

# 2016

## MALAYSIA Investment Performance Report

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Strengthening the Growth Momentum





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*Strengthening the Growth Momentum*

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“A WORD  
FROM MIDA”



## OVERVIEW ON GLOBAL ECONOMIC AND INVESTMENTS GROWTH

Several serious economic challenges caused economic growth to remain slow globally at a projected 3.1 per cent in 2016 according to World Economic Outlook Report by the IMF released in October 2016. The prolonged low oil prices, uncertainties caused by Brexit, switch in economic and trade policies to be adopted by the new president of the USA, low commodity prices and recurring natural disasters were among the issues impacting on global economic development.

A modest global recovery of 3.4 per cent is projected for the year 2017. As a cautionary note, the improvement in the global economic scenario is more of an indication of economic stabilisation rather than revival.

According to the UN World Economic Situation and Prospects (WESP) 2017, developing countries will

continue to be the main drivers of global growth, accounting for 60 per cent of the world's gross product growth in 2016-2018. East and South Asia will remain as the world's most dynamic regions, benefitting from the robust domestic demand and supportive macroeconomic policies.

The emerging markets and developing economies are anticipated to partially offset the slower growth of the developed economies. China's rebalancing efforts towards a more sustainable growth in the services sector and domestic consumption are expected to be the main economic drivers with an anticipated growth of 6.2 per cent. Meanwhile, India is expected to sustain its growth momentum of 7.6 per cent with the increase of private consumptions as well as stronger growth in the services and agriculture sectors. In addition, most of the Association of Southeast Asian Nations (ASEAN) member states are expected to record higher growths due to investments

in infrastructure and stronger consumption.

However, headwinds arising from the environment and situational challenges as well as policy uncertainties may continue to constrain the global economy. The issues that arose in 2016 such as Brexit, the USA presidential elections, prolonged low oil prices, low commodity prices, currency pressures and geopolitical tensions may continue in 2017. Political uncertainty resulting from the post-Brexit referendum and the Trump administration's policies remain unknown.

### Quality investments in Malaysia

The Malaysian economy is expected to continue to grow in 2017 despite the challenging external environment. As an open economy, Malaysia is not immune to external uncertainties, but its economic and financial reforms and policies have somewhat buffered the challenging external impact.



The country's fundamentals remain strong with a stable labour market, manageable inflation, healthy foreign reserves and sound financial systems to support a sustained momentum in economic growth.

Malaysia continues to adopt a more focused and targeted approach in attracting quality investments in high technology, capital-intensive and knowledge-intensive industries; high value added industries; R&D activities as well as in new growth areas, in line with the Government's efforts to become a high-income nation by 2020.

In this regard, MIDA's focus will be leveraging on megatrends development and smart manufacturing to target products with technological advancements and new product applications as well as focusing on high value R&D activities and the Internet of Things (IoT). This emphasis is to nurture and encourage both foreign and local investors and manufacturers to switch their mindsets on the Malaysian manufacturing landscape and move up the value chain with quality investments that incorporated hi-tech innovations.

With competition from neighbouring countries with larger populations, Malaysia cannot afford to hinge solely on lower costs of manpower but will have to move into higher gear with quality investments in smart manufacturing. In line with the Eleventh Malaysia Plan (11MP), MIDA will focus on promoting niche and more complex products for the manufacturing sector. This strategic initiative has identified

three catalytic subsectors of E&E, Machinery and Equipment and Chemicals as well as the two growth subsectors of Aerospace and Medical Devices. These '3+2' catalytic and growth subsectors have also been identified to increase the export activities of local manufacturing companies.

As for the services sector, focus will be in the areas of principal hubs, logistics, the ecosystem surrounding e-commerce, green technology and renewable energy as well as waste management. Sustainable investments depend extensively on a vibrant talent pool, a knowledge-based economy, robust investor protection, healthy interconnected upstream and downstream industries, and other factors which are the precursors for competitive advantages.

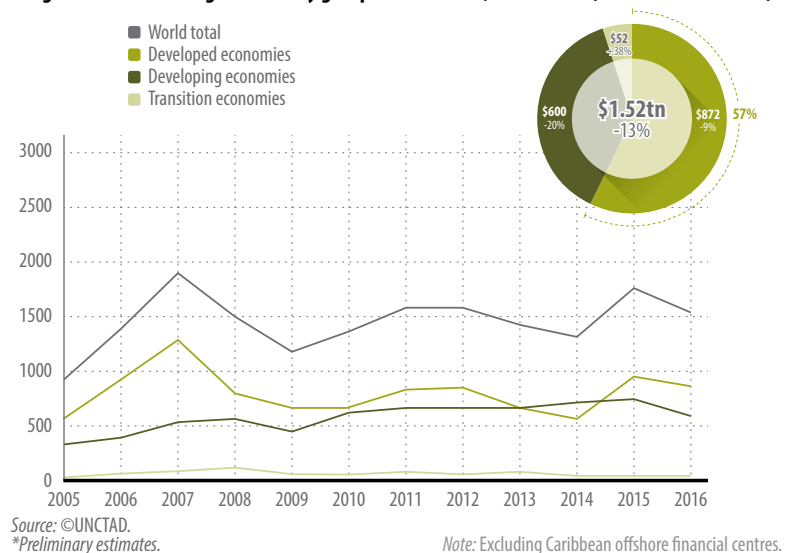
With these unique strengths, Malaysia is well on its way to creating such a conducive business landscape. This conducive investment landscape is the principal impetus for investors to continue to invest in Malaysia.

## GLOBAL INVESTMENT SCENARIO

The United Nations Conference on Trade and Development (UNCTAD) projects global FDI flows to accelerate in 2017, reaching 3.4 per cent compared to the post-crisis low of 3.1 per cent in 2016. The rise is estimated to be driven by rise in growth in developed countries; rebound of developing economies led by a sharp rise in growth in natural resources exporting countries; and greater economic activity which will help to boost world trade volumes, which are forecast to expand by 3.8 per cent in 2017.

Global Investment Trends Monitor Issue No. 25 by the United Nations Conference on Trade and Development (UNCTAD) announced that the global foreign direct investment (FDI) flows slip fell 13 per cent to an estimated US\$1.52 trillion in 2016. Part of the decline in FDI was due to weak global economic growth. This decline was not equally shared across regions, reflecting the diverse impact of the current economic environment on countries worldwide.

Figure 1: FDI inflows: global and by group of economies, 2005–2016 (Billions of US dollars)



Developing economies saw their FDI inflows fell 20 per cent to an estimated US\$600 billion in 2016, due to slowing economic growth and falling commodities prices weighed. Developing Asia, with declined FDI inflows of 22 per cent to an estimated US\$413 billion, was relatively widespread, with every major sub-region registering double digit reductions. Flows to Africa and Latin America and the Caribbean faltered. Nonetheless, developing economies continued to account for half of the top 10 host economies for FDI flows. In contrast, foreign investment in mainland China remained robust rising by 2.3 per cent to a new record of about US\$139 billion. On the other hand, UNCTAD had forecast that FDI inflows have a potential rebound in 2017.

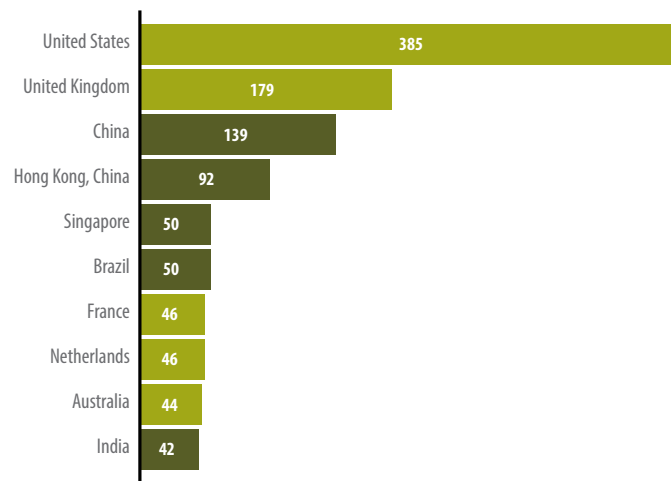
FDI flows to Latin America and the Caribbean decreased in 2016 to US\$135 billion. Slowing domestic demand and worsening terms of trade caused by falling commodity prices hampered FDI mainly in South America. Despite Central America's relatively stronger economic performance, its flows also fell due to a 20 per cent reduction in Mexico (from US\$33 billion to US\$26 billion).

Strong fall of 29 per cent in inflows was reported in Europe to an estimated US\$385 billion in 2016. There was a dip in FDI flows to developed economies with a decline of 9 per cent to an estimated US\$872 billion due to a number of countries experiencing strong volatility in their inflows. This decline was tempered by modest growth in flows to North America (6 per cent) and a large increase in investment in other developed

economies, principally because of strong recover of investment Australia and Japan. FDI inflow to the United States increased by 11 per cent, from US\$348 billion to an estimated US\$385 billion, due to strong equity investment inflows as cross-border M&As in the country rose 17 per cent in value – led by a number of megadeals.

Despite sliding seven notches from the 18th position in 2015, Malaysia continued to be the highest ranked among developing Asian countries, a continued endorsement of the progress the country is making in enhancing efficiency and competitiveness through its Government Transformation Programme (GTP) and the

**Figure 2: Estimated FDI inflows: top 10 host economies, 2016 (Billions of US dollars)**



Source: ©UNCTAD.

Note: FDI estimations in this Trends Monitor are based primarily on quarterly FPI data derived from the (extended) directional principal, though there are some countries for which the asset/liability data are used for estimation.

In terms of country rankings, the USA was the largest recipient of FDI inflows (US\$385 billion) in 2016, followed by the United Kingdom (US\$179 billion), People's Republic of China (US\$139 billion), Hong Kong, Republic of China (US\$92 billion) and Singapore (US\$50 billion).

### OVERVIEW OF MALAYSIA'S PRIVATE INVESTMENTS PERFORMANCE IN 2016

According to the Global Competitiveness Report 2015/2016 released by the World Economic Forum (WEF), Malaysia consolidated its position among the world's most competitive economies at 25th place out of 138 countries.

Economic Transformation Programme (ETP).

Malaysia was ranked 22nd on the World Bank's Ease of Doing Business Report for 2016. Although it dropped four notches from 18th place in the preceding year, Malaysia still managed to be ahead of the Netherlands, Japan and Thailand. The drop in ranking is mainly caused by a new ruling requiring companies with annual revenues of more than RM500,000 to register as a Goods and Services Tax (GST) payer.

Nevertheless, Malaysia obtained a perfect score in terms of the depth of credit information index. Two reforms contributed to this are the strengthening of

credit reporting by providing consumers credit scores and making it easier to pay taxes by introducing online system for filing tax returns and paying GST.

As stated earlier, FDI of Asian countries dropped dramatically, while the figure in People's Republic of China (PRC) witnessed an increase of 2.3 percent. PRC has become more attractive to the service industries, especially high-value-added services and high-tech manufacturing industries, said the report. The UNCTAD predicted that PRC's economic growth will continue to register a high level with structural upgrades and increasing market-oriented foreign investment and that the world's second largest economy will open more fields to attract foreign investment.

Cross-border M&A activity remained substantial in 2016, reaching a new post-2007 high, but showed signs of slowing in 2016. The 13 per cent increase in the value of net sales, which rose to US\$831 billion, pales when compared to the 67 per cent and 68 per cent increases registered in 2014 and 2015.

As for Malaysia, it remained an attractive and competitive destination for foreign entities and multinational corporations to invest in and expand their productive capacity despite the greater headwinds in the global economy. On the liabilities side, inward direct investments amounted to a net inflow of US\$3.1 billion in 4Q 2016. Of these, FDI rose to US\$2.4 billion in 4Q 2016 (3Q 2016: net inflow of US\$1.5 billion), due mainly to a higher injection of equity capital and a net extension of loans

by parent companies to their subsidiaries in Malaysia. FDI inflows were largely channelled into the manufacturing sector, particularly the E&E and petrochemical industries. This is followed by investments in the services sector, mainly in the finance and insurance as well as the wholesale and retail trade subsectors.

On the assets side, outward direct investments amounted to a net outflow of US\$1.8 billion in 4Q 2016 (3Q 2016: net outflow of US\$2.5 billion). Of these, Direct Investment Abroad (DIA) by Malaysian companies increased to US\$1.1 billion (3Q 2016: net outflow of US\$0.8 billion), due mainly to a higher reinvestment of earnings and sustained equity capital injections to subsidiaries abroad. The bulk of DIA was undertaken by companies in the mining sector, followed by the services sector, particularly the telecommunication and wholesale and retail trade subsectors.

### Focus on Quality Investments

In 2016, Malaysia managed to attract investments worth RM207.9 billion in mostly high quality projects despite the challenges from external headwinds.

Of the total investments approved in 2016, RM148.9 billion or 71.6 per cent was contributed by Domestic Direct Investment (DDI) while about RM59 billion or 28.4 per cent came from FDI.

The main sectors of the economy still maintained their strong attraction for investments in 2016.

Malaysia's services sector remained the biggest magnet

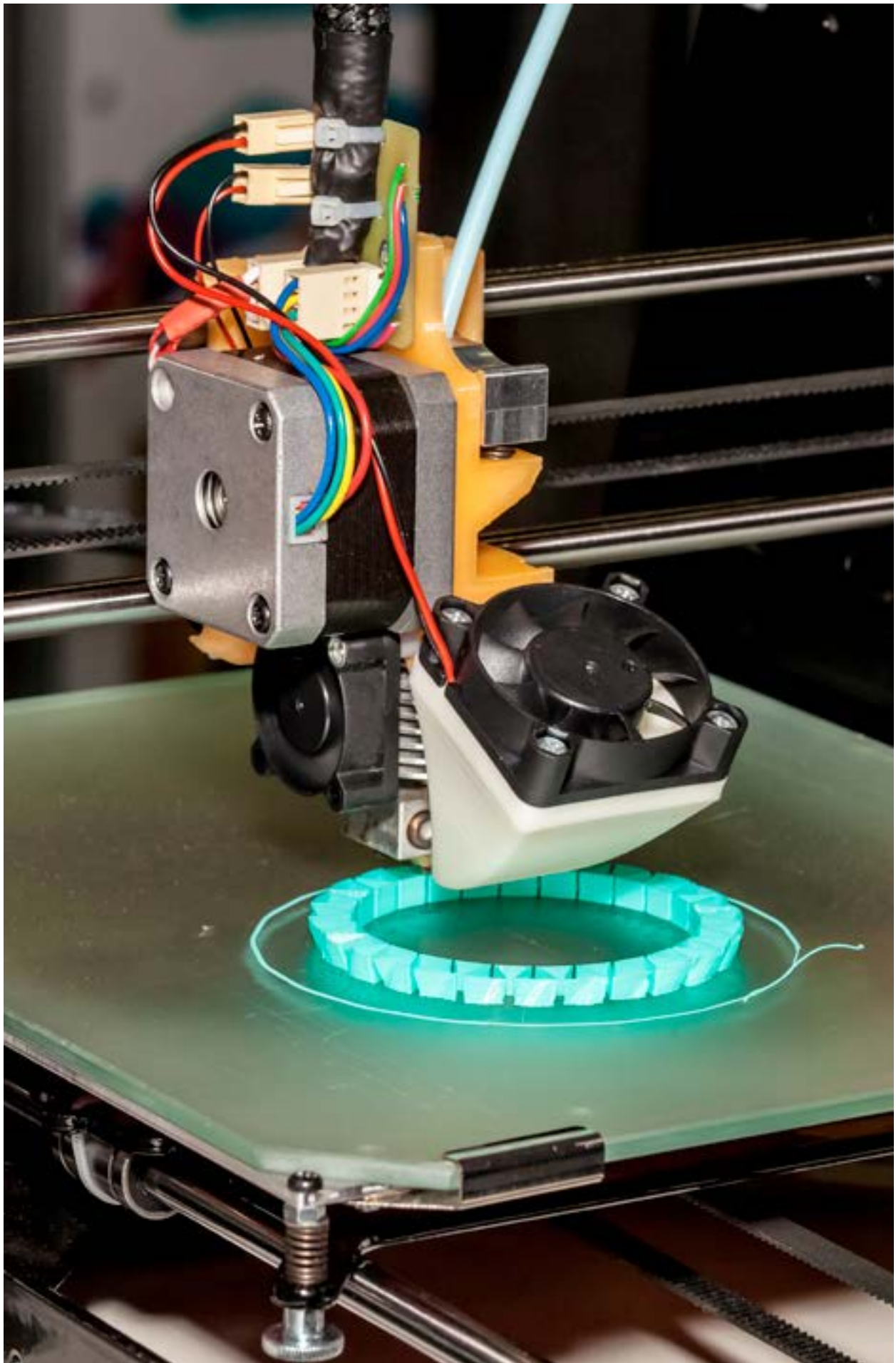
for investments. In 2016, it attracted a total of 4,199 approved projects with investments amounting to RM141.2 billion or 67.9 per cent of the total. Of the total investments in the services sector, DDI accounted for RM112.9 billion while FDI totalled RM28.3 billion. The manufacturing sector attracted investments worth RM58.5 billion or 28.1 per cent. Approximately RM27.4 billion or 46.8 per cent Malaysia's total investments came from foreign sources while the balance of RM31.1 billion or 53.2 per cent were drawn from domestic sources.

Despite the global slowdown, Malaysia continued to attract a significant amount of new investments in manufacturing. In 2016, investments in new projects amounted to RM27.7 billion from 340 projects. This comprised 47.4 per cent of the total investments approved, of which RM10.3 billion or 37.2 per cent came from foreign sources while RM17.4 billion or 62.8 per cent hailed from domestic investments.

The primary sector accounted for RM8.2 billion of approved investments in 2016. Foreign investments in the primary sector amounted to RM3.3 billion or 40.2 per cent, while domestic investments made up another RM4.9 billion or 59.8 per cent.

Realised private investments measured in terms of Gross Fixed Capital Formation (GFCF) totalled RM211.5 billion in 2016, which was 6.4 per cent higher than RM198.8 billion recorded in the same period of 2015.







# 2 “INVESTMENTS IN THE MAIN SECTORS”



# PERFORMANCE OF THE MANUFACTURING SECTOR

## OVERVIEW ON PROJECTS APPROVED

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.

## CAPITAL-INTENSIVE PROJECTS

Capital-intensity, as measured by the capital investment per employee (CIPE) ratio of projects approved in 2016 was at RM912,239. This reflects that manufacturing industry are moving towards more capital-intensive, high value-added and high technology projects.

In 2016, the industry with the highest CIPE ratio was natural gas with CIPE ratio of RM54,585,075 followed by petroleum products including petrochemicals (RM19,702,225), textiles and textile products (RM2,219,123), basic metal products (RM1,489,401) and chemicals and chemical products (RM1,100,416).

In 2016, a total of 10 projects with investments of at least RM1 billion or more were approved with total investments of RM27.5 billion and contributed 47 per cent of

the total investments approved. These 10 projects were mainly in petroleum products including petrochemicals (3 projects/RM14.1 billion), basic metal products (2 projects/RM4.2 billion), natural gas (1 project/RM3.7 billion), electric & electronic products (1 project/RM2.0 billion), food manufacturing (1 project/RM1.3 billion), transport equipment (1 project/RM1.2 billion), and non-metallic mineral products (1 project/RM1.1 billion). In comparison, there were 6 projects which recorded investments of at least RM 1 billion or more in 2015 with total investments amounting to RM46.0 billion.

In 2016, there were 85 projects approved which recorded investments of at least RM100 million or more. Total investments in these projects amounted to RM47.6 billion or 81.4 per cent of the total investments approved.

## PROJECTS APPROVED BY INDUSTRY

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.



### EXPORT-ORIENTED PROJECTS

The favourable investment environment in Malaysia, including the availability of excellent infrastructure, telecommunication services, financial and banking services, supporting industries as well as a pool of talent and skilled and trainable workforce, has tamped Malaysia as an attractive investment location to serve the global and regional markets. In 2016, a total of 274 projects approved involving investments of RM22.9 billion, proposed to export at least 80 per cent

of their output. Of the total investments approved, foreign investments amounted to RM15.4 billion or 67.2 per cent while the remaining was from domestic sources amounting to RM7.6 billion or 32.8 per cent.

The main industries with export-oriented projects were:

- E&E Products (RM8 billion/69 projects)
- Food Manufacturing (RM2.5 billion/24 projects)
- Basic Metal Products (RM2.3 billion/7 projects)

### EMPLOYMENT OPPORTUNITIES

Projects approved in 2016 were expected to create employment opportunities for 64,120 people. Of these, 13,480 or 21 per cent were in the managerial, technical and supervisory (MTS) category, 10,844 or 16.9 per cent were in the category of skilled workers and 11,565 or 18 per cent are sales, clerical and other categories.

Most of the employment opportunities were in the E&E with 16,260 jobs, followed by transport equipment (7,239) and rubber products (6,916).

### APPROVED PROJECTS BY OWNERSHIP

#### Domestic Investments

Based on the current global economic scenario, as well as increasing competition for global FDIs, it is critical for domestic investments to assume the pivotal role of driving Malaysia's investment agenda in transforming and reshaping the economy. Malaysia's continued competitiveness is now dependent on strengthening the manufacturing and services sectors and accelerating the shift to high value-added, high technology, knowledge-intensive and innovation-based industries. This transformation will not take place in the absence of stronger domestic investments.

Domestic investments approved in 2016 amounted to RM31.1 billion compared to RM 52.8 billion in 2015 and RM32.3 billion in 2014, accounting for 53.2 per cent of the total investments approved.

The major portion of the domestic investments approved in 2016 amounting to RM17.4 billion was in new projects, while RM13.7 billion was in expansion/diversification projects. Domestic investments were mainly in the petroleum products including petrochemicals with RM10.3 billion or 33.1 per cent of the total domestic investments approved in 2016. Other industries which recorded significant domestic investments were natural gas (RM3.7 billion), transport equipment (RM3.1 billion), basic metal products (RM2.7 billion), food manufacturing (RM2.1 billion), chemical & chemical products (RM1.7 billion), E&E products (RM1.3 billion) and rubber products (RM1.3 billion).

### Foreign Investments

Foreign investments in approved manufacturing projects in 2016 amounted to RM27.4 billion. Of the foreign investments totalling RM27.4 approved, RM10.3 billion or 37.6 per cent was in new projects while the remaining RM17.1 billion or 62.4 per cent was in expansion/diversification projects.

E&E products accounted for the largest amount of foreign investments, totalling to RM7.9 billion. The high volume of foreign investments in this category were largely due to the expansion project in household appliances products, LED lightings and commercial hand dryers of RM2 billion. Other industries with high levels of foreign investments were petroleum products including petrochemicals (RM5.6 billion), basic metal products (RM2.2 billion) and non-metallic mineral products (RM1.9 billion).

### Major Sources of Foreign Investments

In 2016, People's Republic of China (PRC) was the strongest supporter of the manufacturing industries in Malaysia, contributing investments of RM4.8 billion, followed by the Netherlands with investments of RM3.2 billion. The other major sources of foreign investments in 2016 were Germany (RM2.6 billion), the United Kingdom (RM2.6 billion), Republic of Korea (RM2.2 billion) and Singapore (RM2.1 billion). These six countries jointly accounted for 63.9 per cent of total foreign investments approved during the period.

#### People's Republic of China

The leading source of foreign investments in 2016 was PRC with investments totalling to RM4.8 billion in 33 approved projects. Investments in new projects amounted to RM2.5 billion (18 projects) while investments in expansion/diversification projects totalled RM2.3 billion (15 projects).

The large investments from PRC were due to:

- An expansion project to undertake manufacturing of ferro-nickel billet, stainless steel billet, stainless steel hot rolled strip, coal tar and lump semi coke with investments amounting to RM1.3 billion;

Investments from PRC were mainly in:

- Non-Metallic Mineral Products (4 projects/RM1.4 billion)
- Basic Metal Products (1 project/RM1.3 billion)
- E&E Products (8 projects/RM1.8 billion)

### The Netherlands

The Netherlands was the second largest foreign investor with total investments of RM3.2 billion in 18 projects approved. Investments in new projects amounted to RM2.4 billion (5 projects), while investments in expansion/diversification projects amounted to RM0.8 billion (13 projects).

#### Germany

Germany was the third largest investor with investments of RM2.6 billion (21 projects). Most of the investments were concentrated in the E&E products (10 projects/RM2.3 billion). Major projects approved included a RM1.4 billion project for the production of LED devices & packages, LED modules & systems including in SKD form & parts thereof, LED fabricated wafers and epitaxial wafers. Another project with investments of RM0.4 billion was approved to produce semiconductors.

#### The United Kingdom

The United Kingdom was the fourth largest source of foreign investments in 2016 with investments totalling RM2.6 billion. Major portion of the investment were in the E&E sector with investment amounting to RM2 billion followed by rubber products amounting to RM370 million and petroleum products (including petrochemicals) of RM113 million.

#### Republic of Korea

Republic of Korea was the fifth largest foreign investor with total investments of RM2.2 billion. Korean investments were in 8 projects, of which 3 were new projects and 5 were expansion/diversification

projects. The large investments from Korea were primarily due to an expansion/diversification project with investments of RM1.5 billion to produce ethylene, propylene, benzene and toluene.

### APPROVED PROJECTS BY LOCATION

A large number of projects were approved to be located in Selangor (242 projects), Johor (165 projects) and Pulau Pinang (106 projects), which continued to be leading states in terms of number of projects approved. A total of 513 projects or 70 per cent of the projects approved will be located in these three states.

In terms of the value of investments approved, Johor received the largest amount, with investments amounting to RM26.4 billion, Selangor ranked second with RM7.9 billion, followed by Sarawak (RM4.6 billion), Pulau Pinang (RM4.3 billion) and Perak (RM4 billion). These five states accounted for 80.7 per cent of the total investments approved in 2016.

#### Johor

The highest level of investments approved for the state of Johor amounted to RM26.4 billion in a wide range of industries such as petroleum products including petrochemicals (RM14.7 billion), natural gas (RM3.7 billion) and E&E (RM2.2 billion). A major project approved in Johor includes a new Malaysian majority-owned project with investments of RM7 billion to formulate or blend petroleum, petrochemical, chemicals, intermediate & final products or its related by-products in Pengerang.

#### Selangor

Selangor registered the second highest level of investments at RM7.9 billion, mainly in transport (RM2.8 billion), food manufacturing (RM1 billion) and fabricated metal products (RM664 million) industries.

#### Sarawak

Sarawak attracted investments amounting to RM4.6 billion. Major projects approved in Sarawak include an expansion/diversification of a Malaysian-majority owned project worth RM2.3 billion to produce aluminium ingots, aluminium alloy ingots, aluminium wire rods & aluminium alloy wire rods. Investments in Sarawak were concentrated in the basic metal products (RM2.3 billion) and E&E (RM1.6 billion) industries.

### Implemented Manufacturing Projects

The approved projects in 2016 bring manufacturing projects approved during the five-year period of 2012 to 2016 to 3,815 projects. Of these, 3,132 projects have been implemented thus far, with 3,010 projects in production and 122 projects still under factory construction and machinery installation. Total capital investment in these 3,132 projects amounted to RM207.7 billion. Another 41 projects with investments of RM7.9 billion are under site acquisition, while 430 or RM44.9 billion are in the active planning stage. Once these 471 projects are realised, total investment in these projects will amount to RM52.8 billion.

The majority of projects implemented during the five-year period of 2012 to 2016 covered major industries such as petroleum products

(including petrochemicals), E&E, transport equipment, chemicals and chemical products, basic metal product, natural gas and food products. Johor has the largest number of implemented projects to date, followed by Selangor, Sarawak, Pulau Pinang and Kedah.

In 2016, a total of 22 companies downsized their operations and retrenched 1,132 workers. 13 companies had to cease operations altogether. The reasons cited for these closures were poor market conditions, increasing costs, financial problems, disruptive technologies and restructuring issues. Nonetheless, these closures were offset by the creation of 14,808 new job opportunities during the same period as 209 new projects commenced production.





## PERFORMANCE BY INDUSTRY

### ELECTRICAL AND ELECTRONIC PRODUCTS

The Electrical and Electronics (E&E) products industry has always been a prime mover in the Malaysian economy over the past few decades as it has been successful in attracting large amounts of foreign investment and creating vast numbers of jobs in the process.

Its success has been proven by being the country's largest export earner in 2016. Exports of E&E products totalled RM287.7 billion and accounted for 44.6 per cent of the total value of manufacturing goods exported in 2016.

Singapore, the United States of America (USA), PRC, Hong Kong SAR and Japan were the top five export destinations, with Singapore accounting for the lion's share or 16.4 per cent of all Malaysian E&E exports.

#### Projects Approved in 2016

A total of 107 E&E projects with investments of RM9.2 billion were approved in 2016. Of the total, 17 were new projects with investments of RM1.5 billion

while 90 were expansion/diversification projects with investments amounting to RM7.7 billion.

Foreign entities accounted for the bulk of the total investments with RM7.9 billion or 86 per cent while domestic investments amounted to RM1.3 billion or 14 per cent. Existing E&E MNC companies in Malaysia continued to expand and diversify their operations, a testimony of their continued confidence in the country's investment environment.

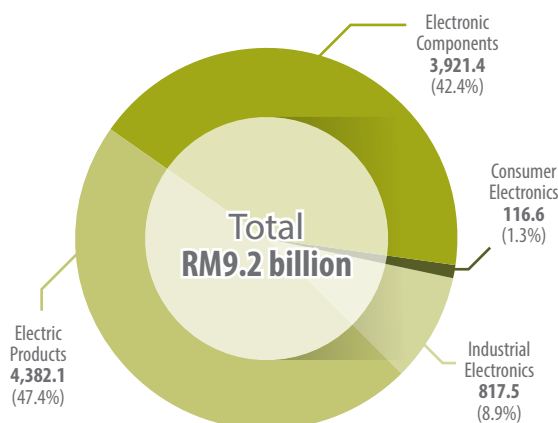
The major sources of foreign investments in this industry were from Germany, the

United Kingdom and PRC. Investments approved from Germany were mainly in electronic components and the industrial electronics subsector. Investments from PRC were mainly in electrical components while investments from the United Kingdom were mainly in electrical appliances.

#### Electrical

The electrical subsector saw 44 projects approved in 2016 with investments totalling RM4.3 billion. Of these, 11 were new projects and 33 were for expansion/diversification. This subsector is mainly dominated by foreigners with investments amounting to RM4.1 billion

Approved Investments in the E&E Industry by Subsector, 2016 (RM Million)



Sectors	Subsector	Example of Products
Electronics	Components	Semiconductors, passive components, printed circuit boards, metal stamped parts and precision plastics parts
	Consumer	Audio video products such as television receivers, infotainment products, speakers, cameras and electronic games
	Industrial	Multimedia and information technology products such as computers and computer peripherals; telecommunications equipment; office equipment; and box built products for industrial applications
Electrical	Electrical	Distribution boards, control panels, switching apparatus, lightings, transformers, cables and wires, primary cells and batteries, solar cells and modules, air conditioners, household appliances

Structure of the E&E Industry



(94.3%) while domestic investments totalled RM250 million (5.7%). These projects are expected to generate employment opportunities for 8,689 people.

Based on approvals in the E&E industry, electrical products formed the largest subsector, with solar projects still continuing to have strong demand.

Among the significant projects approved were:

- An expansion project by a wholly foreign-owned company with investments of RM2 billion to manufacture household appliances products, LED lightings and commercial hand dryers;
- A new project by a wholly foreign-owned company with investments of RM1.06 billion to manufacture photovoltaic solar integrated projects from solar ingots to solar modules. This new project would create 2,360 job opportunities;
- An expansion project by a wholly foreign-owned company with investments of RM439.8 million to manufacture photovoltaic cells and modules. This new endeavour will create 1,286 job opportunities;
- A Malaysian majority company has proposed a new project to manufacture floor care machine polishers, communication accessories and computer peripherals with an investment of RM37.2 million; and
- An expansion project by a wholly Malaysian-owned company to manufacture wire harness and die cut-components with an investment of RM21.7 million.

### Electronic Components

Electronic components formed the second largest share of investments in the E&E subsector at 42.4 per cent. A total of 23 projects with investments amounting to RM3.92 billion were approved in 2016.

