billion)   | 6.1  | 6.8  | 4.4  | 4.7  |
| Real aggregate domestic demand¹ | 5.9 | 5.1 | 4.4 | 4.4 |
| Private expenditure     | 7.9  | 6.1  | 5.7  | 5.6  |
| Consumption             | 7.0  | 6.0  | 6.1  | 6.0  |
| Investment              | 11.1 | 6.4  | 4.4  | 4.1  |
| Public expenditure      | 0.4  | 2.1  | 0.4  | 0.5  |
| Consumption             | 4.3  | 4.4  | 1.0  | -0.2 |
| Investment              | -4.7 | -1.0 | -0.5 | 1.5  |
| Gross national savings (as % of GNI) | 30.4 | 28.9 | 28.9 | 27.9 |

**BALANCE OF PAYMENTS (RM billion)**

| Goods balance      | 113.3 | 109.6 | 101.2 | 98.4 |
| Exports            | 678.9  | 685.4 | 686.0 | 723.4 |
| Imports            | 565.5  | 575.8 | 584.8 | 625.1 |
| Services balance   | -10.7  | -21.0 | -22.6 | -24.0 |
| Primary income, net| -36.6  | -32.0 | -34.7 | -36.3 |
| Secondary income, net | -17.4 | -21.9 | -18.7 | -20.7 |
| Current account balance (as % of GNI) | 48.6 | 34.7 | 25.2 | 17.4 |
| (in months of retained imports) | 4.5 | 3.1 | 2.1 | 1.0 - 2.0 |
| Bank Negara Malaysia international reserves, net² | 405.3 | 409.1 | 423.9 | - |
| (in months of retained imports) | 8.3 | 8.4 | 8.7 | - |

**PRICES (% change)**

| CPI (2010=100)     | 3.2 | 2.1 | 2.1 | 3.0 - 4.0 |
| PPI (2010=100)     | 1.5 | -7.4 | -1.1 | - |
| Real wage per employee in the manufacturing sector | 1.5 | 3.2 | 4.1 | - |

¹ Exclude stocks
² All assets and liabilities in foreign currencies have been revalued into ringgit at rates of exchange ruling on the balance sheet date and the gain/loss has been reflected accordingly in the Bank’s account
³ Based on average USD exchange rate for the period of January-February 2017
** Preliminary
f Forecast
Note: Numbers may not necessarily add up due to rounding
Source: Department of Statistics, Malaysia and Bank Negara Malaysia
CHAPTER TWO
PETROCHEMICAL INDUSTRY IN MALAYSIA

2.1 PETROCHEMICAL INDUSTRY

Malaysia, having the world’s 16th largest natural gas reserves and 26th largest crude oil reserves, has seen petrochemical industry growing rapidly. This industry covers natural gas, petroleum products and petrochemical products, which acts as an integral part of the wider chemicals industry, providing a steady supply of feedstock material to various manufacturing sectors.

A total of 20 projects with investments of RM24.7 billion were approved to produce petroleum products including petrochemicals in 2016, a 33 per cent decline in approved investments compared to 2015. This moderate growth could be due to the slump in the global oil and gas industry. Despite the downtrend in investments, 10 out of 20 projects approved were new projects totalling RM16.6 billion while another 10 were expansion/diversification projects amounting to RM8.1 billion. These investments were contributed by DDI amounting to RM19.1 billion and Foreign Direct Investments (FDI) totalling RM5.6 billion with the potential to create 963 new jobs.

Malaysia’s steady growth in the petrochemical industry has been attributed partly to the development of Pengerang Integrated Petrochemical Complex (PIPC) that is progressing as scheduled.

In 2016, four Refinery and Petrochemical Integrated Development (RAPID) projects and its associated facilities comprising a cogeneration plant, a regasification terminal and a storage terminal, were approved to complement the ecosystem in RAPID with DDI investments totalling RM18.8 billion and FDI amounting to RM2.6 billion. The RM60 billion PETRONAS RAPID project in Pengerang is poised to change the face of Malaysia and South East Asia’s chemical industry with a refining capacity of 300,000 barrels per day and producing both commodities and premium differentiated ethylene and propylene-based polymers and glycol products.