The projects approved were for the production of electronic components such as LED wafers, epitaxial wafers and semiconductor devices. The subsector was driven largely by foreign investments. Of the total investments approved in the electronic components subsector in 2016, foreign investments amounted to RM3.34 billion or 85.3 per cent of the total while domestic investments totalled RM577 million (14.7%).

Of the projects approved, one was new project involving an investment of RM46.4 million, while 22 projects with investments of RM3.87 billion in all, were for expansion/diversification. These projects are expected to generate 5,215 jobs.

Among the significant projects approved were:

- An expansion project by a wholly foreign-owned company with investments of RM1.4 billion to fabricate LED wafers and epitaxial wafers. The project is expected to provide 476 more jobs.
- A wholly foreign-owned company received approval for an expansion investment of RM499 million to manufacture semiconductor fabricated wafers. This project will create 167 more jobs; and
- An expansion by a Malaysian majority-owned company to undertake an investment of RM48.6 million to conduct advanced test contacting solutions for automotive, high speed microwave and radio frequency (RF) semiconductor devices.

### Consumer Electronics

In 2016, three projects for consumer electronics were approved with investments of RM116.6 million from





foreign entities. Of the three projects approved, two were for expansion/diversification with investments amounting to RM51.2 million (43.9%) while one was a new project an investment of RM65.4 million (56.1%).

Foreign investments contributed about 99 per cent of investments approved for consumer electronics. Of significance was a new project by a wholly foreign-owned company with an investment of RM65.4 million to manufacture car radios & audio video navigation system (AVN).

### Industrial Electronics

A total of 37 projects were approved for industrial electronics with total investments of RM817.5 million in 2016. Of those approved, 33 were for expansion/diversification with investments of RM699 million (85.5%) while four were new ones with investments totalling RM118.5 million (14.5%). In this subsector, foreign investments amounted to RM349.7 billion while domestic investments totalled RM467.8 million.

Among the major projects approved during the period were:

- An expansion project by a wholly Malaysian company with investments of RM337 million to undertake development and production of smart sensing system for Internet of Things (IoT) applications and Optical Touch devices modules. The project is expected to create another 200 jobs;
- An expansion project costing RM137.4 million by a wholly foreign-owned company to manufacture electronics test and measuring equipment products. The project is expected to create another 400 jobs;
- An expansion project by a wholly foreign-owned company with proposed investments of RM66.7 million to manufacture electronics measurement tools, smoke detectors, motor controllers, farm information & management system and heating system

products that would create 50 new job opportunities; and

- An expansion project by a wholly Malaysian company with investments of RM55.7 million to manufacture test and measurement equipment.

## TRANSPORT EQUIPMENT

The transport equipment industry comprises the automotive, aerospace, shipbuilding and ship repair (SBSR), and rail subsectors. In 2016, exports of transport equipment totalled RM13.4 billion. Exports of road vehicles (comprising passenger vehicles, commercial vehicles, motorcycles/scooters, trailers/semi-trailers, bicycles/other cycles and parts and components) amounted to RM7.1 billion. This was followed by exports of aircraft associated equipment and parts amounting to RM5.5 billion while exports of ships, boats and floating structures totalled RM783.9 million. Exports of railway vehicles and associated equipment amounted to RM44.9 million.

### Projects Approved in 2016

In 2016, a total of 68 projects were approved in the transport equipment industry with capital investments of RM4.8 billion. Domestic investments amounted to RM3.1 billion (64.4%), while foreign investments totalled RM1.7 billion (35.6%). The approved projects are expected to generate a total of 7,239 employment opportunities.

Of the total projects approved, 24 were new projects while 44 were expansion/diversification initiatives. Investments in new approved projects accounted for 34.7 per cent (RM1.7 billion)

of the total investments approved while expansion/diversification projects represented 65.3 per cent (RM3.1 billion).

### Automotive

The automotive industry comprises the manufacture/assembly of motor vehicles, including motorised two-wheelers; reconditioning/reassembling/rebuilding/conversion of motor vehicles; and manufacture of parts and components, including coach and vehicle bodies. There are currently four National Projects and nine assemblers in the motor vehicle subsector with an annual installed capacity of approximately 963,300 units. In addition, there are 11 manufacturers/assemblers of motorcycles and scooters with an installed capacity of 1,069,700 units per year.

According to the Malaysian Automotive Association (MAA), production of motor vehicles in Malaysia in 2016 amounted to 545,253 units, comprising 503,691 units of passenger vehicles and 41,562 units of commercial vehicles. Sales of motor vehicles amounted to 580,124 units in 2016 consisting of 514,545 units of passenger vehicles and 65,579 units of commercial vehicles.

Moving forward, the productions of vehicles are shifting towards fuel-efficient models with the emergence of significant projects by domestic and international companies. This will in turn encourage the industry to meet higher levels of product technology, R&D initiatives and provide various business opportunities to Small & Medium Enterprises (SME).

### Projects Approved in 2016

In 2016, a total of 53 projects were approved in

the automotive industry with investments of RM2.7 billion. Domestic investments amounted to RM1.9 billion (70.5%) while foreign investments totalled RM790 million (29.5%). The approved projects are expected to generate a total of 5,281 employment opportunities.

Of the total projects approved, 16 were new projects while 37 were expansion/diversification projects. New projects accounted for 18.6 per cent (RM497.2 million) of the total approved investments, including a RM178.9 million project by a Malaysian-owned company to assemble internal combustion engine and other modular assembly (drivetrain module, corner module, axle module, front end module, door module, etc.).

Expansion/diversification projects in the automotive subsector amounted to RM2.2 billion (81.4%) in 2016, which included a project by a domestic and foreign joint venture company with investments of RM1.1 billion to assemble energy efficient vehicles (EEV). Other expansion/diversification projects involved investments of RM86.2 million by a foreign-owned company to assemble

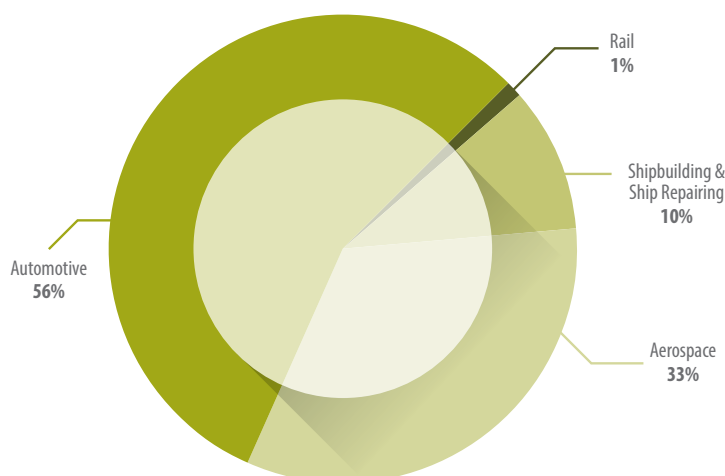
EEV. The approved investments in 2016 were in line with the National Automotive Policy (NAP) 2014 where domestic and foreign companies have been encouraged to invest in Energy Efficient Vehicles (EEV) related manufacturing activities.

Domestic investments continue to dominate as the major contributor to the growth of the industry. As outlined under the NAP, the automotive industry is forecasted to contribute 10 per cent to the country's GDP in 2020 where vehicle production is expected to increase to 1.35 million units. In terms of employment, the automotive industry is expected to create an additional 150,000 employment opportunities by 2020.

### Aerospace

The Malaysia's aerospace industry encompasses the manufacturing of parts and components; maintenance, repair and overhaul (MRO) activities; design and development; and assembly and operation of light aircraft and support services. Currently, there are eight companies involved in aircraft assembly, 28 companies in the manufacture of aircraft parts and components including ground support equipment, while more

Approved Investments in the Transport Technology Industry by Subsector, 2016





Countries	2016 (Jan – Oct)	2015
	Total Industry Volume (units)	Total Industry Volume (units)
Indonesia	874,847	853,089
Thailand	617,159	621,742
Malaysia	466,208	541,277
Philippines	292,502	234,951
Vietnam	217,361	164,571
Singapore	92,835	61,784
ASEAN 6	2,560,912	2,477,414

*Motor Vehicles Sales in the ASEAN Main Six Countries*

than 60 companies are involved in MRO activities.

### Projects Approved in 2016

In 2016, nine projects were approved in the aerospace industry with investments of RM1.6 billion. Domestic investments amounted to RM673.9 million (43.1%). The majority of these investments (RM889.4 million or 56.9%) were from foreign investors. The approved projects are expected to generate a total of 1,766 employment opportunities.

Of the total projects approved, three were new projects while six were expansion/diversification projects. New projects accounted for 43.1 per cent (RM 673.4 million) of the total approved investments, including a project by a new Malaysian-owned company to supply aircraft parts and components for fan cowls, cabin crew seating and evacuation doors with an investment of RM53.7 million. The company has been identified by Tier-1 companies like Boeing and Airbus as a vendor.

Expansion/diversification projects in the aerospace subsector amounted to RM889.9 million (56.9 per cent) in 2016. A significant project approved was the development and manufacturing of movable/variable lifting surface and anti-icing systems for aircraft; and aircraft doors by a foreign

owned company with an investment of RM556 million. Another significant project approved was an investment amounted to RM107.9 million by a Malaysian owned company to produce composite panel for aircraft.

The aerospace industry has been designated by the Government as a strategic subsector with high growth potential in the country's industrialisation and technological development programmes. Under the Malaysian Aerospace Industry Blueprint 2030, the Government's target is to make Malaysia the leading aerospace nation in South East Asia and to be an integral part of the global market by 2030. As Malaysia becomes the hub for aerospace companies, this will help to create opportunities for other original equipment manufacturers (OEMs) to complete their supply chains and accelerate the participation of local SMEs in global markets.

### Shipbuilding and Ship Repair

The shipbuilding and ship repairing industry is expected to generate RM6.35 billion GNI and provide 55,000 jobs by 2020. The shipbuilding and ship repair (SBSR) industry in Malaysia includes the manufacture of a wide range of ships including barges, passenger boats/ferries, patrol vessels, tug-boats, landing craft,

tankers, leisure craft, yachts, hydrofoils, hovercraft, and ship repairing.

According to the Review of Maritime Transport 2016 by UNCTAD, Malaysia was ranked 24th in the list of nations with the largest registered fleets (with 621 ships and a combined tonnage of 16,791,296 thousand DWT, contributing 0.94 per cent of the world's total fleet as at the end of 2015. At present, there are about 100 registered shipyards in Malaysia, in which 39 are located in Peninsula Malaysia and 61 in Sabah and Sarawak. Six large shipyards in the country which have repairing capabilities of more than 600 tonnes displacement are namely, Malaysia Marine and Heavy Engineering (MMHE), Boustead Naval Shipyard, Sabah Shipyard, Sapura Kencana, Nam Cheong and Muhibbah Marine Engineering.

### Projects Approved in 2016

In 2016, four new projects by Malaysian majority-owned companies were approved in the SBSR industry with total investments of RM470.9 million. The approved projects are expected to generate a total of 159 jobs. One significant new project approved was a high value added investment amounting to RM 350 million by a Malaysian majority-owned company to design, develop and manufacture the first Malaysian design



offshore support vessel (OSV). The project, which involves R&D activities as well, holds huge potential to boost the shipbuilding and ship repairing industry. Another two new projects involves investments by Malaysian majority-owned companies amounted to RM 53.3 million and RM 62.2 million respectively in the shipbuilding and ship repairing industries. Despite the sluggish environment in the offshore oil and gas industry which has somewhat suppressed demand for ships and offshore structures, Malaysia has excellent infrastructure and supply chain networks for the local SBSR industry to diversify and grow. The focus areas include production of small vessels for recreation, sports and leisure boats, production of vessels of 30,000 DWT and below for coastal shipping, fabrication of off-shore structures and the production of tug boats and pusher craft for export.

### Rail Industry

The rail industry comprises design, manufacturing and assembly; and repair and overhaul. There are more than 30 players involved in the designing, manufacturing and assembling of rail-related products in the country. More than 40 other local companies are involved in repair and overhaul activities. The bulk of the repair and overhaul activities are conducted in-house by the respective rail operators such as KTMB and Rapid Rail.

The year 2016 has also seen significant progress in the Entry Point Projects (EPP) under the country's Economic Transformation Programme (ETP), namely the Mass Rapid Transit (MRT), Light Rapid Transit (LRT) extension and the High Speed Rail (HSR) projects. The LRT Ampang Line and LRT Kelana Jaya Line extension has started operations. The much-awaited MRT Line 1 from Sungai Buloh to Kajang will be operational in phases. Phase 1

from Sungai Buloh to Semantan has already started operations in December 2016 while the entire line to Kajang will be fully operational by July 2017. The MRT Line 2, with a total distance of 52.2 km spanning Sungai Buloh, Serdang and Putrajaya is slated for completion by January 2022.

With these developments, more investments are expected to be generated, particularly in the maintenance, repair and overhaul (MRO) segment when the rail transport projects are fully operational. Foreign investments are expected to flow into the country with the establishment of the High Speed Rail Link (HSR) project between Malaysia and Singapore. The 350-km high speed rail link, when completed, will reduce travel time between Singapore and Kuala Lumpur to around 90 minutes. In addition, with the current megatrends towards urbanisation, green and energy efficient technology, they will create more opportunities for

manufacturers and service providers to supply related parts and components for the industry.

### **Projects Approved in 2016**

In 2016, two projects were approved for the rail industry with investments totalling RM44.4 million. The approved projects are expected to generate 33 jobs. A significant investment is an expansion/diversification project by a Malaysian majority-owned company to develop an energy storage power system for the rail industry with an investment of RM34.9 million.

## **MACHINERY AND EQUIPMENT**

Machinery & Equipment (M&E) Malaysia is at the last mile in its pursuit to become a developed and high high-income nation by the year 2020, driven by economic and technological developments. One of the key drivers for Malaysia's success is to allow the robust growth of the M&E industry due to its cross cross-cutting linkages with various economic segments such as the primary, manufacturing and services sectors.

The M&E industry is always at the forefront of the global Industrial Revolution. This sector has seen the progression from the mechanisation era (Industry 1.0) moving to mass production machines (Industry 2.0) followed by the adoption of automation machines (Industry 3.0) and now the Internet of Things (Industry 4.0), which is becoming an integral part of future manufacturing. These achievements showcase the advancement of technological convergence, translated into many innovative products combining a wide array of elements such as electronics, advanced materials and software integration.

Recent developments in revolutionary smart manufacturing technologies such as Big Data, cloud computing, the Internet of Things and the Industrial Internet are changing the global manufacturing landscape. On the factory floor, machines can now remotely interact with other machines remotely to produce the final products. The collation of real real-time data and predictive analysis feature, allows for "live" remote tracking of a company's companies global or domestic operations and help improve efficiency in managing many aspects of the operations, including process, production, logistics and supply chain management.

The Government continues to place a huge emphasis on developing a sophisticated and state-of-the-art M&E industry. This is done by encouraging local players to intensify the adoption and keep pace with advanced technologies and be prepared to support the requirements of future advanced manufacturing covering broad sections of the economy.

The M&E industry has also been identified as one of the catalytic subsectors under the 11th Malaysia Plan to spur the country's economic transformation towards greater prosperity. The shifting dynamics of global manufacturing are creating opportunities for a new generation of goods, products and services.

The M&E industry is highly competitive and consistently striving to innovate new production systems, to provide integrated solutions covering whole production processes with the most advanced technologies and automation.

Malaysian M&E companies need to further upscale their production processes by adopting smarter ways to manufacture and leverage on the growing opportunities in the region and integrate themselves into the global supply chain and achieve international recognition.

Machine-to-machine (M2M) communication is a broad label that can be used to describe any technology that enables networked devices to exchange information and perform actions without the manual intervention of humans. Real Real-time data transmission is deployed through embedded sensors integrated into the equipment which allows seamless monitoring, output optimisation and predictive maintenance. All these allow networked equipment and devices to interpret data and make independent decisions for greater automation and flexibility, higher productivity, efficiency and sustainability.

Advanced economies such as Germany, the USA, Japan, PRC and the Republic of Korea have started to embark on the concept of Smart Manufacturing in which real-time manufacturing data can be collected and analysed via multitudes of sensors to enable greater automation and flexibility, higher productivity, efficiency and sustainability. With this continued commitment to technological innovation, these economies remain the global leaders in the M&E marketplace.

As it stands, Malaysia's M&E subsector can be separated into five very broad groups: For 2016, approval was given to 88 M&E projects, injecting investments worth RM1.5 billion. Of these, 42 were new projects, with investments totalling RM819.4 million (53.3%) while 46 were





expansion/diversification projects involving investments of RM716.7 million (46.7%). The majority of investment inflows (65.1% or RM999.7 million) came from domestic sources while foreign investments comprised only 34.9 per cent (RM536.5 million). These projects are expected to provide employment for 2,866 people.

The general industrial M&E, modules, components and parts subsector was the biggest contributor for to investments in 2016. A total of 47 projects with investments of RM910.2 million was approved, comprising 21 new projects with investments of RM469.9 million (51.6%) and 26 expansion/diversification projects with investments totalling RM440.3 million (48.4%). Domestic investments in this subsector amounted to RM585.7 million (64.3%) while foreign investments totalled RM324.4 million (35.7%).

The specialised M&E for specific industries subsector ranked second in terms of investments

approved for the same period. Investments amounted to RM547.5 million in 32 projects, of which 15 were new projects with RM274.2 million (50.1%) and 17 were expansion/diversification projects with a total investments totalling of RM273.3 million (49.1%). Investments in this subsector were mainly driven by domestic investors who committed investments amounting to RM385.5 million (70.4%) while foreign investments amounted totalled to RM162 million (29.6%).

The investments approved for the power generating subsector amounted RM76.4 million. It comprised six new projects with investments of RM75.3 million (98.5%) and a single expansion project with investments totalling RM1.2 million (1.5%). Investments from foreign sources amounted to RM50 million (65.4%) while domestic investments totalled RM26.4 million (34.6%). Two expansion/diversification projects came from the maintenance, upgrading or reconditioning of

M&E subsector and generating domestic investments of RM2 million.

The investments approved in 2016 showed that the M&E sector was at the forefront in adopting the emergence of Industry 4.0 or the Smart Manufacturing revolution. Among the significant projects approved included:

- An expansion project by a wholly wholly-owned foreign company with investments of RM70 million to manufacture die sorting machines embedded with M2M connectivity and predictive analysis capability for the semiconductor industry. This project is a testament of the foreign investor's confidence in Malaysia as the company continues to expand and diversify its operations in Melaka. The 10,000-sq metre facility houses both its R&D and manufacturing operations. Since its commencement in 2006, this facility has

become the group's first centre in Asia to undertake R&D activity activities and manufacture advanced automation equipment for the semiconductor industry. Its expansion is timely as global business trends are changing towards the adoption of Industry 4.0 or smart manufacturing to optimise productivity and efficiency. The company will continue to rely on employing highly-skilled, scientific and technical personnel to support its production of innovative equipment in Malaysia. To date, the company employs 207 people of which 170 (82%) are involved in the R&D and Science and Technical supervisory levels with salaries of more than RM3,000 and above. The company will further employ 87 Malaysians for its expansion. Over the years, the company has spent a total of RM12 million to train more than 220 local managers since starting operations. It has also formed collaborations with local universities and training institutions by providing internships, exchange programmes and a technical specialist programme for Advanced Diploma courses, which is certified by German examiners. Its collaboration partners include the Multimedia University, Universiti Malaysia Pahang, Universiti Teknikal Malaysia Melaka, Universiti Teknologi MARA and German-Malaysian Institute.

- A diversification project from a home-grown automation champion with investments amounting to RM17.7 million to manufacture test solutions equipment for smart

devices in southern Peninsula Malaysia. This equipment is used in the semiconductor industry and can be grouped under the automated test handlers category. What makes this equipment unique is that it will be able to test smart IC chips embedded with an assortment of IoT-enabled sensors such as a gyroscopes, accelerometers and many more. This Malaysian-made equipment is capable of handling a complete ecosystem test that mimics real life situations such as abrupt changes in temperature, vibration, pressure, humidity, functionality, etc. This project fits perfectly with the global trends of IoT and will make Malaysia part of the value chain to complement the revolution. The company also has a large technical talent pool that undertaking design & development activity activities to ensure continuous improvement in the throughput of their equipment. About 60 per cent of their total workforce are earning more than RM3,000 monthly.

- A diversification project from a Malaysian company with investments of RM21 million to manufacture smart multijet water, smart water meters, smart electronic bulk water meters and smart metering solutions. As Malaysia embraces the era of smart cities, it is crucial for all the natural resources, especially clean and treated water is to be efficiently managed in an efficient manner. Smart meters manufactured by the company are equipped with various sensors and wireless transmitters to enable automatic, seamless

and wireless reading of the water meters; and without the need for manual inspection or reading. This saves time and resources, plus ensuring the integrity of the meter reading by eliminating human errors. The company also offers a cloud-based data server to record and analyse clean and treated water resources for better water sustainability for the future. The company is committed to do research with R&D expenditures amounting to RM20.5 million for a period of three years.

- A new project from a Malaysian company with investments of RM5.6 million to undertake assembly and integration of industrial grade 3D mono-material and multi-coloured printers. Additive manufacturing is one of the pillars to support smart manufacturing. Additive manufacturing is a term to describe sets of technologies that create 3D objects by adding layers-upon-layers of materials. Materials can vary from technology to technology. Today, the common materials used are plastic, polymer and metal powder. The advancements of additive manufacturing will eventually enable us to 3D-print human tissues. The company's 3D printers will be based on the Fused Deposition Modelling technology. This technology uses drops of melted thermoplastic materials that will join together to form a shape. As the material cools down and hardens, a 3D object is formed. The company has also filed a patent in the USA for the 3D multi-coloured printers under the category of

ultraviolet (UV) energy-curable colour coating on transparent or translucent base materials. This project, once implemented, will be the second of its kind to manufacture 3D printers by a domestic company.

Malaysia's modern M&E industry is a far cry from just servicing imported M&E to support the agricultural and resource-based industries. Over time, it has evolved and attained global recognition amongst prestigious manufacturers of specialised process and automation equipment, particularly for the electrical and electronics (E&E) industry and material handling equipment. More Malaysian companies are being transformed from contract manufacturers to becoming Original Equipment Manufacturers (OEMs), investing heavily in R&D, engineering design, innovation and system integration. With enhanced capabilities and involvement in higher value-added activities throughout the M&E ecosystem, Malaysian companies have achieved international recognition to integrate themselves into the global supply chain. Most exciting of all, Malaysians are also applying their knowledge and resources towards developing their own proprietary M&E for global exports. Malaysia's M&E industry is among the largest and strongest in the ASEAN region. This subsector is dominated by small small-and medium medium-sized companies that provide customised products and offer end-to-end manufacturing (total solution providers) which include initial design and development phase, up to distribution and logistics phase. This is to cater to the strong demand from both domestic and international markets.

The strong export performance is testament of a robust M&E subsector, which contributed more than five of the total exports of manufactured goods in 2016 and registered a healthy growth with CAGR of 4.3 per cent. M&E exports are projected to reach RM43 billion in 2020. The future direction of the M&E industry will be focused on high technology and high value-added M&E combining key future technologies, including electronics, robotics, advanced materials and software integration.

For the future, the M&E industry must strengthen its core activities in R&D, D&D, prototyping, software development, system integration, assembly, testing and calibration. With the availability of highly-skilled human resources resource and strong prevailing IP protection laws, coupled with a dynamic engineering supporting industry providing total solutions, Malaysia will remain a competitive preferred location for manufacturing solutions and production technology in the years to come.

### **METAL FABRICATION & ENGINEERING SUPPORTING INDUSTRIES**

The Metal Fabrication and Engineering Supporting Industries (ESI) are the building blocks serving the fundamental base for the growth of other industries in Malaysia. In general, metal fabricated product manufacturing involves specific processes such as bending, welding and assembling activities while the ESI covers the moulds and dies, casting, machining, metal stamping, heat treatment and forging activities.

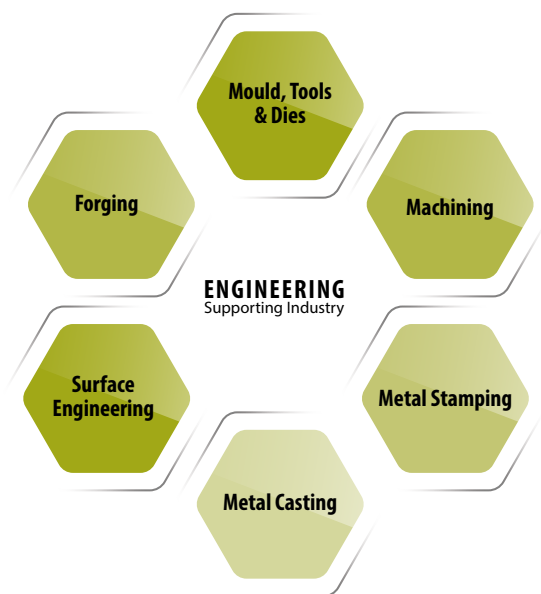
All these subsectors contribute significantly to the manufacturing and services sectors and require continuous technological changes and upgrading as they are impacted by consumer demand, cost of production and competition within the industry.

Metal fabricated products are intermediate and finished metal products consisting of fabrications for the offshore & onshore oil & gas, processing and manufacturing plant fabrication, industrial machinery & equipment structures, component fabrication as well as metal fabrication for the construction industry.

Local fabricators for the oil and gas industry provide fabrication works for the offshore oil drilling platform requirements that include the production of jackets, modules, platform decks, accommodation modules, pipes & spools; and various metal fabricated products for onshore activities related to petroleum refineries, petrochemical plants and storage facilities.

For general applications, fabricated metal products include items such as tanks, drums, metal boxes, tin cans, metal furniture and fixtures, wires and wire products, non-ferrous metal products and household wares. The industry continuously continues to evolve and grow in tandem with Malaysia's growth towards becoming an industrialised nation.

To date, Malaysia is recognised globally for its capability and consistent quality of production as well as fast and reliable delivery of a diverse range of engineering products, particularly in precision machining and fabrication. Malaysia's metal fabricators



and ESI companies continue to maintain their competitive advantage in the global supply and value chain, ahead of rising competition faced from ASEAN neighbours such as Vietnam, Indonesia and Myanmar. Malaysian companies have successfully leveraged on their capability to produce high high-value added and high-mixed low-volume products, providing integrated services with niche production concepts which require high standards of design

and development, stringent quality assurance and short lead time delivery.

In addition, the Government is encouraging more companies to move up the value chain and provide total manufacturing solutions for high-end industries such as the semiconductor, machinery, medical, oil & gas and aerospace fields in line with Malaysia's efforts to become the preferred location for global outsourcing.



The metal fabrication and ESI industries are affected by uncertainties in the global economy such as Brexit, change in the US administration, slowdown in advanced economies as well as unstable oil prices which had led to sluggish growth and lower demand from the building and civil construction, oil & gas, and other relevant industry sectors.

### Projects Approved in 2016

A total of 75 projects were approved in the metal fabrication and engineering supporting industry in 2016 with investments totalling RM1.4 billion. Of these, 47 were new projects (RM901.5 million or 64.2%) and 28 were expansion/diversification projects (RM503.2 million or 35.8%).

Domestic investments amounted to RM769.2 million (54.8%) and foreign investments totalled RM635.5 million (45.2%). Projects approved in 2016 are expected to generate employment opportunities for 3,718 persons.

A total of 40 projects worth of RM915.9 million were approved for the metal fabrication subsector. Of these, 31 were new projects with investments of RM625.1 million (68.2%) and nine were expansion/diversification projects with investments totalling RM290.9 million (31.8%). FDI amounted to RM398 million (43.5%) while DDI totalled RM517.9 million (56.5%).

The machining subsector received 15 projects with investments of RM212.6 million. Six were new projects with investments of RM95.6 million (44.9%) and nine were expansion/diversification projects with investments totalling RM117 million (55.1%). FDI amounted to RM79 million

(37.2%) while DDI totalled RM133.6 million (62.8%).

The mould & die subsector's 13 projects were backed by investments of RM111.1 million. These comprised four new projects with domestic investments of RM54.4 million (49%) and nine expansion/diversification projects with investments of amounting to RM56.7 million (51%). FDI totalled RM22.4 million (20.2%) while DDI totalled amounting to RM88.7 million (79.8%).

The surface engineering subsector contributed six new projects with investments of RM101.6 million. Foreign investments amounted to RM95.8 million (94.3%) while domestic investments totalled RM5.8 million (4.2%).

The forging subsector received one new local project and one foreign-owned diversification project with total investments of RM44 million, with foreign investments consisting of RM38.6 (87.7%) and domestic investments of amounting to RM5.4 (12.3%) million. The casting subsector contributed two new projects with domestic investments of RM54.4 million.

Significant projects approved included:

- A new wholly-foreign foreign-owned company with investments amounting to RM93.7 million to manufacture coated optical components and undertaking physical vapour deposition coating activity. This is the company's first manufacturing facility outside Europe and it will complement the ecosystem for high high-tech industries, specifically the coating requirements for biophotonics, sensors &

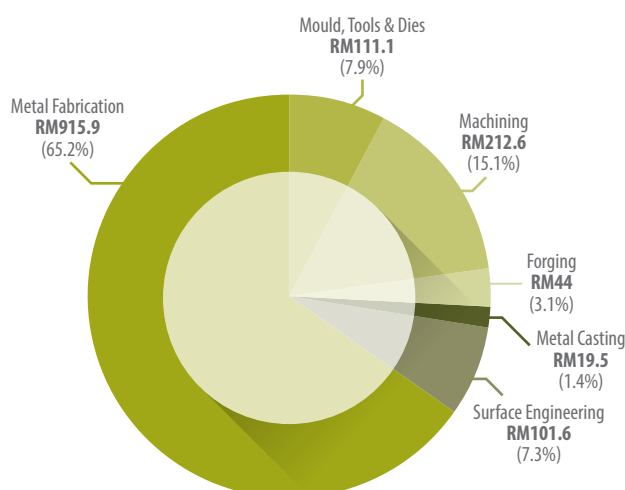
imaging, lasers & defences, automotive optical solutions and IoT products. The company will be able to achieve a level of one nanometer accuracy for every one meter square of coating and capable of coating up to 200 layers for both metallic & and non-metallic products. This surface engineering project will be one of the catalytic projects that will be able to attract more investments from the high high-end optical manufacturing solutions, especially for sensors and imaging. This project will utilise 99 per cent local talent, with 61 per cent in the managerial, engineering, technical and supervisory levels. Only three expatriates are needed to kick-start this project. This is a testament of Malaysia being highly regarded for its young, trainable and resourceful talents.

- A foreign-owned diversification project to produce aluminium forged parts for the automotive industry. This export-oriented project worth RM38.6 million will be the first in Malaysia to use high silicon aluminium alloys

to produce forged parts. This diversification project will recycle by-products (aluminium slugs) from the company's existing smelting plant as the raw material to produce forged parts. The company is also the pioneer for close-die forging technique in Malaysia. This technique is essential to produce near-net-shape forgings requiring minimal secondary machining processes such as trimming, deburring and grinding. Forged parts made from high silicon aluminium alloys are suitable for automotive compressors, engine pistons and brake calliper caliper pistons as they are generally lighter in weight while maintaining their high strength and mechanical properties. This will allow for lighter curb weight of vehicles, thus reducing fuel consumption. This is in line with the Government's initiative to encourage Energy Efficient Vehicle (EEV) production.

- A significant investment from a local tier-3 company worth RM27 million to support the aerospace industry. The company is expanding to produce

**Approved Investments in Metal Fabrication and Engineering Supporting Industry by Subsector 2016, (RM Million)**





moulds, jigs & fixtures and machining of flying and non-flying parts. Among the flying parts are components for the engine fan cowls, wing ribs and rotating oil seals while the non-flying parts include the assembly of checking jigs for Airbus 320. Its customers are prominent players in the aerospace industry players in Malaysia such as Spirit Aerosystem, CTRM, UMW Aerospace, Senior Upeca and SME Aerospace. The company is also in the midst of becoming the sole producer of invar mould for composite based products.