Another major project approved in 2016 was an expansion/diversification of a petrochemical plant worth RM1.5 billion contributed by a foreign-owned company. The main challenges for the Malaysian petrochemical industry remain on the fluctuation volatility of crude oil prices that create uncertainty in upstream and downstream investments; as well as the impending needs for integrated products’ facilities to improve margins and economies of scale.
2.2 PLASTICS INDUSTRY

The plastics industry registered a total sales turnover of RM27.32 billion for 2016, representing an increase of 10.3% from RM24.77 billion for 2015. Exports increased by 1.2% from RM12.96 billion for 2015 to RM13.12 billion for 2016. Domestic sales increased substantially by 20.2% from RM11.81 billion to RM14.20 billion.

The weakening of the Malaysian economy due to lower crude oil price affected the consumer sentiment and the spending capacity. Domestic growth was also affected by the weaker demand from the automotive sector. However, export sector benefited from the weakening of the ringgit against the USD and Euro. On the other hand, the plastic bag sector was affected by the EU’s policy to curb plastic usage.

In terms of the outlook for the year 2017, the world crude oil market is stabilising hence, prices appear to be recovering. This would augur well for Malaysian Ringgit and Malaysia’s economy. Both the business sectors and consumers are also adjusting and adapting to the Goods and Services Tax (GST) system which had initially affected their sentiments. Against this background, the plastic industry is cautiously optimistic of a recovery in the domestic market. More aggressive export strategies are required to capitalise the benefits of weakening ringgit. Exports of plastic bags may be further impacted by the EU’s “less single use bag” policy.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Malaysia’s gross domestic product (GDP) growth</td>
<td>5.6%</td>
<td>4.7%</td>
<td>6.0%</td>
<td>5.0%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Number of plastics manufacturers</td>
<td>1,350</td>
<td>1,350</td>
<td>1,300</td>
<td>1,300</td>
<td>1,300</td>
</tr>
<tr>
<td>Employment</td>
<td>74,000</td>
<td>76,000</td>
<td>82,000</td>
<td>80,000</td>
<td>79,000</td>
</tr>
<tr>
<td>Turnover</td>
<td>RM17.16b (+6.5%)</td>
<td>RM17.94b (+4.5%)</td>
<td>RM19.46b (+7.3%)</td>
<td>RM24.77b (+27.3%)</td>
<td>RM27.32b (+10.3%)</td>
</tr>
<tr>
<td>Export</td>
<td>RM10.05b (-1%)</td>
<td>RM10.69b (+6.4%)</td>
<td>RM11.94b (+11.5%)</td>
<td>RM12.96b (+8.5%)</td>
<td>RM13.12b (+1.2%)</td>
</tr>
<tr>
<td>% of export against turnover</td>
<td>59%</td>
<td>60%</td>
<td>62%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Resin consumption</td>
<td>2.04m MT (+3%)</td>
<td>2.10m MT (+3%)</td>
<td>2.15m MT (2.5%)</td>
<td>2.22m MT (3%)</td>
<td>2.26m MT (2%)</td>
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<tr>
<td>Per capita consumption of resin</td>
<td>69kg</td>
<td>70kg</td>
<td>70kg</td>
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<td></td>
</tr>
</tbody>
</table>

Source: MPMA & DOS
3.1 GENERAL MATTERS & RAW MATERIALS COMMITTEE

Currently under development, both Malaysian petrochemicals majors are adding significant new petrochemicals capacities and expanding and debottlenecking existing plants, with projects underway and on schedule. Additional capacity is targeting the growing domestic and Asian market.

Petronas’ Refinery and Petrochemical Integrated Development (RAPID) project, with 3mn tonnes per annum (tpa) of new petrochemicals capacity, including 1.1mn tpa of ethylene, and a 300,000 barrels per day (b/d) refinery is expected to come online in H2 2019 as projected.