- Another notable approved project with investments of RM6.3 million from a new local company producing to produce jigs & fixtures for repair and overhaul activities for the aerospace industry. Airbus has chosen the company to supply jigs for composite repairs for their A320 and A330 programmes based on the company's engineering capabilities in design and analysis. This project, a direct contract from Airbus, will further complement Malaysia's aerospace ecosystem.

- An expansion project of RM104 million by a wholly foreign foreign-owned company to manufacture flexible aluminium foil and lining for packaging solutions for various industries including the food and beverage, consumer products, and medical industries. This expansion will be its fifth plant in Malaysia and will be equipped with automated processes to further increase productivity and reduce dependency on low low-skilled labour.

Malaysia's metal fabrication and ESI continue to be major contributors to the economy. Quality investments approved in 2016, indicated a major shift towards higher-technology, higher value-added products and services.

There are currently more than 2,000 ESI companies in Malaysia, providing products and services ranging from moulds and dies to metal fabrication. With non-equity investments on the rise and the emergence of digital manufacturing, Malaysia's ESI is positioned to become a 'One Stop Centre' by offering total solutions to clients.

As a 'One Stop Centre', Malaysia would also offer integrated services ranging from product conception (including design and prototyping) to serial production while managing the entire process flow including procurement, logistics, packaging, testing and certification. This has been made possible by constant upgrading of facilities and acquiring the latest technologies to meet stringent requirements from Original Equipment Manufacturers (OEMs) to outsource parts and components and precision engineering services.

Future development of the engineering supporting industry will focus on strengthening its services and enhancing its capability and quality of production to provide integrated solutions. The industry is gearing towards international certification for the supply of parts and components for the oil & gas, aerospace, medical devices and solar/ photovoltaic industries.

Looking forward, Malaysian companies need to consolidate to become more competitive to provide total solutions

to support the growth of Malaysia's manufacturing sector, which is moving towards high technology, capital capital-intensive and high value value-added industries.

## BASIC METAL PRODUCTS

Malaysia's iron and steel industry consists of upstream, midstream and downstream manufacturing activities of ferrous (iron and steel) and non-ferrous metals (such as aluminium, tin, copper, zinc and lead).

In general, the industry can be categorised into two main sub-sectors namely:

- Long products comprising billets, blooms, sections, bars and wire rods in the upstream and midstream; and downstream products such as wire mesh, fine drawn wires, bolts and nuts.
- Flat products comprising slabs, plates, hot rolled coils (HRCs), cold rolled coils (CRCs), sheets & galvanised coils in the upstream and midstream; and downstream products such as pipes, tubes, tin plates and fabricated metal products.

Malaysia's apparent steel consumption (ASC) for 2016 was estimated at 10.3 million metric tonnes and is targeted to reach 16 million metric tonnes by 2018. The annual growth rate for steel demand is forecast at four per cent from 2016 to 2018.

In view of the global overcapacity of steel supply, People's Republic of China (PRC) is committed to cut the overcapacity of inefficient state-owned enterprises which will help reduce the excess supply and improve prices. The recent consolidation among top steel players such as Baosteel



Group and Wuhan Steel Group is expected to further reduce their current capacity of 60 million metric tonne. Despite this development, Malaysia still continue to face stiff competition from The PRC due to overcapacity and as a result, local steel mills are still operating below production capacity and have yet to achieve economies of scale. However the Malaysian steel players continue to sustain their operation with the assistance provided by the government via various trade remedies which have led to some decline in imports of steel especially from PRC.

Promotion of investments for the steel industry in Malaysia will continue to prioritise integrated projects with state of the art technology that emphasise on high technology, high value-added, energy efficient and environment friendly. The local iron and steel industry players are encouraged to move up the value chain by using less scrap based technology to enable production of higher grade steel to support high-end manufacturing industries such as automotive, oil and gas, E&E and machinery industries.

Compared to the ferrous metal sector that is already established, there is still high potential for the non-ferrous metal sector to be further developed in the country. The main players in this sector are limited to the aluminium industry subsector producing aluminium sheets/foils, aluminium finstock, aluminium ingots (recycled), aluminium rods and aluminium extruded profiles, and the copper sub-sector producing copper rods/wires, copper strips, copper tubes/extrusions and tin based metal. Currently in the ecosystem there is only one

producer in the non-ferrous upstream manufacturing.

### **Projects Approved in 2016**

In 2016, there were 19 projects approved involving the manufacture of basic metal products with investments of RM4.9 billion. Of these, eight were new projects with investments amounted to RM0.4 billion and 11 were expansion/diversification projects with investments of RM4.5 billion. These projects are expected to generate employment opportunities for 3,345 people.

Significant projects approved in 2016 include:

An expansion/diversification project located in Sarawak by a Malaysian majority-owned company with an additional investments of RM2.2 billion. The company will expand its current facility to produce aluminium ingots, aluminium alloy ingots as well as diversifying into midstream products to produce aluminium wire rods and aluminium alloy wire rods. This integrated project will feature state-of-the-art electrolysis process for the aluminium industry in Malaysia that is energy efficient and environmentally-friendly.

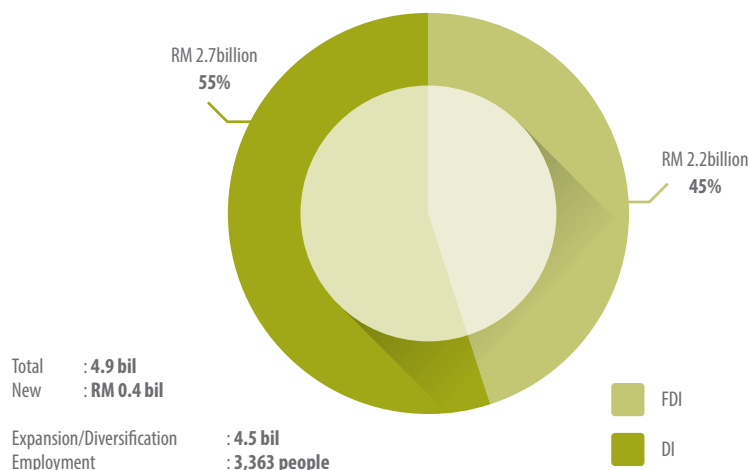
A diversification project with an additional investments of RM1.9 billion by a Malaysian majority owned company to manufacture ferro-nickel billets, stainless steel billets, stainless steel hot rolled strips, coal tar and lump semi coke and to revive its existing facility to manufacture carbon steel long products at Telok Kalong in Kemaman, Terengganu. This integrated stainless steel project will help the company to penetrate various industries ranging from cookware and cutlery to surgical instruments, automotive and into aerospace structures that require stainless steel's special and functional features.

A wholly Malaysian-owned company will undertake an expansion/diversification project with additional investments of RM3.8 million to manufacture electrical discharge machining (EDM) brass wires and diversifying into the production of stainless steel and aluminium wires. This project will showcase an upgrade of technical capabilities in producing super fine wire for EDM machines with diameters ranging from 0.15mm to 0.07mm. This diversification into stainless steel and aluminium wires will allow the company to enter new market segments in the automotive, semiconductor and medical device industries. A leading international supplier of coated steel sheet for the building and construction industry located in Bukit Raja, Klang has upgraded their facility in Malaysia by installing the latest state of the art coating system. An additional investment of RM65 million is part of their initiative to further automate and enhance their production facility leading to improvement in production capacity and speed without compromising product quality. This improvement in technology is to accommodate changes in business expectation and requirement from their clients. Hence it will also create potentials for further upscaling of talents and facing out of low skill labour in the country.

Despite slower growth of the economy in 2016, the Iron and Steel industry will continue to play a pertinent role in shaping up Malaysia's industrialisation landscape by generating spill over effects to cross cutting economic activities such as mining, manufacturing and infrastructure sectors.

By 2020, Malaysia targets to increase local steel demand from 10.4 million metric tonne

Approved Investment as at December 2016



to 16.5 million metric tonne which is to be supported by the increased of local production to imports ratio from 60:40 to 70:30. The ramping up of steel production is expected to see a rise in the creation of new employment from 160,000 jobs to 220,000 jobs.

It is crucial for Malaysian steel players to venture into new market segments rather than focusing into traditional market segment such as construction sector by producing higher grade and quality steel to support higher end manufacturing activities such as automotive, aerospace, medical devices and electronics. Such adjustment is crucial to sustain the local iron and steel industry and repositioning Malaysia's competency regionally or globally. This repositioning requires support for ease of technology access either via joint venture with foreign partners or close collaboration with local technical institutions. Malaysian talents also require upscaling to be equipped with know-how on state of the art technology.

To develop existing talents, Malaysian Steel Institute (MSI) has been appointed as the Industry Lead Body (ILB)

for the Iron and Steel sector by the Ministry of Human Resources. They will undertake the Occupational Analysis for the Iron and Steel industry and develop new and reviewing the existing National Occupational Skills Standards (NOSS) in meeting the industry needs.

Consolidation among Malaysian steel players is encouraged and it will be a game changer for the industry to adopt new business models more sustainable and competitive as proven by PRC. This consolidation, particularly between upstream and midstream could create more integration and allow companies to be more competitive by optimising their resources when bidding for local or overseas projects.

Malaysia is currently promoting Industrialised Building System (IBS) to be adopted by the construction industry. The local industry players need to adopt this new standard in producing construction materials based on the IBS standards set by CIDB to retain or expand their local market share. This is crucial for local players to benefit from current mega projects development being undertaken by the government and private sectors namely Forest City in

Johor, Melaka Gateway, Mass Rapid Transit (MRT) and Bandar Malaysia at Sungai Besi Kuala Lumpur.

## TEXTILES AND TEXTILE PRODUCTS

The textiles and textile products industry comprises both upstream (primary textiles) and downstream activities (garments, textile products and accessories). In 2016, the industry was the country's 10th largest export earner with total exports of RM12.6 billion and contributing approximately 2.1 per cent to Malaysia's total exports of manufactured goods.

Turkey becomes a leading export market for Malaysian textile products, contributing RM776.7 million (11.4%) of the industry's total exports followed by Japan and Indonesia. In 2016, a total of eight projects were approved in the textiles and textile products industry with total investments of RM763.4 million. Domestic investments amounted to RM401 million (52.5%) while foreign investments accounted for RM362.4 million (47.5%).

Of the total projects approved, two for primary textiles (RM698 million), two for ready-made garments (RM1.2 million) and four for textile products/accessories (RM64.2 million). Of the eight projects approved, four were new projects (RM456 million) while the remaining were expansion/diversification projects (RM307.4 million). The approved projects are expected to generate 344 employment opportunities of which 143 in the managerial, technical and supervisory categories. Some of the high income jobs to be created include engineers, quality controllers and high-skill technicians.

### Projects Approved in 2016

The significant projects approved in 2016 was by Malaysia majority company with investments of RM410 million. The company is planning to undertake the production of knited polyester fabric with investment in the state-of-the-art machine from Germany and eco-friendly facilities for the process modernisation of knitting, dyeing and finishing of the high-end garments. It furnishes high stretch, sustainable, fine yarn count and functional performance fabric features in the sport shirt and casual dress for Nike, Under Armour and Adidas. This project will lead to substantial creation of employment and rural development in Kluang district, Johor. The potential market is 60 percent for domestic.

Apart from the above project, there was another significant investment of RM287.9 million for non-woven fabrics. This is an expansion foreign-owned project with focusing on more higher value-added products and the improvement of existing products which demonstrate its commitment to a long-term and sustainable investment in Malaysia. Its strong exports market is further strengthened by an increased in sales and production output with the highest demand coming from high-value brand customers namely, Kimberly Clark, Procter & Gamble, SCA and 3M. In addition, the company's expansion and continued emphasis on research and development of new high quality products will offer various job opportunities to local skilled employees. Its commitment to training will benefit employees in acquiring knowledge and experience in the latest technological innovations and development.

Moving forward, textiles industry are still relevant and

to be promoted especially on niche market and the upstream activities. Under the Malaysian 2015 Budget, the Government introduced a new tax incentive, namely, the Automation Capital Allowance (Automation CA) with the objective to accelerate the shift of manufacturing and services sectors, from labour-intensive into high value added, knowledge-intensive and innovation-based industries.

To date, MIDA has received eight applications on textile projects under this new initiative.

### NON-METALLIC MINERAL PRODUCTS

The non-metallic mineral industry was Malaysia's 15th largest export earner in 2016 with total exports amounting to RM5.6 billion or approximately 0.7 per cent of the country total exports of manufactured goods.

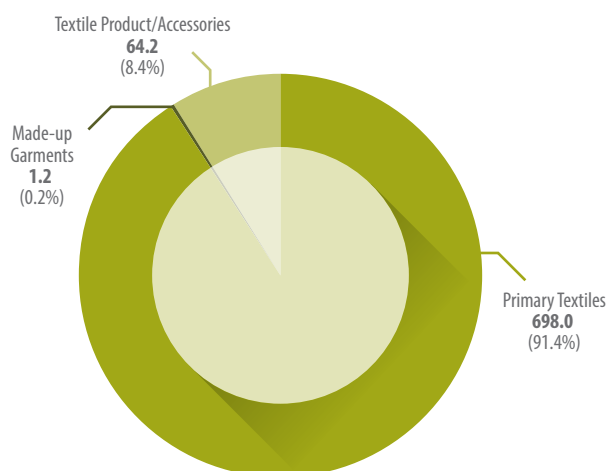
The industry comprises ceramics and clay-based products, cement and concrete products, glass products, other non-metallic mineral products such as quicklime, barite, marble and granite, and Industrialised Building System (IBS) components. The major exports in 2016 include mineral

manufactures, (RM2.3 billion), glass and glassware (RM1.9 billion); and clay construction materials and refractory construction materials (RM772.3 million).

Singapore was the leading export destination for Malaysian non-metallic mineral products, contributing RM2.0 billion (36.2%) of the industry's total followed by Japan and the Republic of Korea.

A total of 34 non-metallic mineral projects with total investments of RM3 billion were approved in 2016. Of these, 16 projects were new valued at RM2.3 billion in investments while the remaining 18 were expansion/diversification projects amounting to RM0.7 billion. Domestic investments totalled RM1.1 billion (35.9%) and foreign investments amounted to RM1.9 billion (64.1%). Of the above projects and investments, 11 projects were for IBS components, 10 for ceramic and clay-based products, seven for glass products, three for concrete products and another three were for other non-metallic products.

Approved Investment in the Textiles and Textile Products Industry by Subsector 2016, (RM Million)



### Projects Approved in 2016

Among the significant projects approved in 2016 was a majority foreign-owned project with investments of RM1.1 billion to produce IBS components. The project will adopt IBS as a major solution for its extensive property development business to ensure a safe and constant supply of high-quality building components locally as well as regionally. The project will undertake an advanced philosophy of eco-friendly and green construction using up-to-date automation technology from Europe. The project will be one of the largest pre-fabricated facility in Malaysia with a complete supply chain which integrates various designing, manufacturing and installation services.

MIDA will continue promoting upstream activities for IBS manufacturers to produce materials, parts and components. It will also integrate the supply chain process by adopting an ecosystem approach. MIDA also feels that it needs to identify the non-metallic minerals products industry's gap to help the construction industry improve its performance, particularly in adopting innovative ways to make its activities more sustainable. This is also to reduce the construction industry's strong dependency on labour to be more competitive in today's challenging world. IBS, being a modern and comprehensive construction eco-system, will serve this purpose well. This will be in line with the productivity thrust of the Construction Industry Transformation Programme (CITP), launched on 10 September 2015. The CITP has also identified modern construction techniques as one of the key drivers to increase productivity by two-and-a-half times.



The CITP, which aims to increase the adoption of IBS construction in Malaysia, is a national agenda to transform the construction industry. It has the primary objective of transforming the construction industry towards becoming highly productive and environmentally sustainable with globally competitive players focusing strongly on safety and quality standards.

The Government recently announced incentives for companies manufacturing IBS components to be considered for either Pioneer Status or Investment Tax Allowance (ITA). These incentives are effective for applications received by MIDA from 10 September 2015 until 31 December 2020. Any importation of machinery, equipment and raw materials used directly for the manufacture of IBS components and not available locally are entitled for import duty exemption.

The current outlook for the implementation of IBS in Malaysia appears encouraging as the CITP will drive an era of progress and growth in the construction industry by 2020.

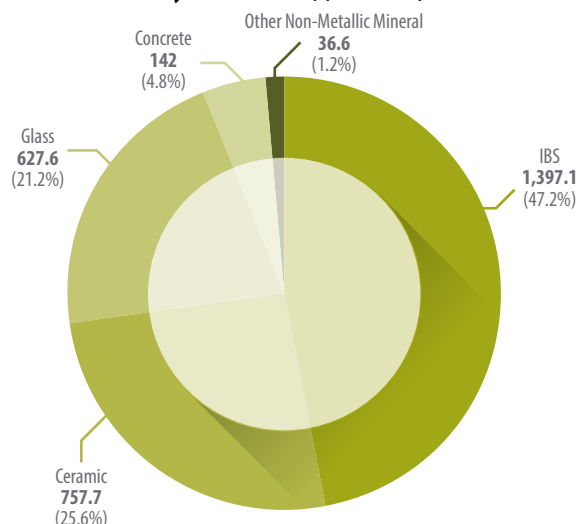
### MEDICAL DEVICES

The size of the global medical devices market in 2015 was estimated at US\$324 billion, where 49 per cent was dominated by the USA followed by Western Europe at 24 per cent and Asia Pacific at 20 per cent. Based on a survey made by the Association of Malaysian Medical Industries (AMMI), more than 90 per cent of the medical devices manufactured in Malaysia are exported worldwide, especially to the USA, Europe and Japan. Under the 11MP for national development (2016-2020), the medical devices industry has been identified as one of the sectors for rapid growth alongside the aerospace, chemical, electronics and machinery subsectors.

The growth of the existing 200 medical devices manufacturers in Malaysia will further accelerate the realisation of targets under 11MP. Out of the 200 companies, 30 are multinational companies (MNCs), 50 are large local companies (LLCs) and 120 are small and medium enterprises.



**Approved Investments in the Non-Metallic Mineral Products Industry by Subsector 2016, (RM Million)**



In 2016, exports of medical devices were valued at RM15.8 billion. Of this amount, RM7.9 billion were export of medical gloves, accounting for about 49.8 per cent of total exports of medical devices. Other major exports included instruments and appliances used in medical, surgical, dental or veterinary sciences (RM2.5 billion), disposable tubes for intravenous fluids, cannulae (RM1.9 billion), other electro-diagnostic apparatus (RM627.2 million) and contact lenses (RM658.9 million).

The medical devices industry in Malaysia is poised to continue its growth as existing players are moving towards expansion and diversification projects. This was proven by the increasing amounts of investment and the number of projects approved in 2016 compared with 2015. A total of 41 projects with investments of RM2.9 billion were approved in 2016. Of these, 26 were expansion/diversification projects with investments of RM1.6 billion (56.6%) and 15 were new projects with investments totalling RM1.2 billion (43.4%). Foreign investments amounted to RM1.6 billion (55.4%) while domestic investments totalled RM1.3 billion (44.6%).

These projects are expected to generate employment opportunities for 7,386 people.

Among the significant projects approved were:

- A diversification project by a wholly foreign-owned company with an investment of RM539.1 million to manufacture medical devices for cardiology, cardiovascular, neurology and associated parts & components. These products will be manufactured using the latest innovative technology and no similar products are currently being approved/produced in Malaysia. This facility will be the first in the Asian region and will provide good business opportunities in terms of branding and promotion. The entire production is meant for export.
- A new project by a wholly foreign-owned company to manufacture structural heart components, endoscopy biopsy devices, and to provide capital equipment repair services. The project will enhance the knowledge of local workers through training programs and the transfer of high and

advanced technology into Malaysia. In addition, it will also collaborate with local universities to build talent in the field of medical devices. 99 per cent of products produced will be for the export market.

Malaysia has always been an attractive location for MNCs in the medical devices industry for the establishment of manufacturing facilities. Annually, Malaysia receives investments from new MNCs from various countries, especially from the USA and Europe. The Government's strategy to make Malaysia a hub for high value added medical devices contract manufacturing has helped to effectively present the excellent capabilities of Malaysia's infrastructure and resources to manufacture high technology products. To date, Malaysia is already at the forefront of the medical devices industry in South East Asia.

The increased number of projects from MNCs has also provided a platform for local companies to support MNCs by supplying medical device parts and components as well as providing services such as sterilisation, packaging and testing. In addition, the existence of MNCs in Malaysia has encouraged good collaboration with local universities and research institutes for the development of novel products and human resources.

All in all, the Government has developed a comprehensive local supply chain consisting of both global and local industry players. In addition, the existence of strong medical devices supporting industries ranging from sterilisation services, sterile medical packaging, precision engineering, tool and die



making to contract moulding and assembly, machinery fabrication and electronics manufacturing services, has also positioned Malaysia as an outsourcing destination and a medical device manufacturing hub within ASEAN.

With the rise of our local vendors, Malaysia is confident that more foreign companies will be attracted to invest in the country and avail themselves to the already established supply chain and ecosystem that have been nurtured over the years. In this regard, MIDA in collaboration with SME Corporation Malaysia, organised a supply chain programme for the medical devices industry in 2016. MIDA has also established a Medical Device Investment Advisory Panel (MDIAP) to drive this industry further to the next level.

The focus areas include electromedical equipment, cardiovascular devices, orthopaedic devices, in-vitro diagnostic products, wound care products, contract manufacturing for R&D, medical devices and equipment, and products from a convergence of technologies. Through this platform, Malaysia aims to better facilitate Malaysian-based companies to achieve their goals in becoming global champions.

In addition, the Government has established a National Export Council comprising 12 sectors, including medical devices. This council defines the roadmap to sustain export growth. Under the focus group for the medical devices industry, the export of medical devices is projected to increase to RM27.3 billion by 2020 with a cumulative annual growth rate of 12 per cent.

MIDA has also initiated several studies related to talent development, technology advancement and industry development to further promote the medical devices industry in Malaysia. The approved projects in 2016 are in line with the industrial development target under 11MP. From the total number of workers employed for projects approved in 2016, 1,082 will be in the managerial, technical and supervisory categories and 380 of those employed will obtain salaries of RM5,000 and above per month.

Out of 41 projects approved, 30 (73.1%) are export-oriented with export percentages of 80 per cent and above. There are also 37 projects (90.2%) that will manufacture high value added medical devices with the value add of more than 40 per cent. This shows that most of the

projects approved are of quality and knowledge-based, and expected to contribute hugely in export earnings. This also means that the Government is on track to achieving its goal of becoming a high-income nation by 2020.

## PHARMACEUTICALS

The global market size for pharmaceutical products was expected to reach US\$1.2 trillion by 2016. The emerging segments are biologics and generics. Annual global spending growth of medicines was anticipated to grow to US\$70 billion in 2016, driven by volume growth in emerging markets and higher spending by developed nations. This increase is being driven by rising incomes and macroeconomic expansion, and increasing access to medicines supported through a range of government policies and programmes.

The current pharmaceutical products manufactured in Malaysia focus on generic drugs. About 65 to 80 per cent of the medicines need to be imported, especially new generation antibiotics, cholesterol-lowering, anti-diabetics, cardiovascular and anti-cancer drugs. The main countries we are importing from are Germany, France and the United Kingdom.

Malaysia has more than 50 pharmaceutical companies which have the capability to produce generics in almost all dosage forms, including sterile preparations, injections, and soft gelatin capsules for antibiotics, injectables, painkillers and health supplements.

As of 2016, a total of 258 manufacturing facilities were licenced by the Drug Control Authority (DCA), Ministry of

Health Malaysia, categorised by 149 (57.7%) types of traditional medicine, 87 (33.7%) pharmaceuticals and eleven (4.3%) veterinary products, eight (3.1%) traditional health supplements and three (1.2%) health supplements. A combined total of 24,228 pharmaceutical products has been registered with the DCA, constituting traditional medicines (51.5%), prescriptions (28.3%), non-prescriptions (16.7%), health supplements (3.8%) and veterinary medicine (0.3%). Apart from supplying pharmaceutical products to the domestic market, pharmaceutical companies in Malaysia are actively exporting their products such as medicaments, pro-vitamins and antibiotics to consumers in South East Asia, Africa and the Middle East. Export growth has been steady at 10 to 12 per cent annually. In 2016, exports of pharmaceutical products were valued at RM1.5 billion.

A total of 9 projects with investments of RM916.3 million were approved in 2016. Of these, five were expansion/diversification projects with investments of RM723.6 million (68.1%) and four were new projects with investments of RM292.7 million (31.9%). Foreign investments amounted to RM644.2 million (70.3%) while domestic investments

totalled RM272.1 million (29.7%). These projects are expected to generate employment opportunities for 570 people.

Among the significant projects approved were:

- A project by a wholly foreign-owned company with total investments over RM1 billion to manufacture insulin and analogues, therapeutic rDNA proteins-insulins and analogues and monoclonal antibodies as well as the first Malaysian made recombinant human insulin. This project also includes an integrated full-fledged R&D centre employing over 40 Malaysian scientists to accelerate drug discovery and research in developing biosimilar biopharmaceutical products in order to further support the growth of Malaysia's Biotech R&D arena. At present, the project employs approximately 400 local graduates in both science and technical (S&T) fields with an S&T index of 87 per cent. With the commercialisation of the project, potential foreign exchange savings accrue to the Malaysian economy with the supply of locally manufactured product for diabetics.



- A wholly foreign-owned company has committed an investment of RM201 million to manufacture generic drugs. This project will build a R&D centre and manufacturing facility in accordance with US Food & Drug Administration standards. The project will create employment for 176 people, including 144 Malaysians in science and technical fields, namely pharmacy, biology and chemicals. This will be the first pharmaceutical project in Malaysia that will penetrate the US market. The company is also collaborating with local universities such as Universiti Malaya, Universiti Kebangsaan Malaysia and Universiti Sains Malaysia to obtain the required skills sets.
- An expansion project by a Malaysian-owned company with an investment of RM117.8 million to manufacture intravenous solutions and irrigation solutions. This project is expected to train more graduates from local universities, especially in technical skills. The project has identified approximately 100 local vendors for vendor development programmes in various areas such as logistics, packaging, components, raw materials, engineering and electricals.

The pharmaceutical industry in Malaysia was previously dominated by local players. However, in the last three years, there have been increased interest from foreign players to establish their own pharmaceutical companies in Malaysia. Participation from foreign players to manufacture complex pharmaceutical products and ingredients has

benefited the pharmaceutical industry locally, especially in transferring technology via collaboration with local research institutions for research and development activities as well as developing local talents.

In the 11MP, strategies on new directions for the halal pharmaceutical manufacturing industry are expected to set a high value and identity on the diverse and complex products. Malaysian manufacturers are also adopting these strategies and moving into halal pharmaceutical production by increasing compliance to standards, certification, and testing which will create greater market access.

The establishment of new pharmaceutical facilities by foreign players to cater for the ASEAN market will make Malaysia their manufacturing hub and further develop the industry through the branding of Malaysian-made pharmaceutical products. This will also encourage the existing local players to move forward in upgrading their current operations to fulfill market demand for such products. MIDA has established the Pharmaceutical Investment Advisory Panel (PharmIAP) to provide strategies to the Government and Ministry of International Trade and Industry for the development of the pharmaceutical industry to the next level of capability and competitiveness. The focus areas are biopharmaceuticals/ biologics such as vaccines and biosimilars, oncology drugs, new chemical entities, active pharmaceutical ingredients (APIs), pharmaceutical excipients/chemicals and phyto-medicines.

Moving forward, MIDA will embark proactively in coordinating collaboration

between research institutes/ universities and industry on R&D activities, commercialisation of R&D findings as well as talent development.

A number of research institutes/ universities have been identified for this initiative. In addition, MIDA has initiated several studies related to talent development, technology advancement and industry development to further promote the pharmaceutical industry in Malaysia. The outcome of this initiative will enhance the capacity and capability of the industry in human capital development and productivity.

The trend in the technology development of the pharmaceutical industry in Malaysia is moving from generic drugs to frontier and complex drugs, namely biologics such as vaccines and biosimilars, APIs and oncology drugs. With the regulatory framework, standards, compliance and mutual recognition agreement, Malaysian pharmaceutical manufacturers are able to access new emerging markets such as the Organisation of Islamic Cooperation (OIC) countries, Sri Lanka, Vietnam, Thailand and Indonesia.

Of the total employment of projects approved in 2016, 345 staff (60.5%) are in the managerial, technical and supervisory categories and 155 staff (27.2%) with expected salaries of RM5,000 and above per month. Out of nine projects approved, five (55.6%) are export-oriented with export percentages of 80 per cent and above. All approved projects manufacture high value-added pharmaceutical products with a value add of more than 40 per cent, a clear reflection that the approval trend is moving towards the manufacturing



of complex and frontier pharmaceutical products in Malaysia with high value-added content.

## BIOTECHNOLOGY

Malaysia is one of the 17 mega-diverse countries identified by the United Nations Environment Programme (UNEP) as possessing the majority of earth's species, which may have immense benefits for the future generations. Since Malaysia is well-endowed with natural resources in agriculture, forestry and minerals, it is a front-runner to embrace biotechnology as the new economic engine for sustainable development.

By 2020, the Government envisages that this sector will employ up to 160,000 workers and will be able to contribute no less than five per cent of the nation's GDP. The sector is also expected to generate RM248 billion in revenue by then.

Platform technologies in biotechnology such as genetic modification, DNA sequencing, bioinformatics and metabolic pathway engineering have commercial uses in several application fields. Human health applications include therapeutics, diagnostics, pharmacogenetics to improve prescribing practices, functional foods and nutraceuticals, and some medical devices. Industrial applications comprise the use of biotechnological processes to produce chemicals, plastics and enzymes. In environmental applications, it is used in bioremediation and biosensors, methods to reduce the environmental effects or costs of resource extraction, and the production of biofuels. It is estimated that approximately half of the current global production of major foods, feeds and

industrial feedstock crops is likely to come from plant varieties developed by using biotechnology processes. These biotechnologies include not only genetic modification but also intragenics, gene shuffling and marker assisted selection. Biotechnology is also used to improve livestock for dairy and meat products which contributes to the development of animal varieties that can produce valuable pharmaceuticals or other compounds in milk. In health, biotechnological knowledge will play a role in the development of all types of therapies.

In 2016, 18 biotechnology projects had received the BioNexus Status and four projects were approved for the Manufacturing Licence under the Industrial Coordination Act, 1975, with total investments of RM464.9 million.

New investments in the biotechnology subsector continued to grow with the largest percentage coming from the domestic front with investments totalling RM408.1 million (87.8%), while foreign investments contributed to RM56.8 million (12.2%) of the total approved investments for 2016. These approved projects are expected to create a total of 776 job opportunities.

Among the significant projects approved was new one by a wholly Malaysian-owned company with an investment of RM35.9 million to manufacture biological and regenerative-based medical products and derivatives. It will be the first project in Malaysia using stem cells for therapeutic treatment. This project will provide a new platform for collaboration between the company and local universities for R&D in stem cell-based products. The project will also encourage the

development of Intellectual Properties to be registered in Malaysia.

It will also create spin-off effects in value chain development for sourcing of local raw materials, equipment, packaging and consumables. The emerging biotechnology will be influenced by public research support, regulations, intellectual property rights, and social attitudes.

The public sector is a major player in health biotechnology and accounts for a notable share of research for primary production by universities or government research institutes. The Government's strong commitment and involvement in the development of biotechnology in Malaysia is a clear indication that it is serious in making biotechnology as one of the main pillars of economic growth. The National Biotechnology Policy is seen to be very promising as it comprehensively covers various aspects that are required for the development of this nascent biotechnology industry. The development of the biotechnology industry in Malaysia will instill not only an increased awareness of science and technology in wealth creation and well-being of the nation, but will also spur new discoveries through advanced research and development on our fast diminishing flora and fauna for efficient use in agriculture, health and industry.

As the first country in Southeast Asia to launch a bioeconomy initiative, Malaysia is providing an effective and conducive platform to build a local bio-based industry. This includes activities in food crops, aquaculture, food processing, medical devices, bio-based chemicals, bio-cosmeceuticals, wellness and pharma-nutrition which offer strong potential

to maximise our country's rich biodiversity and place Malaysia on the forefront of the global bio-based industry.

MyHSR Corporation Sdn Bhd, which is responsible for the development and promotion of the High Speed Rail (HSR) project, is tasked to develop the framework for the HSR corridor. Leveraging on the HSR line, socio-economic development will also be enhanced along the HSR corridor. The geographical concentration of clusters of businesses and employees will result in an enlarged pool of specialist skills in labour and talent. One of the business clusters identified along the HSR line is bioeconomy and a centre for healthcare clinical research and development (R&D) as well as testing will be established. This has the potential to propel Malaysia into a regional biotechnology manufacturing hub.

## AGRICULTURE AND FOOD PROCESSING

### Agriculture

The agriculture sector comprises aquaculture and marine fisheries; cultivation of crops, fruits and vegetables; floriculture; ornamental fish farming; livestock farming; and apiculture. Livestock, fisheries, fruits and vegetables are the major subsectors with significant linkages to the Malaysian food processing industry.

Under the 11MP, the agriculture sector is expected to grow at 3.5 per cent annually, contributing 8.2 per cent to total GDP. The agro-food subsector is expected to grow at 5.4 per cent per annum with livestock, aquaculture and vegetable as the main contributors. The subsector will be transformed into a high income

and sustainable industry through innovative R&D and modernisation initiatives.

### Livestock Farming

Poultry and beef are the main products in the livestock subsector. Improvements in rearing and farming methods have contributed to higher productivity in poultry farming and new discoveries for animal vaccines have resulted in lowering risks to diseases that can affect productivity. Although Malaysia is self-sufficient in poultry and eggs, a large percentage of the domestic demand for beef and mutton continues to be imported. Malaysia's total exports of live animals and meat in 2016 amounted to RM859.2 million while total imports amounted to RM3.4 billion.

### Fisheries

The fisheries' sub-sector in Malaysia can be categorised into marine capture fisheries and aquaculture. Aquaculture remains the fastest growing segment in this sub-sector, with an estimated annual production of 500,000 metric tonnes. Malaysia's total exports of fish and other seafood in 2016 amounted to RM1.8 billion while total imports amounted to RM2.6 billion.

### Vegetables and Fruits

In 2016, exports of vegetables and fruits amounted to RM1.3 billion. Most of the local produce consisted of fresh vegetables and fruits such as durian, banana and pineapple. Imports mainly comprised temperate fruits such as apples, grapes and oranges. Total imports of vegetables and fruits for the same period amounted to RM6.1 billion.

### Projects Approved in 2016

In 2016, a total of 16 agricultural projects were approved with investments amounted to

RM69.4 million. All these projects were from domestic investments. Of these approved projects, six were new projects and ten were expansion/diversification projects. The approved projects were in subsectors such as cultivation of fruits and vegetables, aquaculture as well as deep-sea fishing.

Among the major approved projects were:

- A new project by a wholly Malaysian-owned company with an investment of RM49.9 million to cultivate coconut in Johor.
- A new project by a wholly Malaysian-owned company with an investment of RM6.2 million to cultivate herbs and spices in Johor.

### Food Processing

This subsector comprises all value-added activities which utilise agricultural or horticultural products. Transformation in the food industry from conventional processes into processes utilising emerging technologies is in line with the industry's developments globally.

In 2016, total food exports amounted to RM18.4 billion while total food imports amounted to RM17.1 billion. Among the major items exported were edible products and preparations (RM5.5 billion), cocoa and cocoa preparations (RM4.2 billion), prepared cereals and flour preparations (RM3.0 billion), margarine and shortening (RM1.2 billion) and dairy products (RM1.1 billion).

Major imports were edible products and preparations (RM5.1 billion), sugar & sugar confectioneries (RM3.7 billion), dairy products (RM2.8 billion), vegetables and fruits (RM1.7 billion) and cocoa and cocoa preparations (RM1.4 billion).

The Government has included the food industry as the seventh sub-sector to be part of the National Key Result Areas (NKRA) in addition to the existing six NKRA. This is to address the issue of rising costs of living, whereby the global increase in food prices is now affecting countries all over the world. To ease the people's burden and to address food safety and security, the Government had announced a price control mechanism for most essential goods. This new NKRA includes food and other essential items and its related supply chain.

To achieve this objective, several measures will be undertaken to liberalise the supply chain such as allowing more imported goods and items into the market, utilising idle land for food production and cultivation and acquiring cheaper alternative sources of feedstock.

### Projects Approved in 2016

A total of 46 projects with investments of RM2.4 billion were approved in 2016. The projects approved in the food processing sub-sector including beverages, domestic investments amounted to RM1.8 billion (75%) while foreign investments totalled RM0.6 billion (25%). These projects are expected to generate additional employment opportunities for 5,904 persons.

The approved projects were for the production of seafood products, processing of fruits and vegetables, cereals and flour-based products, chocolate and sugar confectioneries, food ingredients, processed meat products, beverages and other food products.

One significant project approved was a new project by Sunlight Inno Seafood Sdn. Bhd., a wholly Malaysian-owned company with an investment

of RM1.3 billion to undertake an integrated shrimp farming and processing of frozen shrimp with an R&D facility in Pitas, Sabah. The company has been appointed as one of the champion companies under EPP 6: Integrated Zone for Aquaculture Model (IZAQs) to Tap Market for Premium Shrimp. IZAQs comprises industrial scale and land-based aquaculture zones with each zone, equipped with integrated infrastructure consisting of hatcheries, grow-out areas, a processing plant and feed mill. This project is expected to create 3,800 jobs.

### OIL PALM PRODUCTS

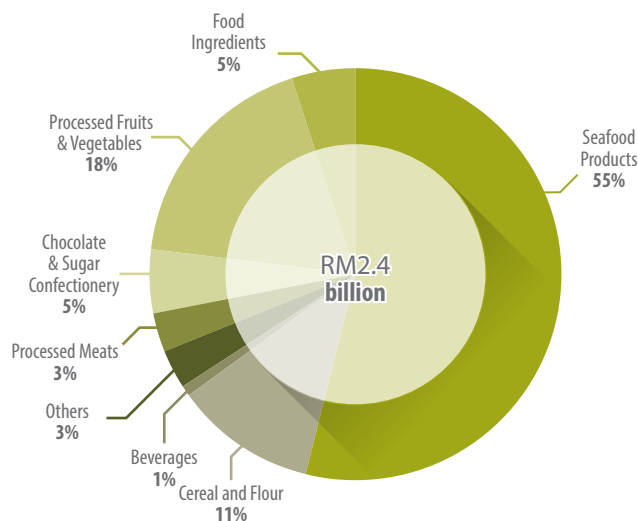
The oil palm products industry comprises palm oil, palm kernel oil, oleochemicals and derivatives (including biodiesel) and products from palm biomass (including energy generation). Malaysia's palm oil industry remains one of the most important industries for the country. It is also the fourth largest contributor to the national economy and the Palm Oil NKEA has a targeted GNI of RM178 billion by 2020. Indonesia remains the largest producer of palm oil in the

world while Malaysia is one of the largest exporters.

The major consumers of palm oil are PRC, India and Europe. Being one of the biggest producers and exporters of palm oil and palm oil products, Malaysia assumes an important role as a supplier of palm oil to sustainably fulfill the global need for oils and fats. Based on MPOB Data 2016, production of crude palm oil (CPO) for 2016 was reduced to 17.3 million tonnes from 20.0 million tonnes in 2015. Production of crude palm kernel oil and palm kernel cake also dropped to 12.0 million tonnes and 2.2 million tonnes (2016) from 2.3 million tonnes and 2.5 million tonnes respectively in 2015.

The states of Sabah, Sarawak and Johor are the main producers of crude palm oil. The utilisation rates of palm oil mills and palm kernel crushers in 2016 were 77.8 per cent and 59.5 per cent respectively while the refining capacity of palm oil refineries were 59.4 per cent and oleochemicals 84.6 per cent respectively.

Approved Investments in the Food Processing Industry by Subsector, 2016



Exports of Malaysian oil palm products in 2016, which comprised palm oil (crude palm oil and processed palm oil), palm kernel oil, palm kernel cake, oleochemicals, biodiesel, and other palm products, amounted to 22.8 million tonnes with an export value of RM62.5 billion compared to the year 2015 with exports valued at RM58.4 billion and 24.9 tonnes. India was the largest importer of Malaysian palm oil in 2016 followed by European Union and PRC.

### Projects Approved in 2016

In 2016, a total of 44 projects with investments of RM2.12 billion were approved for the production of oil palm products compared with 73 projects with investments of RM2.15 billion in 2015. These projects included palm oil and palm kernel oil products, oleochemicals, products from palm biomass and energy generation from palm biomass. Foreign investments amounted to RM1.3 billion while domestic investments totalled RM864.4 million.

The palm oil and palm kernel oil subsector recorded the highest investments of RM949.7 million followed by oleochemicals (RM557.1 million), energy generation projects from palm biomass (RM335.8 million) and products from palm biomass (RM275.7 million).

### Palm Oil and Palm Kernel Oil

Refining and crushing are the main activities in this sub-sector. Currently, there are 52 refineries and 45 crushing plants in operation with a total capacity of 26.3 million tonnes and 7.3 million tonnes per year respectively. The refineries processed a total of 14.2 million tonnes of crude palm oil and 1.4 million tonnes of crude palm kernel oil while the crushing plants processed 4.3 million tonnes of palm kernel. The main

products produced are refined, bleached and deodorised (RBD) palm olein and stearin. Other products include margarine, vanaspati and specialty fat products.

### Projects Approved in 2016

In 2016 nine projects with investments of RM949.7 million were approved for the palm oil and palm kernel oil products of which, four were new projects and five others were expansion/diversification projects. Foreign investments amounted to RM635.2 million while domestic investments totalled RM314.5 million.

A significant project approved was a new project by Unigra Food Process Asia Pacific Sdn. Bhd. a wholly foreign-owned company from Italy with investments of RM308.7 million to produce high value added palm oil products such as cocoa butter equivalent/replacer/substitute. The project is their first factory outside Italy.

### PALM BIOMASS

Six types of oil palm biomass are produced as by-products of the palm oil industry: oil palm fronds, oil palm trunks, empty fruit bunches, palm kernel shells, mesocarp fibre and palm oil mill effluent.

Malaysia could benefit from an additional RM30 billion contribution to GNI and 66,000 incremental jobs by utilising biomass from the oil palm industry for higher value-added downstream activities. The country is expected to generate 100 million dry tonnes by 2020 (excluding palm oil mill effluents).

### Projects Approved in 2016

In the palm biomass products subsector, 14 projects with investments of RM275.6

million were approved in 2016 compared with 15 projects with investments of RM397.2 million in 2015. Domestic investments amounted to RM175.4 million while foreign investments totalled RM100.2 million. The approved projects were for the utilisation of empty fruit bunches and oil palm trunk to produce bio-coal, pellets, fibres, plywood and veneers.

Refining and crushing activities have reached maturity levels in the country and are no longer promoted as growth areas. Significant opportunities, however, exist in downstream activities that can generate high value-added products and in the palm biomass subsector. In downstream activities, the growth areas are in oleochemical-based products and nutritional foods and ingredients as well as R&D activities which generally involve high levels of technology.

### PETROLEUM PRODUCTS (INCLUDING PETROCHEMICAL PRODUCTS)

Malaysia, having the world's 16<sup>th</sup> largest natural gas reserves and 26<sup>th</sup> 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.



## CHEMICAL & CHEMICAL PRODUCTS

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.

## PLASTICS INDUSTRY

Plastics play one of the major roles in providing various facets of modern life that we enjoy today. Not only we see plastics in simple everyday life, the industry has delivered bountiful benefits to many advanced technologies that we see today in the form of high performance plastics mainly used in the automotive, aerospace and medical sectors.

The plastics sub-sector saw a total of 46 projects approved in 2016 with investments of RM1.55 billion. A total of 24 of these are new projects with investments totalling RM1.25 billion while the rest were expansion and diversification projects with investments of RM303.3 million. A total of 25 approved projects were wholly Malaysian-owned (RM318.8 million), 12 projects were wholly foreign owned (RM1.03 billion) and the remaining nine projects were joint-ventures (RM204.2 million). A total of 3,015 new jobs are expected from

these projects in the plastics subsector.

In line with the booming phase of technology, the plastics industry continues to grow. One of the main contributors for the rapid growth is nanotechnology. It has revolutionised the plastics industry and simultaneously allowed a brighter future coming from advanced chemical and plastic industry hybrid products. Nanocomposites as additives in plastic have been proven to further improve the physical properties of traditional plastics. The offspring of the industry breed is tougher, more heat, dent and scratch-resistant, which means that overall it is far more superior than its precursor.

Plastics used to be known as a menace for the environment. However, with the advancing technology, this industry is ready to change this negative perception. As new studies reveal, waste plastic bags can be processed into a high-tech nanomaterial. The breakthrough in this innovation uses non-biodegradable plastic waste to synthesise 'carbon nanotube membranes'. This material is highly valued due

to its versatility of functions in advanced applications ranging from energy storage, filtration, and also biomedical products.

The innovations are made possible by various government policies and incentives. To avoid existing plastic manufacturing activities from being labelled as sunset operations, the government has also devised new incentives for companies to invest in automation for their production. This initiative will reduce their dependency on unskilled workers and simultaneously boost their productivity. With the continuous dip in the crude oil price, the plastic industry is predicted to flourish as manufacturers take advantage of this price situation to produce higher value-added products.

## OLEOCHEMICALS

Efforts to get the oleochemical sector move up the value chain and introduce high-end palm-based products are coming to fruition through the implementation of Entry Point Project (EPP) 6 under the Palm Oil National Key Economic Area.

As one of the world's largest basic oleochemical producers, Malaysia is gradually shifting into production of higher value-added oleochemical derivatives and bio-based chemicals. Malaysia's abundance of local raw materials and the availability of technology development in the oleochemical industry have spurred companies to produce specialty palm oil-based products such as surfactants, bio-lubricants and glycerol derivatives for the green chemicals and biodiesel industries.

Total investments of RM580 million were approved in 2016

for nine oleochemical projects, which are estimated to generate 372 new job opportunities. Of the nine projects approved, four were new projects.

Over 80 per cent of these investments were from foreign sources (RM463 million) while the rest came from domestic sources (RM117 million).

More oleochemical companies are looking towards expansion and diversification of existing plants as most have been in operation for almost two decades. Retrofitting and upgrading of the machineries and equipment are necessary to ensure efficiency, consistency as well as better performance for the next 10 years. Despite threats of basic oleo overcapacity, lower palm oil yield due to El Niño and low petrochemical prices, oleochemical products will continue to generate interest and demand as safe and sustainable green chemicals.

## RUBBER PRODUCTS

The Malaysian rubber products industry has evolved through the years and transformed itself towards higher value added, better and 'greener' technology as well as constant increase in automation. The rubber products industry can be categorised into latex products, tyres and tyre-related products as well as industrial and general rubber products, with the industry itself dominated by small and medium enterprises (SMEs).

In 2016, a total of RM1.09 billion was invested into 13 approved projects (excluding medical devices). Eight of these were new projects with investments of RM674 million while the rest were expansion/diversification projects with

investments totalling RM414 million. About 21 per cent of this total investments came from domestic sources (RM224 million) while the foreign sources made up the majority (RM864 million). Four of the approved projects were wholly Malaysian-owned (RM12 million), three projects were wholly foreign-owned (RM429.5 million) while the rest were joint-ventures (RM646.8 million). The investments made were mainly in rubber extruded articles, moulded rubber products, EVA sheeting and passenger and commercial tyres. The approved projects are expected to create 2,275 employment opportunities.

Malaysia's advantage on R&D of rubber has enabled the industry to remain competitive. Ventures in specialty and 'green' rubber products, as well as government's initiatives to accelerate automation in the manufacturing process has resulted in better quality products and improved productivity. These outcomes have put the rubber product industry in Malaysia as an example of rubber industrialisation at its best.

## WOOD & WOOD PRODUCTS

Malaysia's wood-based subsector has become one of the most important subsectors in the country over the last two decades. The industry is predominantly owned by Malaysians, with about 87 per cent of the companies comprising small and medium scale manufacturers. Over the years, it has developed from a primary processing industry to a more advanced and technology-driven industry producing a significant number of downstream value-added products.

## Projects Approved in 2016

A total of 57 projects were approved with investments of RM678.1 million, of which 41 were new investments amounting RM560.8 million and 16 were expansion/diversification projects with investments of RM117.3 million. Domestic investments accounted for RM526.3 million while foreign investments totalled RM151.8 million. These projects are expected to create 2,579 employment opportunities.

The furniture subsector recorded the highest investments in 2016. This subsector attracted investments RM160.7 million in 25 projects. Of these 15 were new projects with investments of RM87.2 million while the remaining were expansion/diversification projects worth RM73.5 million. One significant project approved was by LY Furniture Sdn. Bhd. with an additional investment of RM17.6 million. Today LY Furniture has 15 factories with a total factory floor area of 1.2 million sq ft and employing 1,200 workers. LY Furniture is one of the largest wooden bedroom set manufacturers in Malaysia. Domestic investments accounted for RM137.8 million of total investments in this subsector while foreign investments of RM22.9 million made up rest.

The panel products subsector and the mouldings and builders' carpentry and joinery sub-sector each attracted six and two projects respectively with approved investments of RM73.3 million and RM77.9 million. In addition, 24 projects with investments of RM366.2 million were approved for the manufacture of other wood-based products and materials such as wood pellets, sawn timber and agriculture waste.





## PAPER, PRINTING AND PUBLISHING INDUSTRY

The paper, printing and publishing industry encompasses the manufacture of pulp, paper, paper products as well as printing and publishing activities. The paper subsector covers the production of medium paper, test liner, newsprint, printing and writing paper, tissue paper, joss paper as well as specialty paper. The paper products subsector consists of packaging products such as corrugated cartons, inner packaging and cushioning materials, labels, stickers and disposable diapers. The printing and publishing sub-sector includes all printing of packaging materials, books, magazines, security documents, greeting cards, calendars and other miscellaneous printing activities.

Malaysian paper industry has progressively increased the production capacity. There are 23 paper mills with a total production capacity of about 1.9 million metric tonnes annually. Wastepaper is the main raw materials used by industries to produce their paper products. To date, this industry has provided

employment opportunities to more than 5,000 people.

The domestic printing and publishing industry consists mainly of small and medium-scale domestic-oriented manufacturers. There are currently about 1,000 companies in operation mainly engaged in general printing.

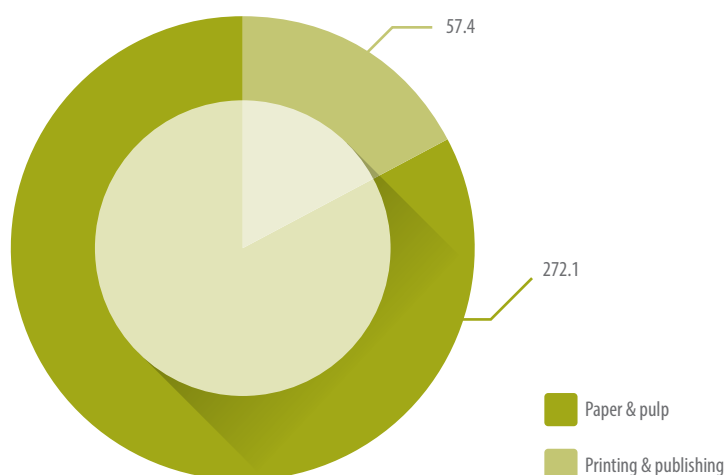
### Projects Approved in 2016

In 2016, a total of 15 projects were approved with investments of RM361.8 million. Of these, eight were expansion/diversification projects with investments of RM209.5 million (58%), while six were new projects with

investments of RM152.3 million (42%). Foreign investments amounted to RM51.2 million (14%), while RM310.6 million (86%) were contributed by domestic investments. These projects are expected to provide employment opportunities to 906 people.

By subsectors, the highest investments were recorded for paper products sub-sector with RM272.1 million (8 projects) and followed by the printing & publishing subsector with RM89.7 million (7 projects).

Approved Investments in the Paper, Printing and Publishing Industry by Subsector, 2016 (RM Million)



## PERFORMANCE OF THE SERVICES SECTOR

### OVERVIEW

The services sector is among the main pillar of the country's economy growth. Its contribution has increased steadily over the years both in term of investments and employment opportunities and will continue to be in a primary role in propelling Malaysia's position from middle income to higher income economy based on innovation and creativity.

The development of the services sector is guided by the Services Sector Blueprint, which was launched in 2015. The 11MP has also placed greater importance for services with strategies formulated to enhance the competitiveness and resilience of the sector. The 11MP, which targeted an increase in export revenue of services sector by more than 40 per cent from RM135 billion recorded in 2015 to RM195 billion.

In addition, to transform the services sector, specific targets to increase value added per worker from RM55,574 in 2013 to RM74, 101 in 2020, raising the contribution of knowledge driven sub-sectors to the GDP from 36 per cent in 2014 to 40 per cent in 2020, and increase the share of services exports value added from 12 per cent in 2010 to 19 per cent in 2020.

The development of the services sector will be guided by the Services Sector Blueprint, launched in 2015. The Blueprint aims to unlock the potential of the sector and transform it to become more knowledge-intensive and innovation-led. The services sector is expected to grow at 6.8 per cent per annum and contribute 56.5 per cent per cent to the GDP in

2020, and provide 9.3 million jobs.

In 2016, a total of 4,199 projects in services sector were approved amounting to RM141.2 billion. Of this, domestic investment amounts to RM112.9 billion, with foreign investment contributing RM28.3 billion.

Within the services sector, the real estate subsector continues to lead with total investment of RM64.1 billion, followed by financial services at RM13.7 billion, utilities at RM10.6 billion and distributive trade at RM9.3 billion.

As Malaysia moves towards becoming a developed nation, government has drawn up the framework for the New Economic Model. Under this model, efforts will be intensified to target and attract industries in which Malaysia has strong foundations for new growth areas. The services sector assumes an increasing share of GDP as the economy matures, as is evident in the case of developed countries.

Over the past several Malaysia Plans, the services sector in the country have undergone many changes through strategies which include liberalisation, human capital development and regulatory reforms. A more pervasive transformation is expected through Eleventh Plan, which will see the services sector transformed into a more knowledge-intensive and productivity driven growth. Specific sectoral strategies will unlock greater growth potential in the sector. Henceforth, the services sector will attract higher private investment, enhance services exports and create more high income jobs in line with the national aspiration to become an advanced and inclusive nation.

### GLOBAL OPERATING FOOTPRINT IN MALAYSIA

Driven by escalating cost, global demands and rising competition, multinational corporations (MNCs) are now adopting the Principal Hub model which allows faster decision making and supports evolving supply chain trends.

Located in the heart of ASEAN, Malaysia is a strong economic powerhouse and offers MNCs access to a growing talent pool, business ecosystem, world-class infrastructure and connectivity, competitive cost advantage and a tax incentive package that cater to their growing business model needs.

Today, Malaysia's ranking has morphed to compete on an equal footing as a leading location for MNCs to set up their regional base by shifting their headquarters to tap across the region.

### TRENDS TO WATCH

Logistics as a key component in providing total supply chain solutions to businesses, is a key focus area for Malaysia.

Today, as orders become more complex and the variety of goods increases, going digital is becoming imperative. Looking ahead, value chains disrupted by evolving technologies through e-Commerce platforms will significantly propel the new wave of doing business.

Although the bridge that has been connecting the virtual marketplace with the physical movement of goods is logistics, moving forward it will expand its scope to complement this explosive growth of e-Commerce in Malaysia when going seamless will be pivotal.

Accelerating forward with the growing appetite by consumers for customised high value products will drive demand for e-Fulfilment centres.

With the projected double digit growth of e-Commerce in the region, Malaysia is well poised to play a powerful role to spur the transformation of the existing digital landscape in charting the path to achieve Malaysia's National e-Commerce Strategic Roadmap.

### PERFORMANCE BY INDUSTRY: GLOBAL ESTABLISHMENTS APPROVED

In 2016, a total of 1,952 global establishments projects have been approved by MIDA. Of these establishments, 999 are Representative Offices (REs), 620 are Regional Offices (ROs), 166 are Operational Headquarters (OHQs), 36 are Global Operations Hubs, 26 Regional Distribution Centres (RDCs), 75 are International Procurement Centers (IPCs), 11 are Treasury Management Centers (TMCs) and 19 are Principal Hubs.

*\*NOTE: Effective 1st May 2015, new applications for status and incentive for Operation*

*Headquarters (OHQs), International Procurement Centers (IPCs) and Regional Distribution Centers (RDCs) will not be considered as these Schemes have been streamlined by the introduction of the Principal Hub Incentive Package as announced in Budget 2015.*

### Principal Hub Incentive (PHI)

In May of 2015, Malaysia introduced the Principal Hub Incentive to attract and encourage MNCs to use Malaysia as a base for conducting their strategic regional and global businesses and operations. These companies manage and control, key functions including management of risks, decision making, strategic business activities, trading, finance, management and human resource to serve their network companies

Since its inception, MIDA has approved 19 Principal Hub (PH) projects with total investment of RM15.1 billion creating 2,343 high value jobs.

In 2016, the country saw 13 new Principal Hubs, with business spending amounting to RM13.8 billion and creation of 1,982 jobs.

### Ansell Global Trading Center (Malaysia) Sdn Bhd

Ansell is a world leader in providing superior health and safety protection solutions that enhance human well-being. With operations in North America, Latin America/ Caribbean, EMEA and Asia, every day, more than 15,000 people in 55 countries design and manufacture products on which millions of consumers, workers and healthcare professionals rely.

Ansell holds leading positions in the personal protective equipment and medical gloves market, as well as in the sexual health and well-being category worldwide. Ansell operates in four main business segments: Medical, Industrial, Single Use and Sexual Wellness.

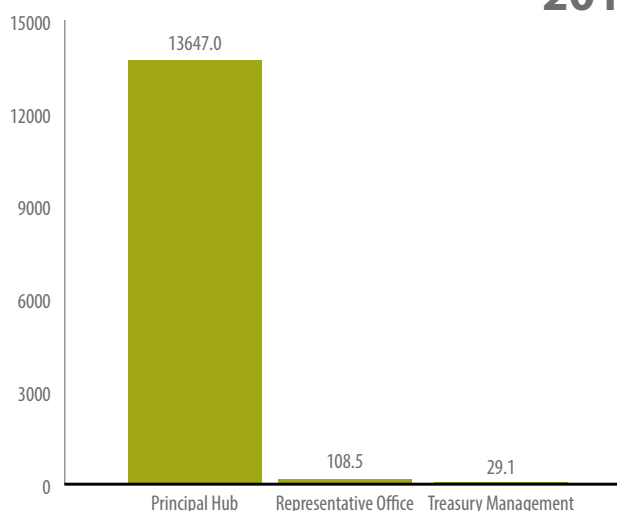
Having established operations in Malaysia since 11 April 2014, Ansell Global Trading Center (Malaysia) Sdn. Bhd. (Ansell GTC) operates as a global procurement & trading base to manage supply planning, procurement and consolidating, shared services and R&D.

### IMI Engineering Sdn Bhd

Norgren, a UK headquartered company which is listed under the London Stock Exchange, started its operation in Malaysia in 1995 as a distribution arm for sales, marketing and distribution of parts and components of pneumatic systems and air equipment.

As a subsidiary company of the IMI Group, IMI Engineering Sdn. Bhd. is a specialist engineering company that designs, manufactures, and services highly engineered products that control precise movement of fluids. The Group consists of three divisions; IMI Critical Engineering, IMI Precision Engineering and IMI Hydronic Engineering. The

Value of Business Spending in RM mil





Group employs over 12,000 employees and operates in over 50 countries worldwide.

IMI Engineering Sdn. Bhd. is ideally set up to support five key focus markets, which are commercial vehicles, life sciences, energy, food and beverages and industrial automation.

The company's main clients includes the Petronas Group, Malaysia LNG Sdn Bhd, Agilent Technologies Singapore (International) Pte Ltd, TNB Janamanjung Sdn. Bhd. and Transwater API Sdn. Bhd. The total revenue for the company in 2015 was RM 11.7 million.

#### **Pacific Inter-Link Sdn Bhd**

Pacific Inter-link Sdn Bhd (PIL), a Malaysian company incorporated in Kuala Lumpur on 22 June 1988 to promote the export of palm oil and related products to the Middle East, has grown into a multi-billion dollar organisation to become a top global player in the field of palm oil products and consumer goods.

Being an export-focused company, PIL's has presence in more than 70 countries worldwide with a significant foothold in South East Asia, the Middle East and Africa.

Over the next decade, through its principal hub in Malaysia, the company's investment of RM3.6 billion is a reflection of its confidence in Malaysia as a regional hub for commodity-based companies.

#### **Nestrade S.A.**

Nestlé Group began its footprint in the country 104 years ago, since 1912. Nestle Malaysia began its operations in Penang through the Anglo-Swiss Condensed Milk Company and later moved to Kuala Lumpur in 1939. In 1962, Nestlé started

its first factory in Petaling Jaya, Selangor, and currently Nestlé has a total of eight factories across Malaysia. Today, the company has approximately 5,900 employees in Malaysia of which at factory levels are 100 per cent Malaysians.

Nestlé Malaysia is listed on the Kuala Lumpur Stock Exchange and exports its products to over 50 countries in Asia, Middle East, Africa, Europe and America and is also known as the Global Halal Centre.

Nestrade S.A. a company under the Nestlé Group which offers integrated trading solution to Nestlé factories worldwide. In 1977, Nestlé World Trade Corporation (WTC) has been established to support the development of Nestlé affiliates in existing and new markets through the export of Nestlé products. The function and role of WTC was subsequently reviewed and in 2003, WTC changed name into Nestrade S.A.

Over the years, Nestrade S.A., headquartered in Switzerland, has managed the import & export of Nestlé products in specific countries and well as the procurement of some technical equipment, ingredients and raw materials.

In order to service procurement needs of Nestle group with best value proposition, three Centre of competences are being set up, covering the global business operations. This will be under the expanded scope of Nestrade S.A. Head quartered at Switzerland, with two hubs at Malaysia and Panama will cover 60 per cent of the group procurement spend, optimizing the ability, efficiency and effectiveness of sourcing of materials and services for the group.

Nestrade S.A. through three global hubs (Switzerland, Panama and Malaysia) will provide specialist procurement services on category management and functional enablement supported by transactional activities of source to pay through center of scale, to various Nestlé group companies across 140 countries globally.

#### **IOI Corporate Service Sdn Bhd**

IOI Corporation Berhad is one of the world's largest diversified conglomerates managing oil palm plantations and resource-based manufacturing.

As a full-fledged PH in 2016, the company will focus on strategically managing the group's resource-based manufacturing business segment. The Principal Hub will now support the entire group's chain of oleo chemical manufacturing facilities in Malaysia, USA, Canada, Netherlands and China for strategic sourcing, production planning and distribution. IOI's Principal Hub project marks the global trend of commodity based conglomerates integrating their supply chain to optimise efficiency and competitiveness.

#### **JYC HDD Industries Sdn Bhd**

JCY, a Malaysian company, which started as a supplier of Printed Circuit Board Assemblies (PCBAs) a decade ago, has grown into one of the largest components and parts manufacturers for Hard Disk Drives (HDDs).

JCY's decision to make Malaysia as its regional hub stems from the company's tremendous success in the country so far. Already JCY has a total of 19 manufacturing facilities with 16 of these facilities across Malaysia alone with a workforce of approximately 9,600.



This new PH project will create 82 high value jobs where 80 per cent are expected to be filled up by Malaysian talent which will help groom the capability of Malaysian talent as experts in business, management and entrepreneurial knowledge skills.

Currently JCY's operations in Malaysia engage approximately 350 suppliers who are mainly local suppliers in the areas of raw material, automation, equipment design and fabrication.

Through JCY's 'Grow with Suppliers Approach', local suppliers are prioritised in supplying key materials and components to serve the procurement needs of JCY's global network. This will ultimately boost the competitiveness of local suppliers in meeting international standards and enable them to integrate into the global value chain.

JCY's principal hub will enhance its R&D capabilities on design and development of tools and fixtures to bring better yields, greater efficiency and cost savings as well reduce the reliance on unskilled manpower. The support industries and services are then expected to expand in tandem with these developments. This is in line with Malaysia's vision of becoming a hub for smart manufacturing.