Lotte Chemical Titan’s expansion of its Malaysian steam cracking operations, which is scheduled for completion in 2017, should increase the complex’s production capacities for ethylene by 92,000 tpa, for propylene by 170,000 tpa, and for BTX by 134,000 tpa.

On demand side, notwithstanding economic headwinds, Malaysian plastics industry has steadily increased consumption of polymers in line with a GDP growth and is expected to continue to grow to cater to both domestic and overseas consumption.

All figures in the table are in ktpa.

<table>
<thead>
<tr>
<th>Nameplate capacity</th>
<th>Year 2010</th>
<th>Year 2015</th>
<th>Year 2016</th>
<th>Year 2017</th>
<th>Year 2018</th>
<th>Year 2019</th>
<th>Year 2020</th>
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<tr>
<td>ABS</td>
<td>350</td>
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<td>EPS</td>
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<tr>
<td>Ethylene</td>
<td>1723</td>
<td>1723</td>
<td>1723</td>
<td>1723</td>
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<tr>
<td>HDPE</td>
<td>485</td>
<td>525</td>
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<tr>
<td>LDPE</td>
<td>485</td>
<td>485</td>
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<tr>
<td>LLDPE</td>
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<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
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<td>Monoethylene Glycol (MEG)</td>
<td>380</td>
<td>380</td>
<td>380</td>
<td>380</td>
<td>380</td>
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<td>1080</td>
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<tr>
<td>PET</td>
<td>666</td>
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<td>Polyethylene (PE)</td>
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<td>573</td>
<td>573</td>
<td>1473</td>
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<td>Propylene, Total</td>
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<td>1077</td>
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<tr>
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### Imports

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### Exports

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<th>Year 2016</th>
<th>Year 2017</th>
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<td>2781</td>
<td>2519</td>
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<td>2476</td>
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</table>

### 3.2 POLYOLEFINS COMMITTEE

Malaysia was a net exporter of polyolefin products ending in 2013. The major export destinations were China (including Hong Kong), and countries in the South-East Asia region and India Sub-Continent. However, due to Petronas subsidiary Polypropylene Malaysia mothballing its 80,000 tons/year PP plant in Kuantan, Malaysia at the end of December 2012 and capacity reduction at the second producer Lotte Chemical Titan from 480 to 400 ktpa in 2013 Malaysia became net polypropylene importer.
This is set to change starting from 2018, when Lotte Chemical Titan starts its third PP line with nameplate capacity of 200,000 tpa, followed in 2019 by Petronas starting up its new RAPID petrochemical project on-line.

<table>
<thead>
<tr>
<th>Consumption</th>
<th>Year 2010</th>
<th>Year 2015</th>
<th>Year 2016</th>
<th>Year 2017</th>
<th>Year 2018</th>
<th>Year 2019</th>
<th>Year 2020</th>
</tr>
</thead>
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<tr>
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<tr>
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<tr>
<td>PP</td>
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<td>478</td>
<td>497</td>
<td>521</td>
<td>543</td>
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<td>2898</td>
<td>3016</td>
<td>3154</td>
<td>3287</td>
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</table>

The domestic polyolefin demand in 2016 was growing at around 4% in line with the growth rate of GDP, from 1626 ktpa to 1688 ktpa. In 2017, the Malaysia economy is projected to continue to grow by 4% and the domestic polyolefin demand is expected to grow at the same pace in 2017 to 1757 ktpa.
3.2.1A LDPE

MALAYSIA LDPE

Malaysia LDPE Capacity

- Lotte Chemical Pasir Gudang, Johor
- Petronas Kerteh, Terengganu
- Petronas Pengerang, Johore
3.2.1B LLDPE

![Graph of Malaysia LLDPE](image)

**Malaysia LLDPE Capacity**

![Graph of Malaysia LLDPE Capacity](image)