Parallel to JCY's growth, the multiplier effects generated are evident by companies such as JCY having the edge to champion the transformation of the country's existing E&E industry landscape altogether.

#### **Daikin Malaysia Sdn Bhd**

Daikin Malaysia Sdn. Bhd. (DAMA), wholly-owned by Daikin Japan is a world leading

air conditioning company headquartered in Osaka, Japan. The company started its Malaysia operations in 2006 when Daikin Industries Limited (DIL) acquired O.Y.L Group.

Daikin produces a range of Unitary Products (UP) from 7kBtu – 750kBtu suitable for residential to commercial building applications including wall mount, ceiling cassette, ceiling concealed, inverter single split, inverter multi split, static blower and roof top units. Its ultimate holding company, Daikin Industries Ltd was founded in 1924 and the company is mainly involved in designing, manufacturing and selling of commercial, industrial and institutional heating, ventilation and air conditioning (HVAC) products.

Daikin Industries Ltd employs over 60,000 employees and operates in over 180 countries worldwide. Its revenue in 2016 was RM77.3 billion where 89 per cent of its sales were from air conditioning related products.

Daikin's expansion plan includes positioning its operation in Malaysia as the regional hub for its ASEAN activities, with investments amounting to RM200 million over the course of the 10 years.

#### **Lotte Chemical Titan Corporation Sdn Bhd**

Established as Malaysia's first integrated producer of polyolefins and olefins, Lotte Chemical Titan is currently one of the largest chemical producers in South East Asia.

Lotte selected Malaysia as a principal hub to manage their regional supply chain to support coordinated procurement of raw materials to support its manufacturing operations in Malaysia and Indonesia and centralise

worldwide distribution of their end products.

Lotte Chemical Titan's transition from being a sole chemicals manufacturer, through its principal hub will integrates its strategic decisions and operational functions into high end services that would ultimately integrate the entire ecosystem of our local chemical industry.

#### **Avago Technologies (Malaysia) Sdn Bhd**

According to Bloomberg 2016, the acquisition of Broadcom Corporation in 2016 by Avago Technologies amounting to US\$37 billion, marked the largest M&A in global semiconductor history and made the company the third largest fab-less semiconductor giant after Intel and Qualcomm in the world.

Broadcom's Principal Hub operation will consolidate and centralise Broadcom Limited's global manufacturing and distribution activities in Malaysia.

The Principal Hub project will support Broadcom's Limited's integrated global supply chain, production planning, sourcing of components, high – end testing of Broadcom's communication chips, and distribution of final products.

At the same time, Broadcom Limited's 'Global Distribution Hub' will be transferred from Singapore to Malaysia in 2017 and will manage the group's global inventory totaling RM64 billion a year.

The localisation of Broadcom's supply chain control in Malaysia will encourage the growth of support services industries, such as the machinery, logistics and ICT. This initiative opens new business opportunities for

local contract manufacturers in Malaysia's E&E industry, among which are Inari Amertron Berhad, TF AMD Microelectronics and ASE Group. These companies will benefit from technology transfer from Broadcom as the pioneer in the communication chips sector.

Broadcom's Principal Hub project will involve an investment in excess of several MYR billions over the next 10 years and will create at least 200 high value jobs for Malaysians.

### **Wilhelmsen Ship Management Sdn Bhd**

The Wilhelmsen Group is one of the largest companies in the global maritime industry originating from Oslo, Norway that has been shaping the maritime industry for over 155 years. This group of companies provides supply chain management, ocean transportation, terminal handling services and inland distribution and technical services at over 2,200 ports and to more than 50 per cent of the global merchant fleet.

The Group's global operations are present through 310 offices in 71 countries with 23,800 marine professionals.

In 2017, the company was ranked first in the world for Global Car Transport Fleet and fifth in vessels served for top ship management players.

The Group currently operates throughout the world with a total revenue of US\$3.3 billion in 2015.

Through its Principal Hub operations, Wilhelmsen will now carry out activities for the entire supply chain and relocate the key decision making from Norway to Malaysia. This transition will coordinate, integrate and provide efficient

global vessel management activities across the world from Malaysia. The company will invest RM94.6 million over a period of five years.

### **Mcdermott Asia Pacific Sdn Bhd**

IMcDermott (NYSE: MDR) is a leading provider of integrated engineering, procurement, construction and installation (EPCI) services for upstream field developments worldwide. The Company delivers fixed and floating production facilities, pipelines and subsea systems from concept to commissioning for complex offshore and subsea oil and gas projects to help oil companies safely produce and transport hydrocarbons. Their customers include national and major energy companies.

Operating in approximately 20 countries across the world, the company's locally focused and globally integrated resources include approximately 12,400 employees, a diversified fleet of specialty marine construction vessels, fabrication facilities and engineering offices. They are renowned for extensive knowledge and experience, technological advancements, performance records, superior safety and commitment to deliver. McDermott has served the energy industry since 1923.

McDermott relocated their Regional Headquarters from Singapore to Malaysia in 2016. This is in line with the company's focus of operating close to their customers. The new Regional Headquarters provides a full range of corporate, strategic, shared and technical services to their operations and projects in Asia. The move reflects the company's confidence in Malaysia as the preferred regional oil and gas services hub.

## **TREASURY MANAGEMENT CENTRE (TMC)**

### **Panasonic Financial Center (Malaysia) Sdn. Bhd.**

Japanese multinational electronics giant, Panasonic Corporation has a successful foothold in Malaysia via its 21 subsidiaries that undertake a variety of activities such as R&D, manufacturing and procurement and distribution.

The Group has since further diversified its base in Malaysia by being the latest entrant to set up their Treasury Management Centre (TMC) in 2016, to provide treasury and financial support to their 12 Panasonic Group of related companies in 10 countries globally, as well as their 20 existing related companies in Malaysia.

## **SUPPORT SERVICES**

### **Integrated Logistics Services (ILS)**

The strength of the nation's logistics industry lies in Malaysia's strategic location, connectivity, state-of-the-art facilities, the presence of major players in shipping and logistics and more importantly, the country's stable political, economic and social environment.

The logistics industry forms the backbone to the supply chains and is recognised as the key to stimulate trade, facilitate business efficiency and spur economic growth. Given its strategic location, steady economic growth, good regional linkages and strong transport infrastructure, Malaysia has the right foundations and infrastructure to position itself as a regional logistics gateway.

A total of 72 ILS providers have been granted incentives

as at December 2016 with investments valued at RM4.52 billion. A total of six ILSs were approved in 2016, which will incur RM672.6 million in investment and create 765 employment opportunities. The growth of the logistics industry has been robust over the years and the increasing trend is expected to continue into the future.

Based on current approvals of ILS projects, most ILS companies in Malaysia are moving towards integrated operations, ICT-driven innovation (e-commerce) and providing specialised logistics services to support various industrial sectors such as oil & gas and the petrochemical industry.

#### **Steinweg Malaysia Sdn Bhd**

A leading logistics services company, C. Steinweg (Malaysia) Sdn. Bhd specialises in the warehousing, distribution, forwarding, transportation and other value-added services for many types of natural resources, industrial materials and commodities, including hazardous and non-hazardous chemicals.

The parent company, C. Steinweg-Handelsveem B.V. is among the world's largest logistics companies and is headquartered in Rotterdam, The Netherlands.

The company's network covers over 40 countries with more than 100 locations in Western Europe, Asia Pacific, North America, South America, Middle East, Africa, Eastern Europe and the Baltic/Russia.

The company has purchased a land area of 48 acres in Tanjung Langsat Port to develop a state-of-the-art Warehouse Facility and operate an integrated Natural Resources & International Commodities Hub (including hazardous and

non-hazardous chemicals). The company's investment for the project is estimated at RM520 million.

This project will further deepen Johor's appeal as an international trading and distribution hub especially for chemicals and provide a welcome boost to the logistics ecosystem in Malaysia. In addition, Steinweg's presence is expected to attract regional cargo flows to Tanjung Langsat which will accelerate the growth of Malaysia as the regional hub serving neighbouring ASEAN countries.

#### **Infinity Logistics & Transport Sdn Bhd**

Established in 2003, Infinity Logistics & Transport is another leading logistic services company in Malaysia. The company is a Rail Siding Terminal Operator for loading and unloading cargo and containers from rail wagons in Johor, Selangor, Penang, Kelantan and Southern Thailand. Infinity's services include transportation of various steel products and project cargoes via rail.

Infinity was approved a grant of RM4.8 million for the modernisation and upgrading of facilities and equipment under the Domestic Investment Strategic Fund (DISF) for the purchase of '2500HP Diesel-Electric Locomotive'. This grant enables the company to undertake Integrated Logistics Services (ILS) - Landbridge and Cargo Transshipment Services through rail, connecting Malaysia and Thailand. Landbridge service is a train service that connects the ports in Peninsular Malaysia to ports in Thailand. This service ensures faster travel time (whereby it takes only 60 hours to get to destinations) and the safety of goods carried between the two

countries is also more secure compared to when using other modes of transportation.

The purchase with total overall investment of RM49 million is expected to help strengthen and upgrade the quality of Landbridge services between existing networks owned by Keretapi Tanah Melayu (KTMB) and State Railway Thailand (SRT), and support the needs of the local logistics industry, at the same time reducing congestion in Padang Besar.

#### **YCH Logistics Malaysia Sdn. Bhd.**

YCH Group is an integrated end-to-end supply chain solutions provider to some of the world's largest MNCs including DELL, Motorola, Samsung, Exxon Mobil and Unilever. Headquartered in Singapore since 1955, this Group is recognised as being a leading Seventh-Party Logistics (7PL) provider. Today, the YCH Group employs more than 5,000 employees worldwide and has supply chain hubs located in more than 100 locations across Asia Pacific serving customers across industry clusters such as fast moving consumer goods, electronics, chemicals and healthcare and e-Commerce.

YCH Logistics Malaysia Sdn. Bhd., the Groups first overseas venture, was established in 1988 and operates as a logistics service provider involved in freight forwarding, transportation, warehousing and distribution activities.

YCH Logistics Malaysia's newly set up e-Commerce Fulfillment Hub, located in Shah Alam, offers specialised warehousing, order fulfillment, shipping logistics and last-mile delivery activities. The company provides full fledged e-fulfilment services through this hub to cater to their clients.

### **International Integrated Logistics Services (IILS)**

IILS is a status granted to a logistics company that provides integrated and seamless logistics services (door-to-door) along the logistics value chain as a single entity on a regional or global scale. A Customs Agent License will be issued to qualified IILS companies.

In 2016, a total of 21 companies were approved with IILS status as compared with 14 IILSs approved companies in 2015. Of these companies approved, a total of 18 were Malaysian-owned.

### **Representative Offices (RE)/ Regional Offices (RO)**

Malaysia is a base for REs and ROs to coordinate and support their operations in the Asia Pacific region. Subsequently, the establishment of these REs and ROs will provide opportunities for the companies to set up regional operations in the future.

These REs/ROs were established as a stepping stone to undertake feasibility studies on investment opportunities in Malaysia and to coordinate business activities for their parent companies regionally.

### **2016 RE/RO Approvals**

In 2016, a total of 91 new REs/ROs have been approved with a total business spending of RM122.7 million and are expected to create employment opportunities for 185 Malaysians out of the total number of 258 jobs. From the 91 REs/ROs approved, 52 projects (57.1%) were REs while 39 projects (42.9%) were ROs.

Among the major countries approved with REs/ROs are USA and Japan with 10 approvals each, while the remaining approvals were from the People's Republic of China and

Singapore with nine approvals each, and France with six approvals. The focus subsectors for the establishment of new RE/ROs are machinery and engineering support, E&E, medical devices, food and IT & software. The countries of origin of these REs/ROs vary and include Austria, Thailand, Denmark, Finland and Spain.

### **GREEN TECHNOLOGY**

Malaysia aims to become an inclusive and sustainable advanced nation by 2020. To balance the needs for economic growth and its accompanying environmental pressure, green technology (GT) has been identified as a driver of the future economy for the nation that would contribute to overall Green Growth and Sustainable Development. The National Green Technology Policy (GTP) is based on four primary pillars which are Energy, Environment, Economy and Social. Under this policy, the green technology is cross sectoral which focus on four sectors namely energy, building, waste management and transportation.

### **RENEWABLE ENERGY**

Malaysia has emphasised greater importance for Renewable Energy (RE) with policies and initiatives crafted specifically to spur the growth of the sector as a major step towards green economy, a move that is in line with ASEAN's Plan of Action for Energy Cooperation 2016-2025.

Under the plan, which aims to meet the increasing demand for energy in the region of 625 million population, ASEAN aims to increase the RE usage to 23 per cent by 2025 in its energy mix compared to 9.4 per cent in 2014.

Other programmes under the plans are ASEAN power grid, trans-ASEAN gas pipeline, energy efficiency and energy conservation (EE/EC).

Malaysia with abundant RE resources, namely solar, biomass, biogas and hydropower is already making big headways with solar photovoltaic (PV) contributing 67 per cent of total renewable energy, while others resources are actively promoted.

In 2016, the net energy metering (NEM) scheme and the large scale solar photovoltaic plant (LSS) were introduced to boost RE generation and to achieve the target of RE generation of 2,080MW by 2020.

NEM allows self-consumption of electricity generated by PV system users, while selling the excess energy to utility companies. Users can benefit in terms of savings in electricity bill through reduced electricity usage and energy credit from solar power generation.

A scheme for large scale solar photovoltaic plants (LSS) was introduced in March 2016, inviting developers to produce renewable energy in larger capacity such as from 1MW to 50MW with the targeted aggregate annual capacities of 200MW in Peninsular Malaysia and 50MW in Sabah (targeted accumulated capacity of 1,000MW in 4 years by 2020).

In 2016, a total of 111 renewable energy projects with total investments of RM1.9 billion were approved, of which domestic investments amounted to RM1.7 billion (88%) and foreign investments were RM233.8 million (12%).

The approved investments includes 81 projects in solar





amounting to RM588.8 million in investments, six projects in biomass with total RM343.6 million, 12 projects in biogas (RM145.7 million), 10 projects in mini-hydro (RM806.6 million), and two projects with combined sources namely solar, biomass and biogas totaling RM64.0 million.

These projects are expected to generate about 615 employment opportunities. One of the significant projects that was approved in 2016, is a RM66.7 million RE solar generation project to be located in Jasin Melaka. The project is targeted to generate 12MW capacity of energy for own consumption to support its high energy consuming glass manufacturing operations.

To date, this is the largest RE solar project generated for own consumption.

Another notable biomass project to be located in Padang Terap, Kedah with investments

of RM121.1 million will use paddy husks and wood chips to produce electricity, with capacity potentially reaching 9.95MW.

This project is the first of its kind in the country and is expected to use of 300 tonnes per day or about 9,000 tonnes a month of paddy husks/wood chips to generate electricity.

Indirectly, the project also helps to alleviate the problem faced by rice millers in disposing their paddy husks.

### **ENERGY EFFICIENCY (EE)/ ENERGY CONSERVATION (EC)**

Investments in energy efficiency (EE)/energy conservation (EC) projects are very promising in the years ahead given the fact that the demand and consumption for energy is growing and it cuts across all sectors, especially the manufacturing sector.

Historically, Malaysia's growth rate of demand for energy is higher than that of the gross domestic products (GDP), and this imbalance ratio is indicative of energy-intensive activities driving the nation's growth, thus the need to promote efficient use of energy.

Under the National Energy Efficiency Action Plan (NEEAP) introduced in January 2016, the focus is to tackle issues pertaining to energy supply by managing demand efficiently.

The 10-year plan (2016-2025) aims to promote energy efficiency in three targeted sectors namely industrial, which consumes about 44.2 per cent of energy generated, commercial (33%) and residential the remaining.

The aim is to ensure productive use of energy and minimise waste in order to contribute to sustainable development and increased welfare and competitiveness with the target

for eight per cent national energy savings of 52,233 GW and CO<sub>2</sub> reduction of 37,702 ktCO<sub>2</sub>eq.

More companies are considering and shifting towards going green in their activities, which includes manufacturers, shopping mall operators, commercial buildings, and other energy demand operations.

In 2016, a total of 19 energy efficiency (EE)/energy conservation (EC) projects with total investment of RM248.5 million were approved.

Out of which, three projects were undertaken through the energy service companies (ESCOs) and 15 projects were engaged by the industrial and commercial sectors.

A bulk of the investment was contributed by domestic sources, amounting to RM235.6 (95%) of total investments approved compared with RM12.9 million (5%) from foreign sources.

Investments in these EE projects are expected to generate a total of 142 employment opportunities.

### **Waste Management**

In Malaysia, waste is the second largest contributor to greenhouse gas (GHG) emissions trailing behind the energy sector, as evidenced by many landfills for waste disposal.

Under the 11MP, one of the strategies identified to pursue green growth is to manage waste systematically and in a holistic manner.

The National Solid Waste Management Department and the Solid Waste Management and Public Cleansing

Corporation (SWCorp) will spearhead these initiatives, together with other relevant agencies including the Atomic Energy Licensing Board, Department of Agriculture, DOE, Minerals and Geoscience Department, Suruhanjaya Perkhidmatan Air Negara (SPAN) and MIDA.

In 2016, two waste management projects were approved with total investment of RM381.9 million for activities in integrated solid waste management which include energy generation from biogas; and in medical waste treatment by gas sterilisation.

Both projects are expected to generate about 112 employment opportunities.

In addition, another significant project approved and to be located in Port Dickson, Negeri Sembilan with investments totaling RM332.4 million involves an integrated solid waste management using a solid waste modular advanced recovery and treatment (SMART) system.

A total of 85 workers will be employed for this project.

A total of 800MT per day of solid waste will be managed through the various processes of recovery, recycling, disposal and waste to energy with an export capacity of 20MW to generate electricity using biomass and biogas.

Another project is to be located in Sendayan, Negeri Sembilan with investment of RM49.5 million would adopt a new gas sterilisation technology in treating medical waste. This project is to complement the current concessionaires' services which have reached full treatment capacity due to increasing medical waste

generated by public/private hospitals and clinics.

### **Green Services**

The importance of green service providers to support the transition of green growth is very much in alignment and companies providing green related services can now be considered for green technology incentives as announced under Budget 2014.

Qualifying green technology services activities are in RE, EE, electric vehicle (EV), green building/green data centre, green certification and verification, and green townships.

The role of services companies to boost adoption of green practices are equally significant.

In 2016, a total of 14 green services projects with total investments amounting RM37.6 million were approved, mainly dominated by local players with investment of RM35.9 million (95%) and the other RM1.7 million (5%) investment are chipped-in by foreigners.

These green services activities projects would engage about 73 employees. Most of the green services activities approved are solar photovoltaic system integrators and four service providers related to green building.

### **BUSINESS AND PROFESSIONAL SERVICES**

Scientific discovery, technological breakthroughs and innovation are three prime movers towards achieving holistic growth in nation building.

Through the National Blue Ocean Strategy, MIDA along

with relevant agencies and stakeholders are working hand-in-hand in ensuring resources are adequately allocated to maximise societal benefits of Research and Development (R&D) investments.

Priority will be given to research programmes that benefits multiple sectors of the economy such as nanotechnology, robotics, automation, as well as cyber-physical systems and their application on smart cities with the hope that Malaysia would be a step closer in achieving 2.0 per cent gross expenditure on R&D (GERD) in 2020 and ultimately positions Malaysia as the hub of high technology activities.

#### **Independent Conformity Assessment Body (ICAB)**

As part of a synergistic approach to strengthen the national R&D ecosystem, the Government has introduced a new incentive for Independent Conformity Assessment Body (ICAB) this year, which aims to boost testing and technical support services for various industries in Malaysia.

This incentive is geared towards stimulating new ICAB service providers, focusing on high end testing services. By utilising these local ICABs, manufacturing companies would be able to break free from high costs which stem from overseas testing facilities services.

Apart from testing laboratories, calibration laboratories, certification bodies, inspection bodies and Good Laboratory Practice Compliant Test facilities also qualify to enjoy the incentive.

MIDA anticipates that with the introduction of such an initiative, more international and local ICABs would be

interested in setting up and expand their projects in the country, thus further reinforcing Malaysia's end-to-end R&D supply chain.

#### **University-Industry Research Collaborations**

In order to maximise the societal benefits of R&D investments, research design should be guided by the needs of stakeholders and the industries, of which interactions are needed to link the gap between academia and industries to move in tandem towards commercialisation of research findings.

MIDA has always aspires to be on the forefront of bridging universities' research capabilities with the industries' thirst for products with high commercial potential, through business matching and tax incentives, with the ultimate purpose to re-brand academia into market-driven, ready-for-commercialisation research bodies that will complement the industry needs.

With the offering of incentives to R&D entities from these higher learning institutes, manufacturers would be able to allocate higher value R&D investments, as they are

guaranteed to have the best research minds the country has to offer for their product development. This collaboration will also benefit new graduates as they get first hand exposure to industrial R&D.

It will also help them to acquire the necessary skills to meet industry's demands and expectations prior to employment.

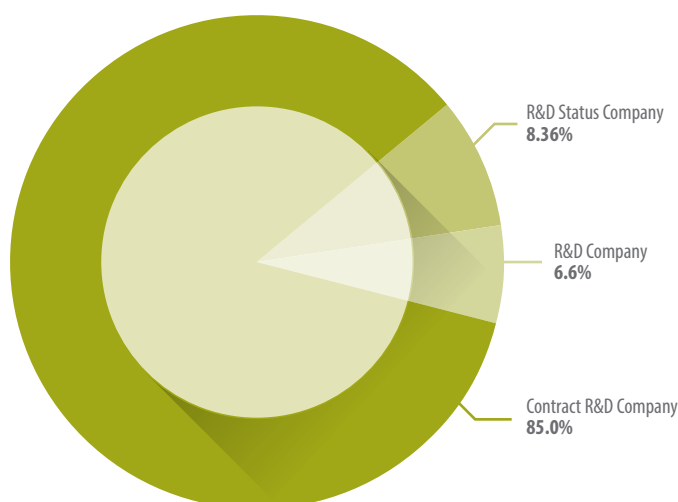
#### **Approved R&D Projects**

In 2016, a total of RM266 million were invested in seven approved projects in Malaysia, out of which RM234.7 million (88.2%) came from foreign sources while RM31.3 million (11.8%) were domestic. These projects are expected to create 687 high-income jobs.

Of the seven projects, two were from companies that were given approved tax incentives for Contract R&D, one was for approved R&D company, two companies were awarded R&D Status and two in-house R&D.

A large portion of investments was from the approved domestic-sourced Contract R&D projects amounting to RM37.36 million, which is set to generate 36 high-income jobs.

Share of Investments in Approved R&D Projects, 2016



Source: MIDA



One of the approved R&D Contract projects was on novel and proprietary technologies for the improvement and enhancement of upstream production facilities, catering for the oil and gas industry.

This Malaysian Company with a notable track record of patenting five innovative and environmental friendly technology processes will supplement the growth of the oil and gas industry in Malaysia by supporting upstream activities such as floating production facilities, onshore processing terminals, wellhead platforms, offshore processing platforms and mobile offshore production units. All these technologies will be developed in-house, further proving their capabilities as the leading technology developer in the industry. A total of RM31.2 million has been invested in this project which will lead to the creation of 24 skilled jobs.

The automotive sector was also invigorated through an R&D company project which provides services in developing automotive components and materials including headliners, carpet floors, shelf centres, trunk lid covers and hood insulators. The company, through the establishment of its own comprehensive R&D and testing centre, will serve as an end-to-end design and development platform for high quality polyurethane foams which will be used in the production of automobile headliners. This company is projected to invest up to RM2.9 million and 14 high income jobs for Malaysians.

The year 2016 also witnessed an increased effort to enhance university-industry research collaborations in the country. MIDA as the primary investment promotion agency, has approved an additional two R&D status projects for spin-off

companies from two different universities that focuses on agriculture, chemicals, electrical and electronics, tropical medicines and biology as well as the development of a halal ecosystem.

Industry players would be able to actively engage in R&D activities through the utilisation of these status-approved companies where easy access to university expertise is secured, at the same time enabling the academia to produce more research with higher commercial potentials based on industry needs. With combined investments of RM14.9 million, they are expected to generate 25 skilled jobs into the market.

### **Business and Professional Services**

As one of the pillars in Malaysia's 12 National Key Economic Areas (NKEA), Business and Professional Services has been identified as a high-value-add sector comprising highly distinctive industries with a range of high value services such as engineering, legal, architectural and telecommunications services.

Given the comprehensive sectoral policies and strategies across the subsector, it has huge potential in generating significant economic growth and job creation, raising productivity and enhancing competitiveness which further contributes to increase services exports and investments for Malaysia.

In tandem with the national economic aspiration, MIDA as the central hub of investments in Malaysia has facilitated numerous investments in this subsector for 2016. Among major investments that have been granted with the assistance of MIDA for this year are as follows:

Domestic Investment Strategic Fund (DISF) grant for a media transcription services company that transcribes old seismic data tapes into digital media for the use of the oil and gas industry. Among others, the company will be handling sensitive seismic data that holds crucial information on Malaysia's crude oil reserves.

The total capital investments involved is worth RM14.2 million.

Malaysia's fifth premium outlet project catering to high-end fashion and merchandise to satisfy local and international demand. The setup of this outlet will position Malaysia in the global map as one of the top shopping havens in the region which integrates local flavors with internationally renowned brands. The total investment for this project is RM320 million and it will provide employment opportunities to 120 Malaysians.

### **OIL & GAS UPSTREAM**

The oil & gas services subsector comprises the activity of exploration, appraisal, development and production of oil & gas. It also includes the decommissioning of rigs, logistics and storage (mid-stream) services.

The downtrend in oil prices has drastically changed the oil and gas business' landscape globally forcing it to save cost and focus on productivity and at the same time adopt innovative techniques and technologies to improve service efficiency as well as competitiveness.

The situation has also forced companies to consolidate and streamline their operations through mergers and acquisitions (M&As).



Among the major M&As in the industry includes FMC & Technip, Cameron & Schlumberger and GE & Baker Hughes. These newly merged companies are expected to be leaner and cost effective to ensure long term sustainability.

Some companies, such as McDermott, Subsea7 and Technip have also opted to relocate their operations from Singapore to Malaysia in an effort to reduce operational cost.

In 2016, RM240.3 million worth of investment have been approved in the oil & gas services subsector, with 70 jobs created compared with previous year's total investment of RM84.3 million and 91 jobs.

The approved project for 2016 is to develop a common user supply centre in Tanjung Langsat, Johor, which targets to attract more investors from Singapore.

It is estimated that these companies are able to save 25 per cent of its operating costs if they moved their operations from Singapore to the common user supply centre in Johor.

The common user supply centre offers complete facilities which include warehouses, open storage, a manufacturing complex, repair & servicing of equipment and logistics services.

In line with the development of the Pengerang Integrated Petrochemical Complex (PIPC) in Johor, the common user supply centre targets to attract the supporting services industry to complement the development of PIPC.

### **Machinery & Equipment for Oil & Gas**

In 2016, eleven projects have

been approved by MIDA for the oil and gas manufacturing subsector with investment amounting to RM227 million, these projects are expected to create 506 job opportunities.

Two of the projects approved for the oil and gas subsector in 2016 were from Eureka Efektif Sdn Bhd, which is expanding their existing facility with an additional investment of RM10.1 million.

Eureka started as a pipeline cleaning service provider and eventually moved up the value chain to produce their own pipeline cleaning tools as well as putting their brand in the global market. This is testimony that a local company is capable to compete with global players.

Another approved investment was from Romstar Research and Development Sdn. Bhd. For its diversification project to produce magnetic flux leakage (MFL), inline inspection tools/ intelligent pigging (IP) tools and multichannel caliper tools.

The total additional investment for the project was RM2.9 million. Romstar Research & Development was created to focus on producing intelligent inspection tools to be embedded into the equipment produced by Romstar Polymer.

## **HEALTHCARE SERVICES**

Malaysia's healthcare services is well recognised and gained prestigious awards in various categories internationally and regionally, and has made the country a preferred choice of destination by healthcare travellers and consumers. MIDA takes the lead in promoting investments in the healthcare industry to ensure a sustainable ecosystem exists for the industry to thrive.

Malaysia has progressively developed our healthcare travel services subsector with the Malaysia Healthcare Travel Council (MHTC) and relevant stakeholders including the Association of Private Hospitals of Malaysia (APHM), Malaysia External Trade Development Corporation (MATRADE), Tourism Malaysia and Malaysian Dental Association (MDA) playing active roles in developing strategies and programmes to bring the Malaysian healthcare travel industry to the forefront.

As the main body established to promote medical tourism, MHTC has been awarded the Asia Pacific Travel Council of the Year by Frost & Sullivan in 2016 under the Asia Pacific Healthcare and Tourism Awards. Meanwhile, IHH Healthcare Berhad has been recognised as the Asia Pacific Healthcare Service Provider of the Year.

Under the category of GHT Consumer Choice Awards for 2016, Sunway Medical Centre has been awarded the Cosmetic Surgery & Aesthetics Service Provider of the Year, and the National Heart Institute won the title for Cardiology Service Provider of the Year.

The International Medical Travel Journal (IMTJ) Medical Travel Awards 2016 has also awarded Malaysia as the chosen country by healthcare travellers as the Destination of the Year under the category of health and medical tourism. One of Malaysia's well-known private hospital operators has also been awarded under the International Hospital category. The emergence of Malaysia as a strong player in healthcare services globally has been proven through the recognition given by the International Living Magazine, where Malaysia (together with Colombia, Costa



Rica and Panama) has been listed as “Four Countries with the Best Healthcare in the World in 2016” and also as the “Best Retiree Healthcare on the Planet In 2016” other than Colombia, Costa Rica and Panama.

The medical tourism industry has experienced a notable growth since 2012. The growth can be seen from the number of healthcare travellers visiting Malaysia which had increased from 728,000 in 2012 to 859,000 in 2015. In addition, records have shown that the revenue generated from the healthcare travel industry has increased to RM914 million in 2015 from RM603 million in 2012. Major healthcare travellers recorded in 2016 were from Indonesia, followed by India and China.

In relation to investments in the private healthcare industry, three wholly-owned Malaysian projects and one project with 54 per cent of foreign participation were approved in the healthcare services subsector in 2016 with total investments of RM 188.5 million. It is projected that 266 new job opportunities will be created with the implementation of these projects.

### EDUCATION SERVICES

Education contributes a significant impact to the development of a country. Malaysia has also initiated many action plans to transform our education system in particular, Technical, Vocational Education

Training (TVET), which has been duly recognised as one of the game changers in the 11MP. TVET is a critical component in education as industry players’ demand for skilled human capital has to be fulfilled. The conversion of 72 vocational schools and eight technical schools into vocational colleges and the setting up of eight new colleges will further boost the country’s TVET delivery system.

Private investments in the education subsector play an important role in the development of education in the country. It complements the country’s public education sector in providing opportunities for education, savings on foreign exchange and establishing Malaysia as a hub of excellence in education.

Industry-oriented workplace training has benefited more than 63,000 employees since its introduction in 2004 under the National Dual Training System.

In line with the increase in the number of private education in Malaysia, collaboration between local private education and foreign education providers has also increased. Malaysia's private education subsector has been supporting the Government's efforts to provide access to quality education in all segments.

A total of 670 projects were approved in this subsector in 2016, involving investments of RM581.8 million. Domestic investments amounted to RM426.8 million (73.4%) while foreign investments totalled RM155 million (26.6%). In comparison, a total of 613 projects were approved with investments amounting to RM1.5 billion for the same period in 2015.

The investments approved in 2016 were a mix of both new and expansion projects of private colleges/universities, skills centres and other private education institutions, including international/private schools.

### **TOURISM (INCLUDING HOTELS)**

A wide-range of attractions in Malaysia assure that Malaysia's tourism industry can thrive despite the occasional global socio economic challenges. The tourism industry is expanding at a tremendous pace. In 2015, tourism was the second highest private investment contributor at RM24.5 billion and the third largest GNI contributor at RM67.1 billion.