- **Petronas Kerteh, Terengganu**
- **Petronas Pengerang, Johore**
3.2.1C HDPE

MALAYSIA HDPE

Malaysia HDPE Capacity

- Lotte Chemical Pasir Gudang, Johor
- Petronas Kerteh, Terengganu
- Petronas Pengerang, Johore
3.2.2 PP

MALAYSIA PP

Malaysia Polypropylene Capacity

- Lotte Chemical Pasir Gudang, Johor
- Lotte Chemical Pasir Gudang, Johor
- Petronas Kuantan, Pahang
- Petronas Pengerang, Johore
3.3 STYRENICS COMMITTEE

**Malaysia Styrene**

- **Demand**
- **Exports**
- **Imports**
- **Capacity**

**Malaysia Styrene Capacity**

- **Idemitsu Styrene Johor Bahru**
3.4 PVC COMMITTEE
3.5 SYNTHETIC RUBBER COMMITTEE

World Production, Consumption and Trade of Rubber
In 2016, total world production of rubber reached 26.9 million tonnes, growing at an annual average rate of 2.2% from 23.7 million tonnes in 2010. Natural rubber, with production estimated at 12.3 million tonnes, accounted for 46% of world rubber production, while synthetic rubber production accounted for 54%, with production in 2016 estimated at 14.6 million tonnes.

**World Production, Consumption and Trade of Rubber, 2010-2016 (thousand tonnes)**

![Bar chart showing world production, consumption, imports, and exports of rubber from 2010 to 2016.](chart)

*Source: International Rubber Study Group (IRSG)*

Malaysia’s Production, Consumption and Trade of Rubber
Malaysia is the world’s eighth largest consumer of rubber in 2016. The other countries in the top ten ranking include China, the USA, India, Japan, Thailand, Brazil, Indonesia, Germany and Russia. In terms of consumption of natural rubber (NR), Malaysia is behind China, India, the USA, Japan, Thailand and Indonesia. Other major consumers of NR include Brazil, South Korea and Germany.

With the availability of quality raw materials, political stability, and modern infrastructure as well as research and development (R&D) support from the Malaysian Rubber Board (MRB) and the Tun Abdul Razak Research Centre (TARRC), Malaysia remains a global player in rubber, supplying the world market with a wide range of rubber products.

Malaysia is the world’s fifth largest producer of NR after Thailand, Indonesia, Vietnam and China. NR production in Malaysia decreased by 6.6% from 0.72 million tonnes in 2015 to 0.67 million tonnes in 2016. Exports of NR recorded a decline of 10.7% from 1.1 million tonnes in 2015 to 1.0 million tonnes in 2016. Nonetheless, Malaysia is still a net exporter of NR. Consumption of NR increased by
4% from 474.7 million tonnes in 2015 to 493.5 million tonnes in 2016. Consumers can look towards Malaysia as a source of supply for quality raw rubber of SMR (Standard Malaysian Rubber) grades, specialty rubber such as epoxidized natural rubber (ENR), deproteinised natural rubber (DPNR) and thermoplastic elastomers based on natural rubber (TPENR) and latex concentrates including Low Protein Latex. Meanwhile, synthetic rubber (SR) production in Malaysia increased by 23% from 0.10 million tonnes in 2015 to 0.12 million tonnes in 2016. Similarly, exports of SR also recorded an increase of 49.7% from 0.08 million tonnes in 2015 to 0.11 million tonnes in 2016. However, Malaysia is still a net importer of SR.

Malaysia’s Production, Consumption and Trade of Rubber, 2010-2016 (thousand tonnes)

Exports of rubber products from Malaysia surpassed RM18 billion in 2016, recording a growth of 0.9% year-on-year. The growth in exports was fuelled by the non-latex goods category, where footwear reported strong export performance with a growth of 28% from previous year, along with 5% expansion in the general rubber goods segment. Seals and gaskets, automotive parts and accessories, floor coverings and mats, as well as fenders were among the high growth products in the general rubber goods category. Nonetheless, the latex goods remained the largest contributor to Malaysian exports of rubber products, reaching RM14.6 billion in 2016 and accounted for 80.7% of the total exports of rubber products in the year. Rubber gloves under the latex goods category continued to contribute significantly to total exports of rubber products, reaching RM13.3 billion in export value or 73.2% of the total value of all rubber products exported.