In 2016, Malaysia aimed to attract 30.5 million tourists to its shores from 25.7 million in 2015, contributing RM103 billion worth of tourist receipts from RM69.1 billion previously. To strengthen the country's position as a leading tourist destination, the Ministry of Tourism and Culture (MOTAC) leads in the development of the industry while Tourism Malaysia and the Malaysia Tourism Centre work together to promote the country's tourism products and services, either locally or abroad. The tourism industry in Malaysia has achieved significant milestones internationally and locally. Malaysia's achievement as the World's 5th Best Shopping Destination granted by Expedia UK 2016 shows that Malaysia has been a preferred choice for overseas tourists.

The hotels and tourism subsectors continued to grow throughout 2016, seeing a total of 97 projects approved with investments of RM4.7 billion. Of these, 71.9 per cent (RM3.4 billion) were from domestic investments, while foreign investments made up the rest (RM1.3 billion).

The prominent hotel projects approved were mostly owned and managed by local operators, that had brought international brands for their projects such as Acmar Hotel & Residence in Klang, which will see more attractive landscaping on its property, coupled with the Courtyard by Marriot in Penang and DoubleTree by Hilton in Melaka, both are under the Marriot International Inc. and Hilton Worldwide Holdings Inc. brands respectively.

Among the significant approved projects in the tourism subsector was Borneo Samariang Resort City located in Kuching. This is a large scale water theme park of over 20

acres incorporating a safari park and a meeting, incentive, convention & exhibition (MICE) centre that will boost additional development in Bandar Samariang. Another project will be the Langkawi Water Kingdom in Kedah, which is the first water theme park in Langkawi.

### **MSC STATUS COMPANIES**

In 2016, a total of 336 companies were granted MSC Status with approved investments of RM6.4 billion (4.5%). In comparison with 2015, a total of 249 companies were granted MSC Status with approved investments amounting to RM4.6 billion (4%). Domestic investments amounted to RM3.5 billion (3.1%) while foreign investments totalled RM2.9 billion (10.2%). A total of 18,171 employment opportunities are expected to be created by these MSC Status companies, compared with 12,853 employment opportunities in 2015.

### **REAL ESTATE (HOUSING)**

Real estate covers the housing industry (excluding commercial buildings) in Malaysia. In 2016, a total of 680 projects were approved with total investments amounting to RM64.1 billion, almost all of which (97.5%) came from domestic sources. In comparison, a total of 911 projects were approved with investments of RM26.9 billion in 2015.

### **TRANSPORT**

The transport subsector covers maritime transport, aviation as well as highway construction and maintenance. In 2016,



a total of 14 projects were approved with investments of RM1.9 billion. Domestic investments amounted to RM1.8 billion while foreign investments totalled RM33.1 million. A total of 280 employment opportunities are expected to be created by this subsector. In comparison, investments approved in the transport subsector in 2015 amounted to RM15.9 billion. The investments approved in 2016 were mainly from domestic investments with the aviation subsector taking the most number with 11 projects valued at RM393.3 million while three projects were approved in the highway construction and maintenance subsector with investments amounting to RM1.4 billion.

## TELECOMMUNICATIONS

The telecommunications subsector covers network facilities, network services, application services (including content application services), postal and broadcasting. In 2016, total investments in this subsector amounted to RM5.9 billion, all of which were domestic investments. In comparison, investments approved in the telecommunications subsector in 2015 totalled RM8.9 billion.

## UTILITIES

A major contributor to investments in the services sector after real estate, the utilities subsector consists of energy and water utilities' services. The energy utilities include generation, transmission and distribution of electricity by TNB, Syarikat SESCO Bhd. (SESCO) and Sabah Electricity Sdn. Bhd. (SESB). Water utility services are offered by Suruhanjaya



Perkhidmatan Air Negara (SPAN) and Pengurusan Aset Air Berhad (PAAB).

Investments in 2016 amounted to RM10.5 billion compared with RM11.6 billion registered in 2015. The investments for this period were also driven by domestic sources.

## FINANCIAL SERVICES

The financial services subsector encompasses banking, insurance and capital markets (fund management, investment advisory, financial planning, venture capital and brokerage).

Investments for 2016 in this subsector amounted to RM13.7 billion. In comparison, investments approved in 2015 were registered at RM15.4 billion.

Investments were bolstered by domestic sources which amounted to RM10.6 billion (77.4%) while foreign investments totalled RM3.1 billion (22.6%). The banking segment remained the largest contributor to this subsector with investments totalling

RM13.4 billion which was led by conventional banking activities which chartered RM11.7 billion. Investments in insurance and capital markets recorded RM265.3 million and RM3.2 million respectively.

## DISTRIBUTIVE TRADE

Another key subsector which contributes to investments in the services sector is distributive trade which consists of wholesale and retail trade; hypermarkets/supermarkets, department stores and direct selling; franchising; and projects approved under the Petroleum Development Act (PDA), 1974.

In 2016, a total of 1,449 projects were approved with investments amounting to RM9.3 billion. Moving forward, a total of 52,052 employment opportunities are expected to be created by this subsector.

In comparison with 2015, investments in 2016 were led by foreign investments amounting to RM5.7 (61.3%) billion compared with domestic investments totalling RM3.6 billion (30.7%).



## INVESTMENTS IN THE PRIMARY SECTOR

### PERFORMANCE OF THE PRIMARY SUBSECTORS

The primary sector comprises three major subsectors, namely, agriculture; mining; and plantation and commodities.

#### Agriculture

In 2016, a total of 16 projects were approved with total investments of RM69.4 million, which all are domestic investments. These projects are expected to create 529 employment opportunities.

#### Mining

Investments in the mining subsector comprise oil and gas exploration and mining in other minerals.

In 2016, a total of 19 projects were approved with investments of RM7.6 billion. Foreign investments amounted to RM3.3 billion (43.4%) and domestic investments totalled RM4.3 billion (56.6%). The main investments were derived from oil and gas subsectors that contributed RM7.5 billion (98.7%).

#### Plantation and Commodities

In 2016, investments valued at RM542.7 million were approved in the plantation and commodities subsector, all of which were domestic investments. A total of RM319.2 million or 58.8 per cent of the total investments were in the rubber plantation, while RM223.5 million (41.2%) were in the oil palm sub-sector.





3

“COLLABORATION TOWARDS  
**ATTRACTING QUALITY**  
**INVESTMENTS**”

## REGIONAL CORRIDORS

### EAST COAST ECONOMIC REGION DEVELOPMENT COUNCIL (ECERDC)

ECER, which spans the states of Kelantan, Terengganu, Pahang and the district of Mersing in Johor offers vast investment potentials to investors. Rich in natural resources such as abundant land, minerals, centuries' old tropical rainforests, scenic beaches and islands, oil and gas, minerals and fisheries, ECER is also strategically located, facing the South China Sea. This allows direct access by sea and air to the burgeoning markets of the ASEAN and Asia Pacific as a whole, a region with a total population of about 4 billion and combined annual Gross Domestic Product of US\$17 trillion.

In 2016, ECER faced many challenges in attracting investments during the early part of the year. However, with the continuous efforts in promoting investments into the region through collaborations with the State Governments as well as federal government agencies such as MIDA and the Ministry of International Trade and Industry (MITI), the investments came in during the final quarter of the year. The total value of investments attracted in 2016 exceeded the year's target of RM12.0 billion and from the inception of ECERDC in 2007 until the end of 2016, RM101 billion investments have been attracted into the region. This is an achievement of 91.8 per cent of the 2020 target of RM110 billion. This

RM101 billion in investments is expected to create over 102,000 job opportunities for the people.

ECER's Bumiputera Economic Empowerment Agenda's main objective is to elevate the socio-economic status of the Bumiputera in ECER. The Teraju@ECER programme is specially designed to address this agenda. Since its launch in 2012, a total of 176 Bumiputera companies in ECER have benefited from this initiative that provides guidance and business advisory services for business expansion and financial assistance. A total of 94 high-performing Bumiputera companies (TeraS companies) received such guidance, while another 82 Bumiputera companies, with a total investment of RM1.62 billion, were granted with the TERAJU Facilitation Fund amounting to RM208 million.

Sector-wise, the manufacturing cluster has been a key driving force in ECER's economy, contributing 53 per cent of the total investments attracted into ECER between 2007 and 2016, creating about 53,000 job opportunities. Moving forward, the manufacturing cluster is expected to grow even further, catalysed by the increasing acreage of industrial parks in ECER.

Besides manufacturing, the other major clusters are tourism; bio-economy; oil & gas and petrochemical, all of which have also recorded increased investments, closely linked to ECER's abundance of natural resources. In total, these other three subsectors attributed 33 per cent of the total investments

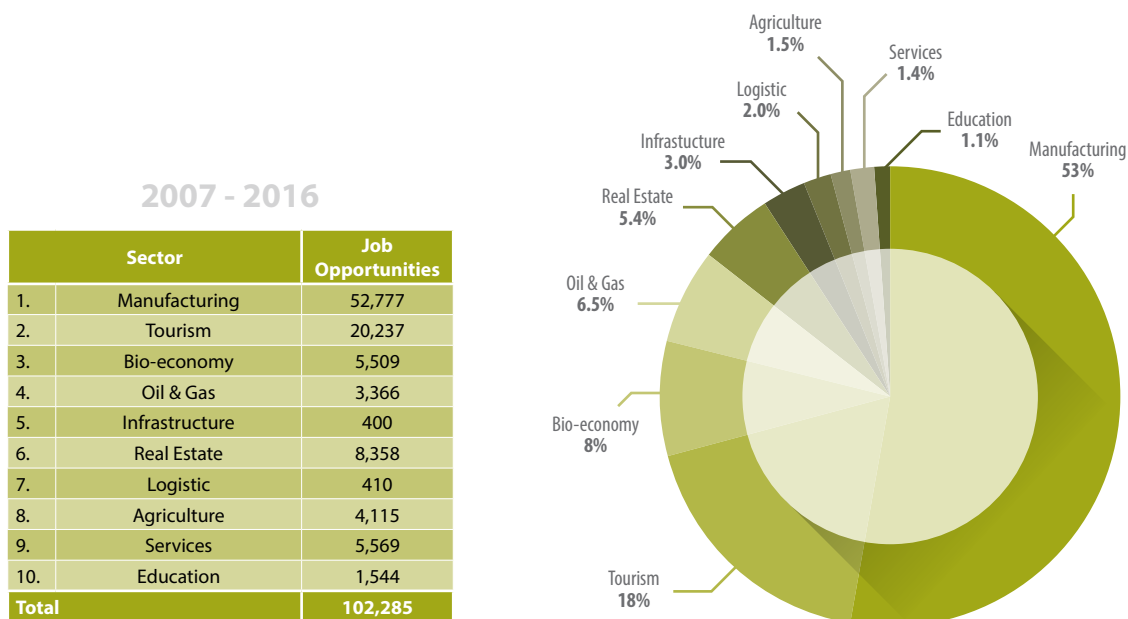
in ECER, generating more than 29,000 job opportunities for the people.

Notably, the bio-economy subsector has grown at a rapid pace in terms of investments. It is currently ECER's third (and Terengganu's second) largest investment, an indication of the region's gradual step-up in terms of its economic value-chain in this sector.

Tourism is another key subsector in ECER. ECER boasts a wide range of tourism assets, inclusive of beaches, islands, forests and other natural assets. The potential to attract investments and promote economic development through the tourism subsector is immense. One of the key tourism projects is the Kuala Terengganu City Centre (KTCC) integrated development project that sprawls over about 180 acres on the scenic Terengganu coast. Facing the South China Sea, the development will position KTCC as a waterfront destination and heritage city, Meetings, Incentives, Conventions and Exhibitions (MICE) hub and the gateway to the scenic islands off the Terengganu coast. Development parcels available include The Learning Quarter, Integrated Lifestyle Enclave, Healthcare Wellness Village, Mosque and Souq.

All of these investments are in accordance with the Government's New Economic Model that focuses on people economy and capital economy. Furthermore, all of these economic clusters' developments in ECER support the nation's Economic Transformation Programme,

## Investment According to Sector



which focuses on the 12 National Key Economic Areas (NKEA) as part of the Tenth Malaysia Plan (10MP).

One of the best performing industrial parks in ECER is the Malaysia-China Kuantan Industrial Park (MCKIP) which has been one of the key accelerators in ECER's economic growth. MCKIP which began in 2013 with 1,400 acres will be expanded to 3,000 acres. This reflects a positive development which signifies the investors' continued confidence in investing in ECER. In fact, MCKIP has secured nearly RM20 billion of the total investments in high technology industries including plastic and metal equipment, automotive components and steel.

The development of key infrastructures to support the rapid growth in MCKIP is also on track. The first phase of the expansion of Kuantan Port into a deep water port, initiated through a public-

private partnership, is expected to be completed by Q3 2017. Upon completion, it is capable of handling 52 million freight weight tonnes and vessels of up to 200,000 deadweight tonnage (DWT), providing quicker and a more direct route between ECER and ports in China's eastern region.

ECERDC is committed to transform the region into a world-class investment destination. While many investments leverage on ECER's strength in natural resources using traditional contemporary technologies, ECERDC is also putting effort in building a foundation for R&D and innovation activities to ensure that the region achieves a sustainable and resilient economy. On that note, research collaborations between industry players and academia are paramount to facilitate greater innovation in engineering and science towards more advanced manufacturing.

As such, a Memorandum of Understanding (MoU) was signed between Swansea University and Universiti Malaysia Pahang (UMP), and this is a significant step in paving the way for industry-academia collaborations which would ultimately draw high-value investments and fuel new economic growth in the region. Following the MoU, ECERDC is working on further strengthening the working partnership and research collaborations between Swansea University and the industries in ECER.

Among the notable investment highlights for the year where such investments involve R&D or innovation are:

- Kaneka MS Sdn. Bhd.'s plan to produce MS polymer sealants, a raw material for adhesives and coatings;
- Detik Aturan (Pahang) Sdn. Bhd. plans to produce biomass pellets based on palm oil (oil palm biomass pellets) using home-



- grown technology to produce alternative fuels to conventional fuels such as coal, diesel and kerosene;
- Geliga Slipway Sdn. Bhd. (GSSB) is expanding its capacity to service bigger ships. GSSB has more than 28 years of experience in the ship building ship repair arena; and
  - Upstream Downstream Services Sdn. Bhd. (UDPS), which will be a pioneer in the development of a centre of Mercury (Hg) disposal in the region. UDPS has also taken a step ahead and received recognition from the Malaysia Book of Records for the categories of Shariah-compliant companies for Oil & Gas.

### **NORTHERN CORRIDOR IMPLEMENTATION AUTHORITY (NCIA)**

The Northern Corridor Implementation Authority (NCIA), an entity established under the Northern Corridor Implementation Authority Act of 2008 (Act 867), is mandated to drive the Northern Corridor Economic Region or NCER development programme. This initiative, which serves to accelerate economic growth and elevate income levels in the north of Peninsular Malaysia, covers the state of Kedah, Perak, Perlis and Pulau Pinang.

Unlike the other corridors of development in Malaysia, the Northern region is a brownfield initiative, combining developed areas with the lesser developed locations. It has a large and educated workforce, a vast and sophisticated logistics network to support the key

economic sectors, a thriving business culture, and the presence of large multi-national corporations, which bring with them global networks and markets. NCER's ability to diversify its economy will ensure the region's resilience and its long term economic growth.

NCER has attracted an accumulative private investment of RM79.92 billion from 2009-2016 and created 103,597 job opportunities from 2010-2016 across the region. In 2016, forging ahead with its Phase II development programme comprising various people-centric projects, NCER has achieved RM8.3 billion in private sector participation and created 12,376 jobs opportunities, despite a challenging economic backdrop.

In addition to that, due to the delivery of various national and regional initiatives, NCER experienced a higher annual GDP growth rate of 5.8 per cent compared to Malaysia's 5.4 per cent during the period from 2010-2014; while the median household income in NCER has grown by 10 per cent (Compound Annual Growth Rate - CAGR) from 2009-2014, as compared to 3 per cent from 2002 to 2007.

A notable people-centric initiative by NCIA, the SuriaKU programme, aims at improving the socioeconomic standing of the lower income group (B40) and help move them into the middle class income bracket (M40). The initiative helps generate income by tapping into solar energy sources - that is, using green technology to produce clean energy.

Through this programme, it is expected that the target group will be able to earn extra income ranging from RM250 to RM600 per month. The SuriaKU pilot project, which started in Pauh, Perlis, will soon be rolled-out nationwide as one of the initiatives under the 2017 Budget; and rebranded as MySuria. The Malaysian Government has approved a budget of RM45 million for MySuria, which will benefit 1,620 homes.

With the implementation of the new NCER Socioeconomic Blueprint 2016-2025 in 2017, NCIA anticipates spin-off investments to be generated from new growth nodes such as Chuping Valley, Kedah Rubber City, Kedah Science and Technology Park and Greater Kamunting. These new growth nodes serve as development catalysts for NCER and will continue to be the backbone of economic development throughout the region for the next 15 years. These high impact projects under the 11MP will assist the country in its agenda to become a RM2 trillion-economy by 2023.

Several other key initiatives in the Indonesia-Malaysia-Thailand Growth Triangle under the Joint Development Strategy (IMT-GT/JDS) successfully delivered in 2016 include the Superfruits Cluster Programme, Joint Development Strategy Aquaculture Disease Workshop and IMT-GT Ecotourism and Homestay Packages between Perlis and Satun. These initiatives continue to receive strong support from participating countries and communities in the bordering region.

In strengthening talent development, NCIA has implemented various up skilling programmes to help ensure that graduates are industry-relevant. This includes training programmes in the Aerospace industry with SAM Precision Sdn Bhd, LED industry with OSRAM Opto Semiconductors (M) Sdn Bhd, Technical and Vocational Education and Training Programme (TVET) with Kulim Hi Tech Park (KHTP) and Northern Corridor Semi-Skills Training Programme (NSSTP) - TVET programme with Hewlett Packard Malaysia Manufacturing Sdn Bhd (HPMM) & Institut Teknikal Jepun-Malaysia (JMTI). In an effort to create a more innovative and conducive support eco-system, NCER possesses and maintains as an industry-relevant talent base. This is in line with the ultimate objective of Growth with Social Equity where the initiatives generate economic growth whilst creating socioeconomic spillovers to the Rakyat. Driven by these new growth nodes as well as a strong track record, it is believe that NCER will continue to prosper as a region.

In 2017, NCIA will continue to focus on its growth nodes which have been positioned to sustain the growth momentum for Northern Corridor. These growth nodes include:

**Kawasan Perindustrian Lembah Chuping (KPLC)/ Chuping Valley Industrial Area (CVIA)**

A comprehensive development study was conducted on KPLC/ CVIA in 2014 to gain critical insights into the potential of KPLC/CVIA as one of Perlis' key socioeconomic catalysts. The findings of the study led to

RM723.7 million allocation from the Federal Government under the 11th Malaysia Plan for the infrastructure development in KPLC/CVIA.

KPLC/CVIA is expected to provide a major boost for Perlis' socioeconomic indicators in line with the state's continuous transition from traditional agriculture-based economy to a modern, industry-driven growth model. The project is expected to create 12,674 job opportunities with a Gross National Income of RM2.58 billion by 2025.

**Kedah Rubber City (KRC)**

NCIA was the key driving force behind the successful approval of a Special Incentive Package for Kedah Rubber City (KRC) in 2015. Approved by the Ministry of Finance, the incentive package was specially tailored to attract midstream and downstream rubber and rubber-related players to establish their operations within KRC.

Covering a sprawling land area of 1,538 acres in Ladang Bukit Ketapang, KRC is conveniently located within minutes from key destinations such as Kuala Nerang, Alor Setar and Durian Burung-Ban Prakob at the Malaysia-Thailand border. KRC's development plans are designed to target high value rubber-based and rubber related midstream and downstream industries. The strategy is to leverage on the strategic location of KRC with the supply of high grade natural rubber produced from northern Peninsular Malaysia and southern Thailand. The targeted manufacturers are broadly categorised into 4 segments:

- Large catalytic anchor

tenants (tyres, gloves, condoms, compounds)

- Specialised industrialised rubber (medical devices, mattresses)
- Precision engineering rubber products (gaskets, conveyor belts, seismic shock absorbers)
- Environmentally-friendly rubber products (ekoprena, pureprena, rubberised pavement and road materials).

In view of the wide-ranging potential of KRC, the Federal Government has approved an allocation of RM417.5 million to ensure the project started off on a solid footing and firm support. Moving forward, KRC is projected to create 14,471 jobs with a GDP contribution of RM14.7 billion over the course of 15 years.

**Kedah Science and Technology Park (KSTP)**

NCIA completed a detailed development study in 2015 pertaining to the setting up of KSTP in Bukit Kayu Hitam. The study marked the first step towards the establishment of KSTP to complement the existing industrial parks in Kedah and Koridor Utara such as Kulim Hi-Tech Park, Sungai Petani Industrial Area, Gurun Industrial Area, Penang Science Park and Batu Kawan Industrial Park.

The main principle behind the development concept of KSTP is to create a liveable and sustainable environment for investors, researchers and the local communities. Carefully segmented to reflect this concept, KSTP will feature a balanced mix of a Modern Industrial Park (MIP) and Global

Research Centre (GRC). Several economic sectors have been identified; and KSTP will be focussing on three sectors, namely Advanced Materials, Agro-Science and Information Communication Technology. KSTP will serve as the platform for R&D to work hand-in-hand with the industry from the initial stages of conceptualisation, design and all the way to commercial production on the same site.

The development will be complemented with commercial units, public amenities and residentials, with an exceptionally generous section dedicated to greenery and recreational areas. This is done with the intention to improve and enhance the livability aspects of KSTP. KSTP will be built in three phases, with Phase 1 being an extension of the existing Bukit Kayu Hitam Industrial Park. The said initiative is projected to create 23,244 direct job opportunities and a total output of RM57.4 billion in the science and technology sector by the year 2030.

### ISKANDAR REGIONAL DEVELOPMENT AUTHORITY (IRDA)

Iskandar Malaysia continues to attract a commendable total cumulative committed investment in 2016 despite global uncertainties and not-so-favorable market conditions throughout the year.

The investment performance for Iskandar Malaysia is a result of continuous and collaborative promotion efforts by IRDA, MIDA and related agencies to

promote Iskandar Malaysia as the preferred investment destination in Malaysia. Iskandar Malaysia secured a total committed investment of RM32.26 billion in 2016, accumulating its total cumulative committed investments at the end of 2016 to RM222.55 billion. Out of these, 54 per cent or RM119.60 billion has been realised on the ground.

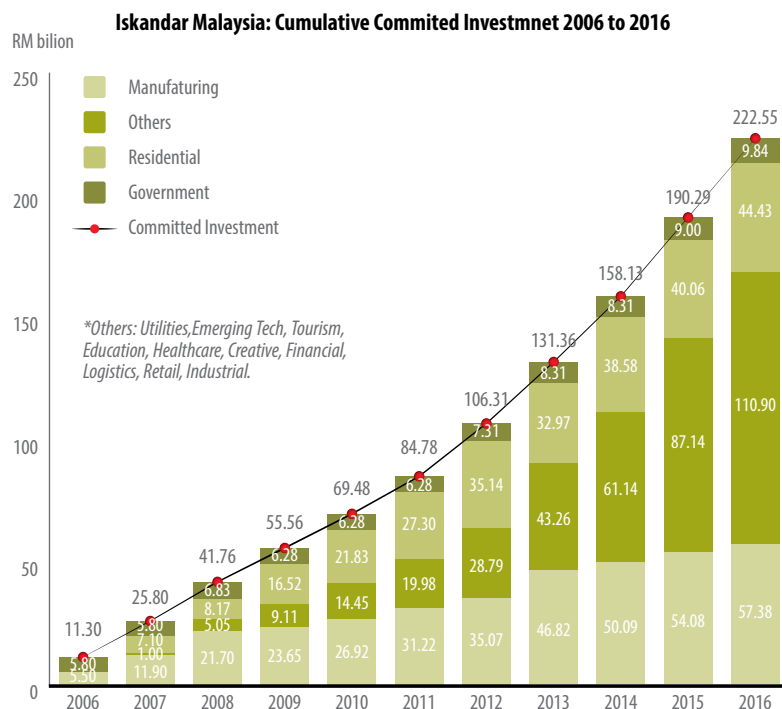
Mixed development totalling RM57.82 billion or 27 per cent, was the largest contributor followed by investments in the manufacturing sector with RM57.38 billion or 25 per cent. Residential and industrial property developments accounted for RM44.43 billion and RM19.84 billion respectively, representing 20 per cent and nine per cent.

Investments in the promoted sectors, which are manufacturing and services sectors amounted RM74.71 billion or 34 per cent. Domestic investments accounted about

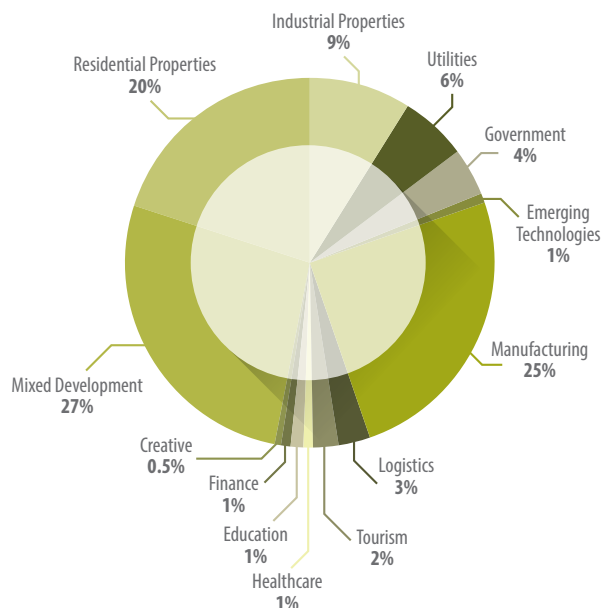
RM134.60 billion or 60 per cent of the total cumulative committed investments, with the remaining RM87.95 billion or 40 per cent from foreign investments.

### Investment highlights

- Forest City, a massive development project comprising four man-made islands covering over 3,425 acres in Gelang Patah, Johor. With a gross development value of RM177 billion, the project is expected to offer 220,000 job opportunities by 2035. Forest City is the single largest mixed development project in Southeast Asia, incorporating green and smart city elements into its development. Works which began in 2015 saw the opening of the showcase gallery in January 2016 and the opening of the Phoenix Hotel in November 2016. Under construction will be the new international school with American syllabus scheduled for



Cumulative Sector Breakdown 2006 to 2016



Promoted Sector	RM'Bil	Other Sector	RM'Bil
Manufacturing	57.38	Mixed Development	57.82
Logistics	6.30	Residential Properties	44.43
Tourism	3.37	Industrial Properties	19.84
Healthcare	3.16	Utilities	12.97
Education	2.07	Government	9.84
Finance	1.84	Emerging Technologies	2.94
Creative	0.59		

Source: MIDA Aug'2016 & Audited Corporate Announcements

completion in 2018 besides the ongoing construction of the residential units.

- Development of the 700 acre Sedenak Iskandar Data Centre Hub (SIDH) in Sedenak, Kulai which will be a catalytic investment to bring in world class data centre investments and ICT related activities into Iskandar Malaysia. The SIDH will accelerate the embrace of Internet of Things (IoT) connected devices and infrastructures towards smart living and smart community. With a seed investment from the Federal Government, infrastructure works had begun in 2016 with target completion date by end of 2017. SIDH will draw new investments, provide job opportunities as well as increasing the level of income of the local community.
- Graduation of the first cohort of the University of Southampton Malaysia

Campus with MEng Mechanical Engineering at the University of Southampton UK, marked another milestone for foreign branch universities in EduCity and the development of Iskandar Malaysia as an education destination. The 2+2 Engineering programme (with 2 years in EduCity and 2 years in the UK) that started in 2012 saw 10 students graduating with First Class and eight with Upper Second Class in MEng, showcasing academic excellence from the Malaysian campus.

#### Jobs creation

Iskandar Malaysia has successfully created 717,547 jobs from 2007 until November 2016.

On the talent development initiatives, Iskandar Malaysia together with the Ministry of Education and the Ministry of Higher Education conducted three job fairs to-date, especially

in the Technical and Vocational Education and Training (TVET) segment in Iskandar Malaysia. A total of 160 companies had participated in the job fairs and had benefitted more than 4,000 candidates since 2015. The TVET job fair held in October 2016 offered more than 10,000 jobs.

Two programmes under the Iskandar Malaysia Professional Fund and the Iskandar Malaysia Employment Grant (IMEG) amounting to RM31 million, were launched in 2016 to address mismatch of graduates' qualifications to industries' needs as well as to widen the talent net to the different segments of the community.

#### SME development

SME Iskandar Malaysia's growth income stood at 7.9 per cent, which is above the national average of 6.45 per cent while the level of profitability stood at 5.8 per cent surpassing the national average of 5 per cent.



### Sustainable Development

Iskandar Malaysia and the implementation of the Low Carbon Society (LCS) programmes were showcased at the Malaysia Pavillion during the 22nd Conference of Parties (COP22) meeting under the United Nations Framework for Climate Change Conventions (UNFCCC) held in November, 2016 in Marrakech, Morocco. During the event, Iskandar Malaysia shared its completed Green House Gas (GHG) Inventory for the year 2015. IRDA completed the Comprehensive Assessment System for Built Environment Efficiency (CASBEE) pilot projects in 2016 and launched the CASBEE manuals at the COP22. CASBEE will be one of the main green building assessment tools to assess energy efficient buildings and development areas in Iskandar Malaysia.

### Celebrating 10 years of Iskandar Malaysia

Iskandar Malaysia celebrated its 10<sup>th</sup> year journey since its inception in November 2006. The celebration held in EduCity, Iskandar Puteri was officiated by Prime Minister Dato Sri Mohd Najib Tun Razak and the occasion was graced by the presence of Tun Ahmad Badawi, the former Prime Minister who launched Iskandar Malaysia in 2006, as the country's first regional development corridor. Also present were former Menteri Besar of Johor Tan Sri Abdul Ghani Othman and Tan Sri Azman Mokhtar, Managing Director, Khazanah Nasional Berhad. The 10th year's milestone was celebrated with strong achievements in investments, social inclusiveness and environment sustainability.



Moving forward, Iskandar Malaysia's development will continue to be guided by the enhanced Comprehensive Development Plan ii (CDPii), with stronger emphasis on Iskandar Malaysia's Circle of Sustainability which is focussing on wealth generation, wealth sharing and resource optimisation.

### SARAWAK CORRIDOR OF RENEWABLE ENERGY (SCORE)

The Sarawak Corridor of Renewable Energy (SCORE) is a major development initiative undertaken by the Government to accelerate Sarawak economic growth and development towards achieving high income and developed State status by the year 2030. SCORE was launched on the 11th February 2008 to develop the Central Region of Sarawak covering an area of 70,708 sq. km with a population of 896,489. SCORE's major advantage is its abundant energy resources specifically the 20,000MW of hydropower potential, 1.46 billion tons of coal and natural gas (40.9 trillion square cubic feet). The core element of the SCORE plan is to accelerate the development of

the energy resources to allow Sarawak to price its power competitively and attract investments in heavy energy-intensive industries especially in the Samalaju Industrial Park, one of the growth nodes in SCORE area.

SCORE Phase 1 (2008-2015) which is laying the foundation stage has been successfully implemented. As we are building the critical mass and momentum to spur the development, we have intensely promoting the 10 priority industries under SCORE namely aluminium, glass, oil-based, steel, oil palm, fishing and aquaculture, livestock, timber-based, tourism and marine engineering. To date, SCORE has successfully attracted 21 investment projects with worth of RM33.50 billion. These projects are expected to generate 17,018 employment opportunities. In tandem with our target under the Phase 1 of SCORE Development Plan, most of these investments are high priority trigger projects such as aluminium, ferroalloys and polycrystalline silicon.

The year 2016 marks the first year for the Second Phase

Development (2016–2020) for SCORE. Under this development phase, SCORE will focus more on attracting the downstream industries by leveraging on the products of the existing trigger industries in SCORE as raw materials. The downstream manufacturing industries in the areas of building materials and components, heavy industry and metal, renewable energy products, transportation and resource innovation will be promoted and developed under this second phase of development. These downstream industries will be centralised at the Samalaju Industrial Park and in this regards, the Samalaju Industrial Park will be developed as an Industrial Innovation Township to attract world class industries including the future technology and agro and life science industries.

Extensive focus will also be given to promote and drive the development of downstream activities in the oil and gas industry whereby we are targeting to establish petrochemical plants in Bintulu and Samalaju Industrial Park. The success in attracting these downstream industries is important as they are involved in higher value added activities and are able to generate high paying jobs in the State. In this respect, the Government will continuously put concerted efforts particularly in the development of infrastructure, power supply and human capital to ensure that SCORE will be able to maintain and sustain its competitiveness and attractiveness especially in this region to both domestic and international investors. The SCORE hinterland areas will also be opened up for

more development as well as promoting investments into the areas surrounding the HEP Dams to explore the eco-tourism opportunities. The HEP lakes have the potential to be developed as resorts to attract tourists to experience the scenic views, exotic cultures and traditions of the locals. Biomass industry will be promoted to tap on the potentials of the vast forest areas and the development of oil palm plantations in the SCORE area.

### **Samalaju Industrial Park**

Samalaju Industrial Park is located approximately 60 kilometers from the existing Bintulu town. With an area of more than 8,000 hectare, Samalaju Industrial Park is one of the biggest industrial parks in the country. It is being developed with the necessary industrial infrastructure including a dedicated port facilities and a new township. Moreover, its distance location from the existing towns and settlements would enable expansion of this park in the future.

Since the launching of SCORE development plan in February 2008, Samalaju Industrial Park has received overwhelming response from both domestic and international investors. The overwhelming responses received from the investors' manifest and acknowledge the attractiveness and competitiveness of SCORE globally.

To date, there are 16 companies with total investment of RM27.69 billion had been approved and issued with manufacturing licence to be located at Samalaju Industrial Park.

### **Profiles of Projects in Operation in Samalaju Industrial Park**

#### **Tokuyama Malaysia Sdn. Bhd.**

Tokuyama Corporation of Japan is the first foreign investor to invest in Samalaju Industrial Park. Tokuyama Malaysia Sdn. Bhd. project in Samalaju Industrial Park is producing polycrystalline silicone, the main component for solar cells and semiconductor and has created 1,050 jobs opportunities in the State. Tokuyama plant is the first plant producing polycrystalline silicone in Malaysia bringing a fresh high technology. The Malaysians especially the young graduates who are working in Tokuyama plant can benefit and learn from this transfer of high technology.

#### **Press Metal (Bintulu) Sdn. Bhd.**

Press Metal (Bintulu) Sdn. Bhd. located in Samalaju Industrial Park is the second aluminium smelting plant of Press Metal Berhad in SCORE area. The plant was commissioned in December 2012 that produces 320,000 metric tonne per annum of aluminium billets and ingots using the world latest 400kA smelting technology. The first aluminium smelting plant of Press Metal Berhad is in Mukah which commenced operation in August 2009 and is currently producing 120,000 metric tonne per annum of aluminium billets and ingots. Press Metal Berhad is the first local company to invest in SCORE.

#### **OM Materials (Sarawak) Sdn. Bhd.**

OM Materials (Sarawak) Sdn. Bhd. commenced a manganese alloy smelting plant in Samalaju Industrial Park. OM Materials (Sarawak) Sdn Bhd is owned by OM Holding

Limited (OMH) which is listed in the Australian Securities Exchange (ASX) in March 1998 and has its foundations in metals trading. The project in Samalaju Industrial Park is bringing new technology in manganese alloy smelting which is using submerged electric furnace. The project will benefit the logistic handling business, as the throughput of the investment is 1 million metric ton per annum. The project is creating 2,684 job opportunities for the local people.

#### **Pertama Ferroalloys Sdn. Bhd.**

Pertama Ferroalloys Sdn. Bhd. is the first large-scale manganese alloys and ferrosilicon plant in Malaysia. The first tapping of the Ferrosilicon furnace was successfully carried out in Q2 2016 and expected to be full commercial operation in Q2 2017. The plant on full operation is expected to generate an output of 240,000 metric tons per annum. The plant is to produce and supply manganese alloy products for the steel industry worldwide and will trigger the development of steel-based industrial cluster in SCORE.

#### **SABAH ECONOMIC DEVELOPMENT AND INVESTMENT AUTHORITY (SEDIA)**

The Sabah Development Corridor (SDC) entered its Phase 3 of development in 2016, in line with the 11MP, 2016 to 2020. Sabah's economic growth had sustained steadily since the establishment of SDC in 2008, registering 6.1 percent growth in 2015, higher than the national growth of 5 per cent.

The growth was contributed by the various initiatives under SDC, some of which were completed in 2015 like the Kimanis Power Plant (KPP) and the Sabah Oil and Gas Terminal (SOGT). The key promoted areas in SDC are; tourism, agriculture, palm oil, manufacturing, logistics, oil & gas, energy and education. Since SDC's launch, a total of RM158 billion worth of cumulative investments has been committed until September, 2016, with RM57.68 billion realised.

SEDIA has also been aggressively promoting investments in innovation, particularly in the agriculture sector, which had traditionally served as one of the backbones of Sabah's economy. The agro-processing and packaging subsectors add value to the state agriculture and agro-based industry. One of SDC's flagship project, the Sabah Agro-Industrial Precinct (SAIP), is a dedicated integrated agro-processing cluster that will enhance the capability of local agro-based industries, especially the local SMEs/SMIs in the downstream processing of agro-food, and specialty crops and eventually agro-bio industries.

SAIP envisages to becoming a new centre of excellence in agro-biotechnology that optimises the state's abundant natural resources to produce value-added food, cosmetics, agro-biopharmaceuticals and specialty products based on botanicals, aquatic plants and animals. SAIP also serves as a test-bed for carrying out R&D, Commercialisation and Innovation (RDCI) efforts and to develop innovation driven

ecosystems to support agro-based entrepreneurs. Unlike other existing science and technology parks (STP) in Malaysia, SAIP has a distinct platform to foster science-industry linkages focusing on Specialty Natural Products (SNP), agro-biotech and health food products. SAIP also has a dedicated Halal Park. The core components of SAIP are:

- SAIP administration and support complex;
- Integrated agro-biotechnology incubator complex;
- Knowledge Park;
- Commercial and institutional zone;
- Health Farm and Demo Plot;
- Strategic reserve zone for agro industry; and
- Residential/Service Apartments

Investments promoted includes the production and processing of pharmaceutical ingredients, health care and dietary supplements, health and functional food, fruit concentrates and juices, flavours and food ingredients, cellulose products, essential oils, fragrances and perfumeries, herbal and marine products, nutraceuticals, industrial enzymes, cosmetics and toiletries.

SAIP places greater emphasis on the development of the knowledge capital business. While it seeks to support start-ups and SMEs, SAIP also welcomes foreign investors. It will play an enabling role to assist entrepreneurs in developing their businesses by providing incubator support, management services, internship support, customised business support,





market access, and access to shared office facilities as well as processing, packaging, post-harvest handling services and logistics.

An administration building, initial incubator support facilities, a mini processing plant, a tissue culture lab, product development facilities and a demonstration and nursery plot are already in place. In addition, the Research and Engineering building, Post-Harvest Handling facility, Production Line facility, Controlled-Environment facility (CEF) and Green House Ancillary building were all completed in 2016. SAIP is now in full operation. Investments in

the promoted industries in SAIP are eligible for special SDC fiscal incentives.

Towards achieving the mission and vision of SAIP; SDC 1Agro-SAIP and 1Bizlink programmes were established to provide training, business and professional services, technological support, R&D, business matching, client promotion as well as event management. Under the SDC 1Bizlink Programme, a total of 34 incubatees had been recruited with 16 having their grant applications approved and six still under deliberation. Under the Gerak IKS events organised in 2016, a total of 141

new incubatees had registered with SEDIA.

The 1Agro-SAIP programme aims to provide exposure and transfer of knowledge, especially in the processing of concentrates and juices, essential oils, fragrances and perfumeries, pharmaceutical ingredients, herbal and Specialty Natural Products (SNP), nutraceuticals and functional food, flavours and food ingredients, cellulose products, industrial enzymes, cosmetics and toiletries, and bio-products. The programme had conducted 27 agribusiness-related courses from 2012 to 2016 involving 1,528 participants.



SEDIA researchers have also completed six R&D projects under the 1RDCI-SAIP Programme, three of which were funded by MOSTI: The development of Production Protocols to commercialise production of Tea Tree Oil – *Melaleuca Alternifolia*; TF0206A106 (MOSTI), Integrated Herbal Medicine Knowledge-Based Database; TF0309C056 (MOSTI), and the phytochemistry of *Centella asiatica* (pegaga).

Another notable project under SDC, is the establishment of an Incubator Centre for the Creative Content Development in Sabah. The centre, also known as the Sabah Animation Creative Content Centre (SAC3), is one of SDC initiatives to support the creative industry under the SDC programme. The Federal and State governments have provided the assistance to allot funds to establish the centre as an incubator facility to help nurture local animation and content development talent among Malaysians.

SEDIA is working closely with University College Sabah Foundation (UCSF), who is the sole operator for the centre. As a start-up for its operation, the centre is focusing on four areas, specifically; animation, visual, film & documentary and broadcasting and will acquire the latest equipment (hardware and software), facilities, industry experts and specialists. The centre's objective is to establish an incubation centre for Creative Content Development that can provide an ecosystem that has the following characteristics:

- Dynamic state-of-the-art infrastructure and training facilities;
- Mentorship & industry coaching by local and international experts;
- Skills development, knowledge worker & talent pool creation, incubation, IP creation & protection, funding, and marketing;
- Creative environment that can promote the growth and development of Sabah's Creative Industry.

In 2016, SAC3 equipped itself with ICT equipment and accommodated more than 200 students with the introduction of the first seven new courses by the centre. SAC3 has indubitably paved the trend for the creative industry in the state of Sabah in addressing the still inadequate infrastructure and educational/training facilities, expertise and technological equipment to propel the growth of the creative industry. The project has achieved its target and the desired outcome based on the initial planning of SAC3. Further to that, SAC3 has successfully completed two outsourcing projects in 2015 namely :

1. Kuku Harajuku (Vision Animation)
2. Magical Cookbook (IPCC)

SAC3 will continue to get more outsourcing projects to ensure sustainability and works toward financial independence.

## OTHER INVESTMENT AGENCIES

### MALAYSIA DIGITAL ECONOMY CORPORATION (MDEC)

Prime Minister Dato' Sri Najib Tun Abdul Razak declared 2017 as the "Year of the Internet Economy" for Malaysia. A key note to take in is that the digital economy is not merely a simple constituent of the real economy but embodies an integral cog that drives and catalyses the real economy.

Malaysia Digital Economy Corporation (MDEC) is at the forefront of the digital economy endeavor in Malaysia. Our name change, which took place in conjunction with our 20<sup>th</sup> anniversary last year in April was a start. More than just a name change, it acts as a reminder to ourselves of the importance of digital economy.

### MDEC Accomplishments in 2016

2016 was an exceptional year for Malaysia Digital Economic Corporation (MDEC) as the company successfully clinched numerous milestones. This shed some light on its ability to effectively spearhead substantial growth in investments and export sales from MSC Malaysia companies despite the challenging global economy.

Under the tutelage and guidance of Dato' Yasmin Mahmood and his senior leadership team, it can be indisputably noted that the organisation has overseen a significant increase in effort in growing the country's digital economy as well as industry development.

A total of 336 new companies were awarded MSC-Status in 2016 accumulating RM6.43 billion in approved investments. Of that, RM3.53 billion or 55 per cent accounted for domestic investments, while foreign investments came to RM2.9 billion. Approximately 18,171 jobs are forecast to be generated by these investments.

Our unwavering commitment and efforts have aided in our goal to contribute to the growth of Malaysia's Digital Economy contribution to the GDP.

Dubbed the fastest growing sector of the economy, the digital economy contributes to 17.8 per cent of the country's GDP.

Propagating Digital Inclusivity For Malaysia to build a vibrant Digital Economy, digital inclusivity is pivotal as our people are the key drivers to the larger economy.

Of the five catalysts of the Digital Economy, the nurturing and development of the local talent pool remains a very important one. With the objective of advancing the Internet Economy in mind, the Prime Minister launched the #mydigitalmaker movement in 2016. The movement, catalysed by MDEC, purports to cultivate and refine the interests and skills of Malaysian students in the hope to create future digital innovators. It incorporates the integration of Computational Thinking and Computer Science into the formal school curriculum by the MoE and the grooming of high potential young "digital makers" by the industry and universities via extra-curricular activities.

This movement involves all national schools nationwide and has had a lasting impact on over 10,000 students. It continues with the already established work done in the Higher Education space in collaboration with the Ministry of Higher Education (MoHE) to substantiate the industry relevance of digital technology related tertiary courses. Digital inclusivity is vital for Malaysia to construct a vibrant Digital Economy as our people are the indispensable asset in driving the larger economy.

The eRezeki and eUsahawan initiatives launched in 2015 to target key communities such as youth, SMEs, micro entrepreneurs and the B40, have benefitted more than 100,000 Malaysians.

### E-Commerce

According to A.T. Kearney findings under the National E-Commerce Strategic Roadmap, the nation is at a turning point of e-commerce growth that can be accelerated through government involvement.

In Malaysia's bid to transcend beyond the early stage, it requires a strong support as well as a focused government intervention to propel it forward to the growth stage. Efforts such as #MYCYBERSALE which commenced in 2014, has glossed in RM 67 million Gross Merchandise Value (GMV) in 2014, RM117 million in 2015 and RM211 million last year. This was duly made possible by close cooperation with our eCommerce ecosystem players, thus transforming Malaysia's e-commerce landscape.

#MYCYBERSALE campaign also helped increase the visibility of Malaysian SMEs. For SMEs the ability to engage in this digital economy is crucial not only to their success, but to their very survival. The recent #MYCYBERSALE organised by MDEC saw that 75 per cent of the participating eTailers were SMEs that contributed RM94 million to the RM211 million Gross Market Value achieved in 2016. We want to see more SMEs adopt eCommerce to benefit from the growth of eCommerce in the country.

### **Big Data Analytic**

As of August 2016, Malaysia became home to 22 multinational BDA companies from six countries; a testament to the nation's steady progress as a leading BDA solutions hub in South East Asia.

MDEC is at the forefront to transform Malaysia's economy to a digital economy, with the aim to cement the nation's position as the hub in regional BDA solutions and to deliver new values to all sectors. To make this vision a true possibility, MDEC has setup ADAX (ASEAN Data Analytics eXchange), a regional platform that ushers innovative talent development models and showcases the latest BDA technologies. Through ADAX, MDEC aspires to pilot advanced data analytics use cases for the ASEAN region and provide a co-working location for BDA start-ups and accelerators.

Through a myriad of BDA-related outreach activities, MDEC aims to galvanise the mindset of both the public and private sector. The

annual Big Data Week Asia in 2016 attracted over 3,500 participants and was anchored by BIG IT Conference and supported by 16 other satellite events, making it the largest Big Data event in the region. In addition, the National Big App Challenge (BAC) 3.0, where winners of various national-level hackathons were nurtured, mentored and then put through a best-of-the-best challenge. The 2016 edition of BAC impacted over 1,500 participants from over 200 teams, developing applications for the betterment of businesses and the public in general. Through BAC 3.0, we have seen many innovative solutions being developed with one of them being WatchUs, an emergency response solution developed to assist with emergency services by



connecting members of the public to multiple emergency teams directly.

### **Creative Content Technology**

Recently, MDEC signed a Memorandum of Understanding with UOA to set up a Game Hub in Bangsar South which undoubtedly proves its efforts to position Malaysia as the regional game industry development hub and further elevate the burgeoning Malaysian game industry. Projected to be fully operational in the third quarter of 2017, this facility will encompass the principles of a digital hub: promoting unstructured interaction and open innovation. Amongst the key services lined-up: startup incubation, mentoring, creative technology access and COE, funding platforms, and playing home and host to the game developer community. The gaming industry has seen a significant rise here in Malaysia and procured a steady demand with 45 per cent revenue growth from 2013 to 2016 to match the frantic growth in demand (16% forecast from 2014 to 2019, sourced by market research firm, Newzoo). Bandai Namco, a prominent gaming giant with a 66 year history, opened its office in Malaysia in July last year to support their regional game development efforts in art, animation tech and modeling. Bandai's presence in Malaysia will play an active role in developing Malaysia's local games ecosystem and a fine showcase for world-class game studios to invest in Malaysia; and ultimately leading towards our national mission in becoming the leading ASEAN games development hub.

### **DFTZ and Malaysia Digital Hubs**

Recently, the honourable Prime Minister announced the introduction of Digital Free Trade Zone (DFTZ), an initiative driven by MDEC to capitalise on the confluence and exponential growth of the internet economy and cross border eCommerce activities. Touted as the first in the world, the unprecedented DFTZ will attract investments from global eCommerce and internet economy companies, fortifying Malaysia's position as a regional hub for the digital economy. This initiative will help accelerate the development of the eCommerce industry, particularly in facilitating local and regional SMEs to actively participate in cross border trade and increase market access via seamless digital services.

MDEC's latest initiative, the Malaysia Digital Hubs, is a medium where startups and scale-ups co-exist with growth ecosystem players such as venture capitals, accelerators, anchor internet companies, talent builders and mentors. Equipped with high-speed broadband and lifestyle amenities, the digital hubs are owned and operated by the industry where MDEC will certify them with Digital Hub status that comes with incentives.

As an additional measure to attract world-class in-demand startups and ecosystem players, Malaysia is also introducing a new pass called Foreign Knowledge Entrepreneurs to accelerate entry of global entrepreneurs into Malaysia.

For 2017, we hope to seize opportunities that will accelerate the growth of

Internet Economy. Strong support from the government will help in achieving our goals and strengthening Malaysia's proposition as the ideal Internet Economy in ASEAN.

### **INVESTKL**

As we move into the new year, we can reflect on what has been an exceptionally interesting and turbulent year in 2016, full of unprecedented and unexpected events.

Despite the uncertainties and unpredictability, it was encouraging to see a myriad of positive signs and news flow for Greater Kuala Lumpur (Greater KL) and Malaysia last year. It was also welcoming news to note that Greater KL and Malaysia have the right ingredients to attract large global Multinational Companies (MNCs) such as those listed in the Fortune 500 and Forbes 2000 to set up their regional businesses, innovation and talent hubs in Greater KL and strategically grow their businesses in Asia.

The 2016 report card proves that Greater KL remains a prime and ideal investment destination as InvestKL managed to achieve a stretch target of securing 13 MNCs to establish their regional offices in Greater KL or expand their footprint in the Asia region, amid global uncertainties and economic slowdown. This remarkable result has been driven by the Greater KL's attractiveness and strong propositions as an investment destination, its ease of doing business and competitive cost structure.



Of the 13 MNCs, five are European, three are from the USA and the remaining are from the Asia-Pacific and Gulf regions. The principal areas of operation include oil & gas, healthcare, commodities, technology and engineering services.

In 2016, some notable MNCs who chose Greater KL as their regional headquarters include Germany-based industrial technology provider Voith, the global healthcare company based in Switzerland, Novartis International and Oceaneering International Inc..

Companies such as US-based Oracle Corporation have recently announced that it will set up a Digital Sales Hub in Greater KL. This hub, which will create at least 200 new jobs, will service its customers from 23 countries; while China-based China Railway Group (CREC) has also announced its plans to open a US\$2 billion regional centre in Greater KL.

An important point to note is that MNCs are now choosing Greater KL as their hub for business services and innovation – roles that are on the higher end of the value chain.

In order to continue attracting the top-tier Fortune 500 and Forbes 2000 MNCs to invest in Greater KL, several approaches have been identified. InvestKL will deepen our existing collaboration with our alliance partners; Foreign Embassies, work with Government agencies including MIDA and MATRADE as well as leverage on existing relationships between Malaysian embassies

and the local business communities in the countries that they are based in.

InvestKL is also in a good position to capitalise on Greater KL's central location, credibility, robust multi-lingual talent pool, cultural diversity, game-changing infrastructure development and varied choices of business hubs in attracting more hidden champions this year.

Greater KL's supportive ecosystem also represents the starting point for the city's transformation into a hub for business services, innovation and technology-led activities.

The Mass Rapid Transit (MRT) project reached a crucial milestone with the launch of its first phase, the Sungai Buloh-Kajang Line on 16 December 2016, serving 12 stations from Sungai Buloh to Semantan. Upon completion of the second phase scheduled for July 2017, running from Semantan to Kajang, the 51km line is expected to serve an estimated daily ridership of 400,000 passengers.

And over the next several years, there are a series of projects by both government and the private sectors that will significantly transform the city.

An example, is the multi-billion High-Speed Rail (HSR) project. Once the HSR project is completed, travelling from Kuala Lumpur to Singapore will be even more convenient.

The Bandar Malaysia project will also play an essential role in the development, as it synergises with the HSR project.

Once completed, Bandar Malaysia will be one of the key terminals for the HSR and it will also house a Mass Rapid Transit station to make commuting within Kuala Lumpur hassle free. These transportation links will complement the thousands of homes to be built on the 480-over acre site.

Then, there is the Tun Razak Exchange (TRX) project. Currently under construction, it will be a key ingredient that transforms Kuala Lumpur into a serious financial centre. The TRX is expected to house 250 global financial services companies and create some 40,000 skilled and knowledge-based jobs.

In the area of sustainability and environment, the city also has plans to transform Taman Tugu into a world-class iconic park. The RM540 million project, which the first phase is expected to be completed by 2018, will turn Taman Tugu into the city's very own 'Central Park'.

With the various initiatives our government is putting in place to transform our economy, we are indeed on track. Over recent years, many MNCs have discovered the plentiful opportunities present and displayed their confidence in the city's true potential by capitalizing on that and investing significantly in the city.

Overall, InvestKL is satisfied with how 2016 turned out and is poised to go forward strongly in its ultimatum to secure 100 MNCs to Greater KL by 2020.

## HALAL INDUSTRY DEVELOPMENT CORPORATION (HDC)

Malaysia had mapped out the path for the development of the halal industry more than 40 years ago by intensifying measures and initiatives over the years to further accelerate its growth. Malaysia's initiatives in promoting the Halal industry in all sectors including finance, food, pharmaceuticals, logistics and cosmetics are making a substantial contribution to the growth of our economy. This comprehensive ecosystem supports the development of halal-related initiatives to achieve our ambition to make Malaysia the Global Halal Hub.

We are now entering the final phase of the Halal Industry Master Plan (2008–2020) to make Malaysia the Global Halal Reference Centre on Halal integrity know-how and to become the leader in accelerating innovation, production and trade in Halal products and services. Built on past successes and having gained traction and recognition as the leading Global Halal Thought Leadership Centre, Malaysia will pave the way to further invigorate growth in new, emerging and higher value-added areas in halal.

Halal Industry Development Corporation (HDC) has chalked up several milestones since its establishment in 2006 as an international hub for the Halal industry. The strategic approach adopted focuses on the development of six core areas which are:

- Policy and Legislation;
- International Footprint;

- Halal Enterprise Development;
- Bumiputera Development;
- Brand and Promotion; and
- Human Capital Development.

### HALMAS Designated Halal Parks

As of 31 December 2016, there are 15 HALMAS Designated Halal Parks (HDC accredited) throughout the country that have attracted investments valued at RM11.9 billion (2015: RM10.6 billion) and created a total of 11,971 10,941 (2015: 7,749) job opportunities in HALMAS halal parks.

HDC continues to help make Halal Parks become a landmark in Malaysia by attracting foreign companies to invest in these 15 (2015: 14) Halal Parks, including those from the USA, Japan and Taiwan. The leading multinational corporations operating include Kelloggs, Kewpie, Cargill, Coca-Cola, Pure Circle, Oleon, Al-Jomaih Group and PML Dairies.

Interests to invest in Malaysia's Halal Parks received continual growth in 2016. Approvals of projects in 2016 comprise the following projects:

The Johor Halal Park (JHP) operation was granted the HALMAS status by HDC. In addition, the Penang International Halal Hub (PIHH) was also granted HALMAS Status for its Phase 2 expansion project. Details are as follows:

#### Johor Halal Park

The Johor Halal Park (JHP) is a joint venture between UM Land Berhad and Johor State Government.

Out of the total land area of 350 acres, 104 acres of land have been allocated for manufacturing of halal products and the balance is designated for industrial purposes or later to be enlarged as the next phase of the halal park. This development is expected to be completed by the year 2020.

JHP will be the first integrated halal park in Malaysia equipped with world class facilities (includes gas pipelines, gated and guarded ecosystem safeguarded by auxiliary police officers and park maintenance).

The main targeted industries for JHP will be bio-based and halal products' manufacturers. The development of JHP will be in 3 phases culminating to the development of a convention centre and a data centre.

JHP is strategically located (15km to the port of Pasir Gudang and Port of Tanjung Pelepas) and will be an attractive proposition to potential investors especially companies intending to relocate from Singapore. The planned services and facilities will be the first of its kind to showcase a fully integrated halal park operation.

#### Penang International Halal Hub (PIHH)

The first phase of PIHH has been fully sold out, generating approximately RM500 million worth of investments. PIHH is being developed by PIHH Development Sdn. Bhd, also known as Halal Penang, a subsidiary of Penang Development Corporation.

The second phase of development on an area of 100

acres is named as the Penang Halal Industrial Park Phase 2 @ Food Zone (PHIPP2). Both the PHIPP 1 and PHIPP2 are under the same entity.

A company that was granted tax incentives under the Halal Industry Player (manufacturer) category is as follows:

### **Unigra Group**

Unigra SRL from Italy, is one of the world leaders in oil and vegetal fat processing, raw materials and semi-finished products for the food industry, the pastry, bakery and professional ice cream subsector. Unigra SRL has identified Malaysia to be the group's first overseas investment destination for its manufacturing plant outside Italy in the halal related project. One of the main reasons for selecting Malaysia was to leverage on the various FTAs i.e. preferential tariff rates in targeted countries.

The group has allocated approximately RM180 million to be invested in the specialty processed food business in POIC Tanjung Langsat, Johor. The group's target markets are in the Asia-Pacific region and the technologies used will be akin to its operation in Italy (fully automated). Due to its high degree of automation, the size of the workforce required is between 70 to 100 workers. The operations in Malaysia will also consist of an R&D facility to undertake quality and formulation improvement on the products manufactured.

### **World Halal Conference (WHC) 2016**

In conjunction with WHC 2016, a separate session i.e. the

Breakfast Networking Session was held in collaboration with MIDA on 31 March 2016. The objective of the session was to disseminate information on investment opportunities in Malaysia in the halal industry as well as understanding the whole ecosystem of Halal, including what it represents and the market potential for halal products.

The potential investments identified in the halal business totalled RM920 million. As of 31 December 2016, the realised investments amounted to approximately RM500 million. These included investments from BRF Asia, Kawan Food and Perescor.

Through various initiatives such as intellectual conferences, international collaborations, innovation initiatives and trade-investment promotions, Malaysia is now recognised as the leader in the global Halal hub and has set benchmarks for others to emulate.

## **BIOECONOMY CORPORATION**

The Malaysian bio-based industry is in the final third phase of the National Biotechnology Policy (NBP) – Going Global. This year also witnessed the rebranding of Malaysian Biotechnology Corporation (BiotechCorp) to Malaysian Bioeconomy Development Corporation (Bioeconomy Corporation). With this rebranding, the Government through MOSTI demonstrated its commitment towards pursuing the bioeconomy agenda and for the bio-based sector to be an important economic contributor towards the national economy.

In relation to the expansion of scopes and direction, the Bioeconomy Corporation will be the economic development agency for the bio-based domain and to oversee the industry and technologies as to be able to implement the bioeconomy agenda for Malaysia.

As of December 2016, Bioeconomy Corporation has successfully built a network of 278 BioNexus status companies accounting for over RM6.5 billion in approved investments in BioMedical, AgBiotech and BioIndustrial sectors. In 2016, 17 new companies have been successfully awarded the BioNexus Status. Total investments reported by BioNexus companies in 2016, amounts to RM308 million, of which RM184 million was contributed by the AgBiotech sector, RM63 million by the BioMedical sector, and RM61 million contributed by the BioIndustrial sector.

Bioeconomy Corporation also facilitates, monitors, and coordinates activities to drive the Bioeconomy Transformation Programme (BTP), with strong participation from the public and private sectors. As of December 2016, a total of 61 BTP projects has been attained, comprising 31 projects under BioIndustrial, 22 projects under AgBiotech, and eight projects under BioMedical. These 61 BTP Trigger Projects will collectively contribute an estimated GNI of RM6.22 billion by 2020, create 26,550 employment opportunities, and procure RM18.6 billion in investment. In term of investments, a target to acquire RM15 billion has been set for Phase III of the NBP,

as well as to realise approved investments accumulated in Phase I and Phase II. Several key projects under both BioNexus and BTP have so far substantially brought in investment numbers.

Under the AgBiotech sector, an approved investment of RM134 million was recorded by a local joint-venture BioNexus company for the commercialisation of white shrimps and tiger prawns. The company has been appointed by the Department of Fisheries Malaysia as the anchor company for Entry Point Project 6 (EPP6) to undertake an integrated shrimp farming project in Bio-Desaru, Johor. Another project with approved investment of RM100 million by a local conglomerate was awarded BTP status for the production of advanced bio-therapeutic extract (ATE) from *cocos nutrifera* milk for health and wellness products.

In the BioIndustrial sector, BTP status projects were dominated by investments in the production of biogas. The major ventures consist of investments worth RM175 million for the setting up of 14 biogas power plants at selected FELDA palm oil mills; RM110 million for a 10 MV palm oil biomass power generation plant in Mukah, Sarawak; and RM106 million for a 9.95 MV rice husk and woodchip biomass power generation plant in Naka, Kedah.

An investment of RM54 million by a local BioNexus company based in Perak was also noted, for the commercialisation of biological treatment systems for industrial effluents such as

waste from chemical plants, pharmaceutical, pulp and paper industry, and landfill leachate. The treatment system utilises ultrasound anaerobic granular-sludge bioreactor technology and its initial target market is palm oil mills for the treatment of palm oil mill effluent (POME).

As for the BioMedical sector, key investments approved under BTP included the building of an integrated bio-based and synthetic pharmaceuticals plant for intermediate and finished products worth RM300 million at Kulim High Tech Park, Kedah; an expansion project by a MNC based in Penang for its sterile infusion solution plant; and the setting up of an R&D centre and a formulation plant costing RM196 million to develop generic medicines for regulated and semi-regulated markets. A BioNexus project worth RM44.6 million was also approved under the BioMedical sector for the commercialisation of biologically active substances that are derived from culture medium containing amniotic fluid separated mesenchymal stem cells (MSCs). The company intends to market the product as a complement to stem cell therapy provided by other stem cell companies.

The year 2016 also witnessed several breakthroughs in terms of fund sourcing in the bio-based industry. Green Lagoon Technology Sdn Bhd (GLT) which specialises in renewable energy became the first biotechnology company in Malaysia to successfully raise funds through an equity crowdfunding platform on CrowdPlus.asia. The fundraising activity surpassed its minimum target of RM400, 000,

performing above expectations by raising RM800,000.

Green & Smart Sdn Bhd is a BioNexus status company offering green solutions in wastewater treatment and renewable energy. The holding company of the group, Green & Smart Holding PLC was listed on the AIM, London Stock Exchange in May 2016 and had successfully raised £4mil with an average market capitalisation of £24.9mil.

In ensuring the success of Bioeconomy Malaysia, Bioeconomy Corporation seeks to work in tandem with related public and private institutions. In addition to the significant economic impacts, the Bioeconomy Malaysia initiative will also benefit society and the nation by improving the income and well-being of the populace, promoting a green economy, and contributing to long-term economic and environmental sustainability.

### **TALENT CORPORATION MALAYSIA BERHAD (TalentCorp)**

Despite a challenging global environment and muted economic growth at home, 2016 saw continued demand for talent as more Malaysian companies became regional champions and a growing number of multinational corporations established their operations in Malaysia. Talent Corporation Malaysia (TalentCorp), established on 1 January 2011 under the Prime Minister's Department, formulates and facilitates initiatives to address the availability of talent in line with



the needs of the country's economic transformation. To ensure our leading employers have a sustainable pool of talent to fuel their growth and investments, TalentCorp collaborates closely with key stakeholders in the public and private sectors to enhance graduate employability, optimise Malaysian professionals, engage Malaysians abroad and facilitate foreign talent.