Malaysia is globally renowned for its high quality and competitively priced rubber products. Malaysian rubber products manufacturers comprise multinationals and joint ventures from various
countries including the USA, Europe and Japan, as well as locally-owned enterprises. These companies supply a whole range of rubber products including medical gloves, automotive components, hoses and structural bearings.

Malaysia remains the world's leading supplier for medical gloves (examination and surgical gloves), satisfying more than 50% of global demand. Malaysia is also one of the world's leading suppliers of foley catheters, condoms and latex threads (in value terms). Latex thread is mainly used in the apparel industry as elastic bands and supports. Other latex products produced in Malaysia include teats and soothers as well as finger stalls. Malaysia also produces an extensive range of industrial rubber products such as hoses, beltings, seals, wires and cables for the global market.

Production, Consumption and Trade Performance

![Graph showing Malaysian Export Earning of Natural Rubber, Rubber Products, Rubber Woods and Other Rubber (RM Billion)](image)

**Note:**

* Other Rubber: Synthetic Rubber, Reclaimed Rubber, Waste Rubber, Compound Rubber and Unvulcanised Rubber (HS Code 4002-4006)

Natural Rubber figures including compounded rubber to China

*Source: Malaysian Rubber Board*
Malaysia's Exports of Rubber Products, 2010-2016 (RM million)

Source: Department of Statistics (DOS), Malaysia
Malaysia’s Exports of Non-Latex Goods, 2010-2016 (RM million)

Source: Department of Statistics (DOS), Malaysia

Malaysia’s Exports of Rubber Products by Destination, 2016

Source: Department of Statistics (DOS), Malaysia
3.6 SYNTHETIC FIBER RAW MATERIALS COMMITTEE

Ethylene Glycols [Mono-Ethylene Glycol (MEG), Di-Ethylene Glycol (DEG)] as Synthetic Fiber Raw Material

The Ethylene Glycols (MEG & DEG) market in Malaysia is expected to be stable until 2016 as domestic demand growth is expected to be rather limited.

Currently, Malaysia’s leading EG producer is OPTIMAL GLYCOLS (M) SDN BHD which produces three main products which are Mono-Ethylene Glycol (MEG), Di-Ethylene Glycol (DEG) and Re-Distilled Ethylene Oxide (RDO), using world-renowned EOG METEOR Technology from Dow, the most advanced, efficient and cost competitive technology to produce MEG, DEG and high purity EO for derivatives.

Both, MEG (the largest volume product manufactured by OPTIMAL GLYCOLS) and DEG are sold within Malaysia and to various countries throughout the Asia Pacific region. OPTIMAL’s production capacity of MEG is 365kTa and is applied in resins for fibers and PET containers or bottles, antifreeze as well as electronic applications. OPTIMAL’s production capacity for DEG is 20kTa and used in the production of unsaturated polyester resins (used for fiberglass) and brake fluid formulation.

The OPTIMAL Group of Companies tap on Dow’s established channels and distribution network within the Asia Pacific region. The company’s key markets include South East Asia, Japan, South Korea, China and Taiwan. About 60 percent of OPTIMAL’s products are utilized to meet local demands with the remaining 40 percent for the export market.

The EG market growth relies heavily on the polyester demand or supply since it is a key feedstock together with Purified Terephthalic Acid (PTA) in this industry. The Asia market however, is projected to have immense potential on the EG growth and consumption.

During the recession in 2008-2009 monoethylene glycol (MEG) market slowed down globally but, production has already markedly increased in 2010. Today major MEG producers include Saudi Arabia, China, Taiwan, USA and Canada. In near future, global demand growth rate is expected to be about 6% per year, while China is forecasted to grow at 6.5%. Today China is the largest MEG consumer, but the country still depends on import. New capacity introductions are expected to partially solve this problem.
In terms of new MEG capacities in Malaysia, Petronas Chemicals Group (PCG) has recently announced their new refinery and petrochemical project, RAPID (Refinery and Petrochemicals Integrated Development) located in Pengerang, Johor, Malaysia and the project is due for completion by 2019. MEG is most likely one of the potential products which may be produced by RAPID.
3.7 CHEMICALS COMMITTEE

The chemicals and chemical products industry is one of the leading and important industries in Malaysia. The industry covers a wide range of products and comprises agricultural chemicals, industrial gases, inorganic chemicals, paints, soaps and detergents, cosmetics and toiletries as well as other chemical products sub-sectors. The chemicals and chemical products industry provides strong linkages and practically supports almost every other sector of the Malaysian economy.

Products from this industry are key components in industries such as the electrical and electronics, automotive, oil and gas, pharmaceuticals, construction and others. Establishing a more efficient ecosystem in the chemical industry will reduce dependency on imported raw chemicals while local industries benefit from the improved quality and shortened production time for their products. However, the local chemical industry needs to keep abreast with the latest technology, automation, R&D and efficiency in order to stay competitive in the global market.

In 2016, a total of 38 projects with investments of RM1.36 billion were approved, of which 18 were new projects (RM635 million) while the rest were expansion/diversification projects (RM729 million). DDI amounted to RM1.14 billion (83.9%) while FDI totalled RM 219.92 million (16.1%). The approved projects are expected to create 1,338 new job opportunities.

While opportunities abound in Malaysia, developmental challenges still need to be addressed. In the current scenario, the key challenges in moving forward will be to ensure that sustainable energy, environmental & climate protection, innovation, next-generation productivity and digital transformation of the current manufacturing process will be pivotal to the industry to attain Malaysia’s transformation goal of becoming a high income developed country.
Source: Department of Statistics, Malaysia
Compiled By: MATRADE
Oleochemicals Industry

The total export of oleochemical products for year 2016 declined by 3.3% to 2.76 million tonnes due to lower demand from other export markets i.e. EU, UAE, India, China and Vietnam. Meanwhile, there was a double digit increase of 12.6% in export value of oleochemicals at RM 12 722 million. Oleochemical exports accounts for 19.7% of the total export revenue of palm oil products for the year.

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<td>2 727</td>
<td>2 828</td>
<td>2 850</td>
<td>2 758</td>
<td>-3.3</td>
</tr>
<tr>
<td>Export Value (RM million)</td>
<td>11 455.6</td>
<td>9 297.6</td>
<td>11 291</td>
<td>11 295</td>
<td>12 722</td>
<td>12.6</td>
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</table>

*Source: Malaysian Palm Oil Board*
The EU remained as Malaysia’s main export market for year 2016. The other major export markets for the Malaysian oleochemical industry for the same year were:

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tonnes</td>
<td>%</td>
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<td>%</td>
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<td>0.21</td>
<td>7.7</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Source: Malaysian Palm Oil Board

According to the Malaysia Investment Performance Report 2016, total investments by the oleochemical industry approved for the year 2016 amounted to RM 580.1 million, out of which RM 463.4 million were foreign direct investments and RM 116.7 million were domestic investments. This amounts to 26.2% of the total investments received for the palm oil industry. The approved investments were for 9 projects, out of which 4 were new investments and 5 were for expansions / diversifications. This is expected to generate 372 new job opportunities.
CHAPTER FOUR
MALAYSIAN PETROCHEMICALS ASSOCIATION (MPA)

4.1 BACKGROUND
Malaysian Petrochemicals Association (MPA) is a formal association registered with the Registrar of Societies in Malaysia. At present, members of MPA comprise of companies engaging in the manufacture and trading of petrochemicals and plastic resins, as well as companies that provide services required by the petrochemical industry.

MPA was officially formed on March 19, 1997 with the following objectives:

- To provide a forum to discuss and resolve common problems of the petrochemical industry
- To provide a focal point for the petrochemical industry to liaise with the public and government and to make recommendations on relevant issues
- To advance the philosophy of Responsible Care, its implementation and compliance throughout the industry
- To represent the petrochemical industry within Malaysia to interface with similar groups on international basis
- To compile and disseminate information of common concerns and provide facilities for consultation and exchange of views between members.

4.2 MPA MEMBERS
MPA has a total of 23 members engaging in the manufacture and trading of petrochemicals and plastic resins:

1. Air Liquide Global E&C Solutions Malaysia Sdn Bhd
2. Ancom Kimia Sdn Bhd
3. BASF (M) Sdn Bhd
4. BASF-PETRONAS Chemicals Sdn Bhd
5. Dairen Chemical (M) Sdn Bhd
6. Dow Chemical (Malaysia) Sdn Bhd
7. Idemitsu Chemicals (M) Sdn Bhd
8. Kemaman Bituman Company Sdn Bhd
9. Lotte Chemical Titan (M) Sdn Bhd
10. MHE-Demag Malaysia Sdn Bhd
11. Petrochemicals (M) Sdn Bhd
12. PETRONAS Chemicals Derivatives Sdn Bhd
13. PETRONAS Chemicals Ethylene Sdn Bhd
14. PETRONAS Chemicals Group Berhad
15. PETRONAS Chemicals LDPE Sdn Bhd
16. PETRONAS Chemicals MTBE Sdn Bhd
17. Petrotechnical Inspection (M) Sdn Bhd
18. Recron Malaysia Sdn Bhd
19. Sinar Berlian Sdn Bhd
20. Steel Hawk Engineering Sdn Bhd
21. Technip Geoproduction (M) Sdn Bhd
22. Toray Plastics (M) Sdn Bhd
23. Lotte Ube Synthetic Rubber Sdn Bhd

Plastic Resins Producers' Group (MPA PRPG) is a product group, established under MPA. Membership in PRPG is open to manufacturers of plastic resins in Malaysia. MPA PRPG currently has a total of 6 members:

1. Lotte Chemical Titan (M) Sdn Bhd
2. Petrochemicals (M) Sdn Bhd
3. PETRONAS Chemicals Ethylene Sdn Bhd
4. PETRONAS Chemicals LDPE Sdn Bhd
5. Recron Malaysia Sdn Bhd
6. Toray Plastics (M) Sdn Bhd
4.3 MPA COUNCIL 2016/2017

**PRESIDENT**
Mr Akbar Md Thayoob  
PETRONAS Chemicals Group Berhad

**VICE PRESIDENT**
Mr Cheong Peng Khuan  
Lotte Chemical Titan (M) Sdn Bhd

**HONORARY SECRETARY**
Mr Abdul Mazlan Abdul Razak  
PETRONAS Chemicals LDPE Sdn Bhd

**HONORARY TREASURER**
Dr Stefan Beckmann  
BASF PETRONAS Chemicals Sdn Bhd

**COUNCIL MEMBERS**
Mr Abdul Rashid Hashim  
Ancom Kimia Sdn Bhd

Mr Edmund Tan Teck Boon  
BASF (M) Sdn Bhd

Mr James Thong  
Dow Chemical (Malaysia) Sdn Bhd

Mr Norihiro Miyoshi  
Idemitsu Chemicals (M) Sdn Bhd

Mr Sanjay Gover  
Kemaman Bitumen Company Sdn Bhd
Mr Lim Boon Hoe  
Petrochemicals (M) Sdn Bhd

Mr Kalpesh Kothari  
Recron Malaysia Sdn Bhd

Mr Yee Kok Leong  
Toray Plastics (M) Sdn Bhd

CHAIRMAN  
MPA Plastic Resins Producers' Group

Mr Abdul Mazlan Abdul Razak  
PETRONAS Chemicals LDPE Sdn Bhd

4.4 MPA SECRETARIAT

Malaysian Petrochemicals Association (MPA)  
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