### Malaysians at Home

#### Enhancing graduate employability

Given that the immediate source of top talent for Malaysia's key industries is the pool of local graduates, TalentCorp's main priority in 2016 was addressing key industries' demand for industry-ready graduates. Towards this, we partnered with the Ministry of Higher Education (MoHE) and key industry players on a programme under the Industry-Academia Collaboration (IAC). The IAC's main aim is to produce industry-ready graduates with competencies in both technical and soft skills.

In April 2015, the IAC initiative for the Electrical & Electronics (E&E) sector was launched by the Minister of International Trade and Industry YB Dato' Sri Mustapa Mohamed to catalyse greater industry-academia collaboration towards producing industry-ready graduates. This pilot initiative under IAC saw 14 leading employers partnering with nine public universities to address skill gaps within seven key technology clusters in E&E:

- Integrated Circuit Design and Embedded System, which both reached the

implementation stage last year;

- Wafer Fabrication, and Solar and Advanced Manufacturing, which are currently in the planning and strategizing stages;
- Wireless Communications (Radio Frequency) and Opto/LED, which will commence planning in late 2017.

In September 2016, the IAC for the Global Business Services (GBS) sector was launched by Deputy Minister of Higher Education YB Datuk Dr. Mary Yap Kain Ching towards enhancing graduate employability. This second initiative under IAC involves creating awareness; providing internship & certification opportunities; implementing curriculum embedment; organising industry-focused competitions and boot camps; and upskilling graduates.

The Industry Engagement Zone career services centres, or Ind-E-Zone, are an initiative introduced by TalentCorp in November 2014 to enhance career services at public universities. Designed to be a one-stop career information centre within university campuses, Ind-E-Zone enables universities and leading employers to work together to educate students on internship and career opportunities within Malaysia's key industries. Four Ind-E-Zone centres were established by TalentCorp in 2016, bringing the total to 14 centres nationwide including in Sabah and Sarawak.

TalentCorp's Structured Internship Programme (SIP) provides undergraduates with the opportunity to experience a high-value internship experience while enabling endorsed companies to benefit from a tax deduction incentive for training-related expenses. More than 15,000 students benefited from the opportunity





to develop industry-specific knowledge and skills through SIP in 2016. Further, under the Government's announcement for Budget 2017, these tax incentives will be extended to 2019 and will be made applicable to employers providing quality internships to students pursuing undergraduate degrees, diplomas and the Malaysian Skills Certificate (SKM) Level 3 and above under technical and vocational education and training (TVET) programmes.

Through the Scholarship Talent Attraction & Retention (STAR) initiative, the Government has made available Government-funded graduate scholars to serve their bond of service by working in the private sector with leading investor companies in Malaysia. In 2016 under STAR, over 1,200 scholars served their bond by working with over 800 employers across key sectors ranging from oil & gas to professional services and manufacturing.

The myASEANinternship programme is a collaboration between the Ministry of International Trade and Industry (MITI) and TalentCorp

which aims to increase overall awareness on ASEAN among youth in Malaysia by offering regional internships to high-achieving students from local and overseas universities across ASEAN. In 2016, the programme's student intake reached 71 interns compared with 40 interns in its maiden year. Close to 30 leading Malaysian and multinational companies also participated in the programme last year – more than double the number of employers who participated when myASEANinternship was launched in 2015 by TalentCorp and MITI.

Another collaboration between TalentCorp and MITI known as the MyAPEC YouthConnect programme was launched in 2016 to nurture Malaysia's talents to be more internationally dynamic and competitive, while positioning Malaysia as a key talent destination through leveraging the integration of economies in the Asia-Pacific region. Close to 40 Malaysian employers – including TM, iflix, Axiata, RHB, and multinationals such as Intel, KPMG, Kimberly-Clark, and First Solar – pledged their commitment to participate in

MyAPEC YouthConnect at the programme's launch.

### **Optimising Malaysian professionals**

Another key focus for TalentCorp in 2016 was increasing the number of women in the workforce and in decision-making roles in the corporate sector. In 2016, our Career Comeback programme helped close to 170 women find opportunities to return to work with over 100 employers across Malaysia's key sectors. As a key enabler to the Malaysian economy, Career Comeback was recognised in Budget 2017 with an allocation to expand nationwide.

2016 also saw Corporate Malaysia achieve a greater Diversity and Inclusion (D&I) in the workforce, with TalentCorp's analysis of FY2015 annual returns of the top 100 public listed companies (PLCs) showing that women held 28 per cent of top management positions, up from 24 per cent in 2013. We also found that three sectors exceeded the 30 per cent target of women in decision-making positions: Consumer Products, Property, and Financial Services.

### **Global talent**

#### **Engaging Malaysians abroad**

TalentCorp works closely with a strong network of leading employers to connect Malaysian professionals abroad with job opportunities in Malaysia in addition to administering the Returning Expert Programme (REP) to support employer efforts to attract talent back home. This initiative was found by the World Bank to be effective in attracting people

with the skills that Malaysia needs and in 2016, TalentCorp approved more than 360 REP applications from high-value C-suite professionals and technical experts. Over 4,000 Malaysian professionals have been approved in total under the REP since the programme was transferred to TalentCorp in January 2011, with a significant number of these professionals returning to senior roles in both local and multinational companies.

### **Facilitating foreign talent**

Foreign talent with the right professional skills will contribute to moving Malaysia's industries up the value chain, particularly in more knowledge-intensive areas. The World Bank had assessed that the Residence Pass-Talent (RP-T), an initiative by TalentCorp and the Immigration Department, is an effective tool in retaining top foreign talent in areas of skills gaps. More than 1,200 expatriates were approved for the RP-T in 2016.

To better facilitate access by leading investors and employers to foreign skill sets entailed, the Immigration Department and TalentCorp jointly oversee the Malaysia Expatriate Talent Service Centre (MYXpats Centre), a one-stop centre that processes and issues all Employment Pass (EP) applications and other EP-related passes for expatriates working in Malaysia. In 2016, 82 per cent of the more than 30,400 EP applications processed by MYXpats were approved within its five-day client charter.

Moving forward, TalentCorp will continue to work closely with

the industry, the Government and the talents themselves to strengthen our impact and outreach in line with Malaysia's high-income aspirations.

## **CREST**

### **Research & Development**

The CREST R&D Grant programme continues to support industry-academia research collaboration with more focus on key clusters and technology domain areas. There is a total of 108 R&D projects in CREST R&D grant portfolio valued at RM106 million with 30 projects completed. Projects with the potential for commercialisation are being identified and supported, while some require subsequent phases of research, several of the current outcomes have already been applied into companies' products and services.

To date, 58 companies and 18 universities are working on the 108 projects. Such collaboration continues to spark new ideas, new innovations and new products while nurturing and growing the pool of sustainable industry-relevant talents, expertise and workforce in the E&E sector. Outcomes of the completed R&D projects are shared with the industry and academia community through the Reveal & Discover platform, with the intent to promote further collaboration and expand the benefit to a larger group. CREST sponsored researchers to share and showcase their findings in conferences such as IEMT-EMAP 2016 and Malaysian Telemedicine Conference 2016, in addition

to conducting three separate Reveal & Discover lectures to share research findings with the community to encourage participation in new research areas such as machine learning for manufacturing scheduling, advanced 3D packaging, and mobile healthcare solutions.

### **Talent Development**

In 2016, CREST expanded its initiative on the industry-relevant graduate program by hosting more than 300 undergraduates in various boot camps targeted to specific clusters – IoT Boot Camp, Optoelectronic-Semiconductor Boot Camp and Medical Devices Bootcamp. With more than 200 high school students, these boot camps and the Youth Boot Camps became the seeds which successfully implanted technopreneurial skills among these youths. Selected projects were given a seed fund for developing their ideas into prototypes to be showcased at a Grand Finale in early 2017. CREST continues to provide industry-driven training and lectures to university students through Industry Lecture Series and technical workshops at UiTM, UM, USM, UniMAP and Monash University Malaysia. More than 750 students benefited from such programmes. All these wouldn't have been conceived without the unwavering commitment and support from industry partners like Intel, Motorola, Vitrox, UST Global, and Penchem.

### **Industry Development Optoelectronics/Light Emitted Diode (LED)/ Solid-State Lighting (SSL)/ Development Cluster**

In January 2016, the Gallium

Nitride on Gallium Nitride (GaN-on-GaN) project funded by CREST successfully grew the first epitaxy crystal in Malaysia and developed its packaged LED by April, 2016. In doing so, we have established for the first time, upstream LED research capabilities in Malaysia alongside our industry and academic partners. Still on-track with its five-year journey, the team moves into 2017 to enhance research outcomes and capabilities for its next generation LED devices.

Beyond the Solid-State Lighting, the team is considering research in GaN power devices and communications for the next wave of semiconductor technology.

#### **The Embedded Systems Development/Internet of Things (IoT) Development Cluster**

CREST's Internet of Things (IoT) cluster continues to build momentum in healthcare, transportation and manufacturing market verticals. To date, the Connected Healthcare and iTransport IoT clusters have more than 230 participants from more than 100 organisations. It has also kick-started more than 13 industry-university collaborative R&D projects. Phase one of the iTransport cluster's demo pilot project jointly executed by Intel, DIGI, Vitrox and USM has concluded, with key opportunities identified.

The Connected Healthcare cluster continues to spearhead telemedicine awareness with the 2nd Telemedicine Conference held from 16 to 18 August 2016, where

more than 270 industry players convened to discuss best practices and health innovation. In his opening keynote, Director General of Health Malaysia, Datuk Dr. Noor Hisham Abdullah initiated the formation of the Telemedicine Development Group - a Government, Industry and Academia collaborative initiative to further advance the telehealth movement in Malaysia.

In the spirit of driving innovation, the Telemedicine Innovation Challenge 2016 has attracted more than 14 participating teams ranging from medical doctors, researchers, industry and university students. Two of the 2015 Telemedicine Innovation Challenge teams, MyCapsule and InnoASH have since formed as new start-ups. On 16 August 2016, Microsoft and CREST signed a MoU to establish the first Digital Health Innovation Hub in Malaysia to nurture healthcare innovation, further strengthening the electronics medical devices manufacturing and R&D ecosystem in the country.

Building on more than 40 years of electronics manufacturing strength, CREST has worked closely with MIDA and MDEC to get an IoT enabled medical device start-up, M3dicine Technology Sdn. Bhd. from Australia to choose Malaysia as its worldwide manufacturing and distribution operation hub; in line with the E&E industry's aspiration to focus on high value electronics medical devices manufacturing. With this engagement, a real and apparent healthcare market requirement have surfaced

in the form of automated medical data analytics with artificial intelligence, to diagnose medical conditions. Work is currently in progress to establish the medical data artificial intelligent expertise in Malaysia with the assistance from world renowned researchers to support this unmet need and gap.

On the infrastructure side, CREST IoT Cloud Data Centre (ICDC) has added a few more industry platforms since its formation in 2015 by its founding members of Kontron, Cisco, Intel, Dell and IBM. ICDC users now has an access to IoT platforms such as Intel Atlantic Ridge, Cisco, IBM Bluemix, Apache Hadoop, MIMOS Mi-MIST, Microsoft IoT suites, and other available on a request basis (Cisco IoT, Fusionex, Thingworks, SAS, Cloudera, and more).

#### **Smart Manufacturing Development Cluster**

The cluster is gaining traction with industry gearing up to Industry 4.0 challenges and implementation within Malaysian factories. IoT in Manufacturing, Robotic and Automation as well Manufacturing Execution System are some of the cores being identified and worked on under this cluster. Through proof of concept projects in these areas, we are unearthing valuable insight into Industry 4.0 adoption by Malaysian companies. The cluster group works with agencies such as Majlis Profesor Negara, Akademi Sains Malaysia, PSDC, and MDEC.



### Events and Other Knowledge Sharing Sessions

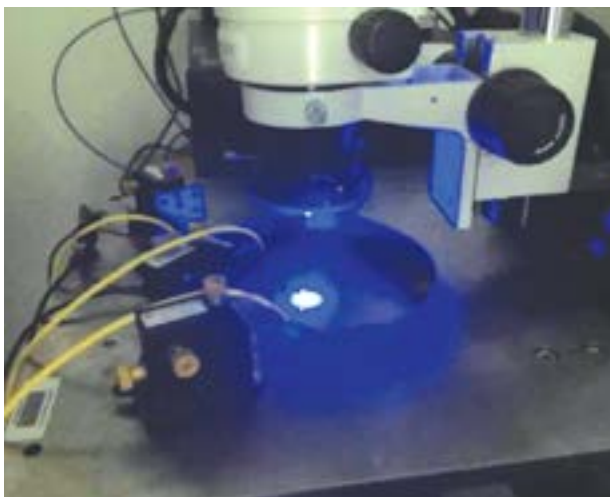
In support of the semiconductor materials and packaging industry which has been one of the strengths of our Malaysian companies, CREST has agreed to become the secretariat for the 37<sup>th</sup> International Electronics Manufacturing Technology IEMT-CPMT event which was held at G Hotel in September 2016. This event attracted speakers from the USA, Germany, Republic of Korea, Taiwan and others and has been a great success with more than 400 semiconductor packaging professionals congregating in Penang for 3 days.

The Industry Academia Forum, in its second year running, had industry professionals and academia discussed topics ranging from the Materials and Packaging, Wide Band Semiconductor and Smart Manufacturing over 2 days. An extension of GaN on GaN into other end applications

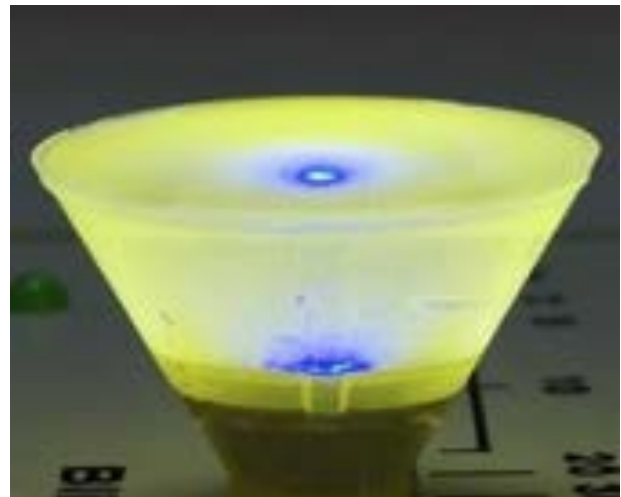
like power devices, laser diode, visible light communication was formulated from Semiconductor Industry-Academia Forum in April, 2016 where a cluster programme on Wide Bandgap Semiconductor was formulated and proposed to MoHE for LRGs funding – which was later approved for RM6.5 million over three years with Universiti Malaya as the lead university collaborating with USM, UniMAP, UTHM and UKM, plus various industry partners. A similar session was carried out in October 2016, Electronic Smart Manufacturing brought together participants from 16 companies, eight universities and four agencies by which key initiatives in IoT in Manufacturing, Automation and Robotics, Manufacturing Execution System and Supply Chain System were formulated. The forum attracted around 100 participants and has generated more than 10 new projects for collaboration.

### CREST Place – a start-up development center

Our center for startups, CREST Place has continued to grow the number of entrepreneurs who converge to the space to mingle with like-minded individuals and entities and to test out ideas. At the verge of being at full capacity, we now host more than 15 entrepreneurial companies from various areas such as IC design, IoT, robotics design and training, electronics design and consultancy and E-Commerce. CREST Place also physically hosts the CREST IoT Cloud Data Centre (ICDC). CREST is in talks with other institutions to develop similar centers around the nation.



*First Malaysia growth epitaxial lit up in January, 2016*



*First fully packaged LED from the GaN-on-GaN project*



4

“FUTURE OF  
INVESTMENTS IN MALAYSIA”



## SMART MANUFACTURING

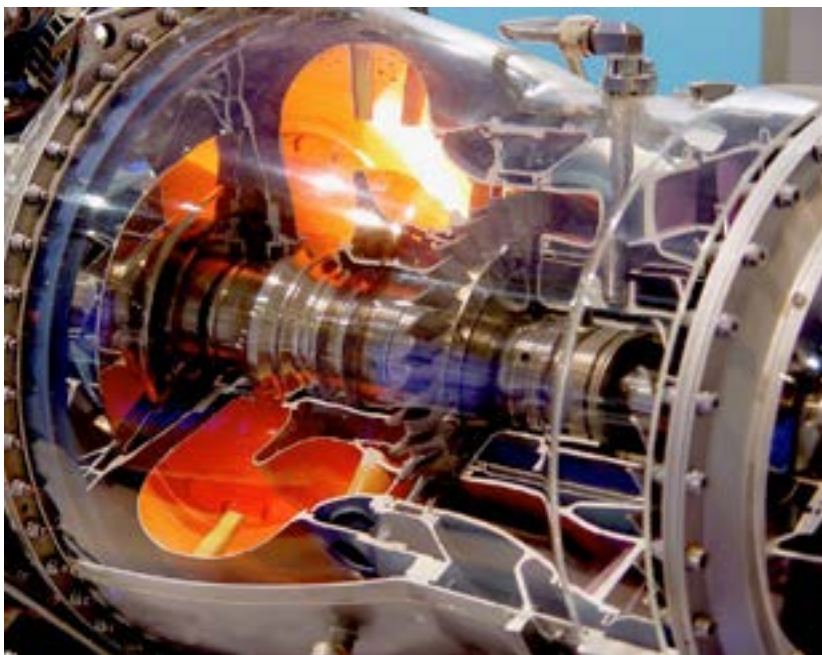
With increasing competition from emerging markets and advent of new technologies, Malaysia is facing complex challenges. Within this challenging environment, the nation sees a windows of opportunity. In such an environment, nations across the globe realises and begins to capitalise on latest technologies. Not to be left behind, Malaysia adapts and changes by embracing new opportunities made available through the Fourth Industrial Revolution (Industry 4.0) mainly smart manufacturing processes and technologies to enhance production flexibility and efficiency.

The term smart manufacturing is often used in combination with 'Industrial Internet of Things' (IIoT), 'Smart Factory', or 'Industry 4.0'. Smart manufacturing embodies the capability to connect production systems and processes to radically transform production value chains and business models. Interconnectivity, interdependence and integration builds the core components of smart manufacturing. This integration using technologies such as wireless sensor networks, mobile interaction and data fusion gives rise to better use of data to deliver more information which will leads to greater productivity and reduction in waste.

Analysts have predicted that in next five years, more than 80 per cent of global companies would have digitised the value chains. This prediction is further supported by BCC Research which indicates a market opportunity of US\$392 billion in 2020, from US\$131 billion in 2015.

Through the adoption of smart manufacturing in Malaysia, the nation will see new innovation opportunities that will optimise the manufacturing and services industry. This optimisation will enable improved product quality, energy efficiency and safer plant floors. An increase in productivity, through smart manufacturing will allow companies to address manpower shortage.





Malaysia provides business opportunities in various sectors and processes. Within the manufacturing sector, the use of additive manufacturing is being encouraged particularly for automotive, aerospace, electronic consumer products and medical/dental devices. Machine to Machine (M2M) applications is an emerging field and opportunities are available to investors to venture into sensor technology projects in the country.

New investments in advanced Internet of Things (IoT) enabled technologies and ecosystem, will expand logistics value chain including warehouse operations, freight transportation and last mile delivery in Malaysia. These capabilities, build into the supply chain allows companies monitor the status of assets, parcels, and people in real time throughout the value chain, increasing customer satisfaction and create competitive advantage for the companies.

Other emerging opportunities for Malaysia is in the area of

industrial data services, cloud based services, industrial mobility and cyber security services.

With the country progressing towards a developed nation status, adoption of smart manufacturing enhances its competitiveness. Smart manufacturing ensures a more inclusive growth and sustainable development, to move the economy up the value chain as well as rebranding Malaysia's image as the centre for advanced technology and global activities.

#### **FACILITATION AND OPPORTUNITIES - FTAs/ GRANTS/INCENTIVES/TALENT**

**Free Trade Agreements (FTAs)**  
An important contributor to Malaysia's economic growth and development is international trade hence its policy towards to creating a more liberalizing and fair trading environment. Malaysia continues to pursue regional and bilateral trading arrangements to complement the rule-based multilateral

trading system under World Trade Organization (WTO) which it prioritises. Free Trade Agreements (FTAs) are generally aimed at providing the means to achieve quicker and higher levels of liberalisation that would create effective market access between the participants of the FTA. Traditionally confined to trade in goods, with the establishment of the WTO, trade in services has been included in many FTAs.

To date, Malaysia has implemented seven bilateral FTAs and six regional FTAs. With that in effect, Malaysia is currently negotiating three FTAs. They are Malaysia-European Free Trade Area Economic Partnership Agreement (MEEPA), Regional Comprehensive Economic Partnership (RCEP) and ASEAN-HK Free Trade Agreement (AHKFTA).

Malaysia has established FTAs with Japan, Pakistan, New Zealand, India, Chile and Australia. At the regional level, Malaysia and its ASEAN partners have conclude FTAs with PRC, Japan, Republic of Korea and India, as well as Australia and New Zealand. The Trans Pacific Partnership Agreement (TPPA) has been signed but is pending ratification and entry into force.

Notwithstanding the current position of the new US Administration on TPPA, we will continue to engage with our American colleagues to strengthen our bilateral trade and economic relations, given the US' importance as our third largest trading partner and a major source of investment.



The investment chapter of FTAs is usually balanced. It contains liberalisation, facilitation and promotion, and protection components. Investment provisions in the FTAs are intended to provide for a stable, predictable, and transparent framework for attracting FDIs and maximising the benefits to the host country. It will also enhance the bilateral trade and investment relationship by increasing market access through liberalisation and providing an enabling environment which protects the operations of the foreign FTA partners.

Malaysia's objectives in negotiating FTA's are to seek better market access by addressing tariffs and non-tariff measures, further facilitate and promote trade, investment and economic development, enhance the competitiveness of Malaysian exporters and build capacity in specific targeted areas through technical cooperation and collaboration.

FTAs are an effective way for Malaysian companies to gain access to foreign markets. The FTAs reduce barriers to exports, protect interest and enhance rule of law in FTA partner country. Similarly, being an open economy, Malaysia has benefited from FDIs. It has contributed positively to Malaysia through transfer of capital, technology and management resources. One of the spill-over effects of this benefit is the creation of employment and job opportunities in the country.

Agreements such the Malaysia - EU FTA (MEUFTA) and Regional Comprehensive Economic Partnership Agreement (RCEP)

are setting the stage for "new generation" FTAs where more commitments are given to areas such as government procurement, intellectual property rights, labor standards and Government-Linked Companies (GLCs). These changes to the FTAs brings new opportunities to Malaysia to rise up the value chain, which supports the Malaysia's vision of achieving advanced nation status and a high income nation with greater level of public well-being.

These changes further supports policy improvements that can support Malaysia's business environment and attract a new wave of FDIs that promotes economic diversification.

### **Incentives and Grants**

Incentives, mainly investment incentives both fiscal and non-fiscal steers investment into specific sectors and regions. While this can distort markets, investment incentives provides competitive edge to the host country to attract the right investment and create multiple strategic spill overs. As the nation enters the fourth industrial revolutions, investment incentives attracts FDIs and channels investment into the key drivers of fourth industrial revolution.

R&D, creativity and innovation are essential for moving economies up the value chain, especially in the case of high value-added activities and front-end manufacturing. For this reason, Malaysia's investment and tax incentives are designed to attract greater investments in science and technology, particularly in the promoted sectors.

Malaysia Investment Development Authority (MIDA) as the nation's principal investment promotion agency, is responsible for strategic and conceptualising tax incentives as well as approving standard tax incentives in Malaysia. MIDA leads the National Committee on Investment (NCI), which provides a balanced consensus from members who are senior representatives from several government Ministries and relevant agencies. Through the NCI, MIDA evaluates and decides upon applications for incentives.

Behavioral and locational incentives can be considered as an impetus to induce investors in engaging into selected industries/activities identified by the government (fostering R&D, green initiatives, forming linkages with local firms) to anchor the country's economic growth. The Less Developed Area (LDA) Incentive for instance was introduced in 2015 to encourage more equitable regional development and inclusiveness in the country through substantial employment creation and rural development.

Investors whether new or existing, regardless of equity ownership are eligible for the incentives.

Malaysia welcomes OECD's initiative under the Base Erosion and Profit Shifting Action Plans as it supports sustainable investment decision should be based on the country's economic comparative and competitive advantages and its stable business policies.

MIDA's plays a critical role in managing the misconceptions, and continue to highlight Malaysia's exclusivity, mainly in the availability of advanced infrastructure, competitive talent and supporting industries that underpin high-technology projects.

Malaysia through MIDA, remains committed towards the Sustainable Development Goals (SDGs) agenda ensuring incentives used as policy tools are in tandem with SDGs best practices. A sustainable development can only be attained when incentives for specific industries aim to ensure self-sustained viability and avoid non-sustaining industries at the expense of the economy.

SDG propose that incentives should be assessed in terms of long-term costs and benefits prior to implementation. MIDA has devised a comprehensive Cost and Benefit Analysis (CBA) which is used as a tool to assess the qualitative and quantitative costs and benefits' aspects of each project which is eligible to be incentivised. The analysis provides a holistic and realistic assessment of the net worth of a project towards the economy.

Investments incentives are tied to key performance indicators which require investors to adhere before being considered for any form of extensions of tax exemptions

The 'Ecosystem Approach' embarked by MIDA back in year 2012 is an integrated and holistic approach used to promote the entire value chain of any particular industry cluster. It provides understanding of linkages of all

components as well as activities which contribute to support the delivery of the defined product(s) within the industry cluster, and provide visibility into its value chain. With this information, MIDA will be able to target the first movers pertinent to that particular chain and design its incentive policies effectively to attract these first movers as well as investors which will fill in the gaps in the value chain, if not strengthen it further.

For instance, the solar value chain comprises producers of ingots, solar wafer/cells, solar modules, system integrators and the supporting industries. Once the existing gaps in the solar value chain and the necessary first movers are identified, 'time-based' incentives are then designed and used as a tool to complement the ecosystem.

As part of the 11th Malaysia Plan, the country has identified three catalytic sectors (Chemical, Advanced Electronics and Machinery & Equipment) and two growth sectors (Aerospace & Medical Devices). These sectors leverages on enablers like infrastructure and supporting industries through a cluster-based approach, reducing investors' reliance on increasing tax incentives and aiding the Government to efficiently allocate resources.

Apart from FDIs, Malaysia continues to focus on domestic investments in terms of fiscal and non-fiscal assistance. The Government through MIDA's efforts announced the Domestic Investment Strategic Fund (DISF) in 2012 with the aim to accelerate the shift of Malaysian companies in targeted sectors

to higher value-added, high technology, innovation and knowledge-driven industries.

The initiative includes assistance in the form of matching grants contingent upon investment of the project which is aimed to upgrade Malaysian company's technological capabilities to be competitive internationally if not at par with global players; boost local company's presence in higher value chains and enable capable Malaysian companies to actively participate in the global ecosystem.

Though dedicated to Malaysian companies, the fund is targeted towards strategic priority sectors such as aerospace, medical devices, pharmaceuticals, advanced electronics, machinery and equipment, renewable energy and selected services.

Since its inception, DISF elevated the exports of at least 43 companies which have managed to spread their wings to 24 countries across six continents. Malaysian companies which were awarded with the grant penetrated into 71 new markets from 33 countries, of which 45 new markets were in Asia. More than 32 domestic electrical and electronics (E&E) players successfully outsourced their expertise and catered to approximately 60 Multinational Corporations (MNCs) through the assistance provided by the grant. On the innovation front, the grant enabled more than 20 companies to commercialise their R&D findings and registration of Intellectual Properties (IPs) recorded a significant improvement/new

development in products and processes

Malaysia, through foreign and domestic investment incentives continues to shift Malaysian companies into targeted sector to higher value-added, high technology, innovation and knowledge-driven industries.

### **AUTOMATION/ TRANSFORMATION OF LABOR INTENSIVE INDUSTRIES**

Malaysia is moving towards achieving its goals of becoming an advanced nation by 2020, however the nation has set its eyes on a greater goal. It also focuses on becoming a high income nation with greater level of public well-being. The nation's reliance on low-skilled foreign workers of certain industries in manufacturing sector has proven to be one of the impending factors that prevents this industries from moving up the value chain.

In its effort to facilitate growth in labor intensive industries, Malaysian government has introduced a new incentive to encourage manufacturers to adopt automation in their respective industries. Automation Capital Allowance (ACA) was introduced via Budget 2015. Through this incentive, additional allowance will be provided to manufacturers on investment in automation. This is a strategic move by the government and it is expected to be a key driver in encourage automation in the manufacturing sector. This initiative is in line with 11MP which aims to promote automation to reduce reliance

on low-skilled foreign workers in labor intensive industries.

This strategic initiatives aims to encourage innovation, quick adoption of automation in labor intensive industries and spearhead new automation initiatives. Any manufacturing organisation operating in Malaysia for at least 36 months are eligible for this incentive. Category 1 of ACA is offered to for high labor intensive industries (rubber products, plastics, wood, furniture and textiles), which allocates an automation capital allowance of 200% on the first RM4 million expenditure incurred within three years of assessment from 2015 to 2017. Category 2 of the ACA is an option that is made available for other industries. Under Category 2, manufacturers will be provided with automation capital allowance of 200% on first RM2 million expenditure incurred within 5 years of assessment from 2015 to 2020. Standards and Industrial Research Institute of Malaysia (SIRIM), is a wholly-owned company of the Malaysian Government will be the governing body to ensure the expected results are delivered, while MIDA will remain as the approving body for ACA application.

As of December 2016, MIDA has received 50 applications for ACA, 35 has been approved. Of the 35 approved, 23 applications were approved under Category 1 and the rest were approved under Category 2. Through the automation initiatives implemented by the 25 manufacturers. Collectively they were able to reduce dependence on foreign workers by 20 per cent while increasing

average production volume by 200 to 300 per cent.

The Automation CA is a pragmatic initiative in light of the prevalent over dependency on foreign unskilled labor in the country. This incentive is aimed at encouraging manufacturing companies to engage in innovative and productive activities and swiftly adopting automation, particularly in labor intensive industries. This incentive by the government, through Budget 2015 further allows Malaysia to be competitive with other manufacturing hubs within the region and globally, who have adopted similar initiative such as PRC, Republic of Korea and United States. According to International Federation of Robotics (IFR) publication, PRC, which lags behind Republic of Korea and the USA aims to be reach 100 robots per 10,000 workers in 2020 compared to its current number of 30 robots per 10,000 workers.

Through this initiative, Malaysia as one of the key manufacturing hubs in the region, is building the foundation for smart manufacturing, which is being driven by the fourth industrial revolution. The organisations that have benefited from the Automation Capital Allowance, has in some way embarked on the smart manufacturing path.

GROWTH-



5

“INVESTMENT  
OUTLOOK”



## A RESILIENT MALAYSIA ECONOMY

Malaysia's economy is forecast to remain resilient despite external headwinds with a slightly improved GDP growth projected around 4.3 per cent in 2017 after a growth of 4.2 per cent in 2016.

The World Bank's latest projections say this outlook reflects a gradual slowdown in the growth of consumer spending and investment as global economic growth and commodity prices remain subdued while households adjust to moderating job prospects and fiscal consolidation.

Malaysia's economic risks stem largely from the external factors. They include uncertainties from a rebalancing of the Chinese economy, further declines in global crude oil prices and other

commodities that Malaysia exports, and evolving US economic policies and their impact on global trade, as well as financial flows and exchange rates. Uncertainties in global financial markets could also affect investor and business sentiment.

### Global Investment Flows

Over the medium term, global FDI flows are projected to resume growth in 2017 and to surpass US\$1.8 trillion in 2018, but they will remain below the pre-crisis peak.

UNCTAD reported decrease in global FDI flows of 13 per cent in 2016, reflecting the fragility of the global economy and persistent weakness of aggregate demand, sluggish growth in some commodity exporting countries, effective policy measures to curb tax inversion deals and a slump in multinational corporation (MNC) profits in 2015.

A stormy start in the global commodity and financial markets in 2016 added to the continuing drop in oil prices and increased the economic risks in many parts of the world, according to UNCTAD's World Investment Report 2016.

The growth momentum slowed significantly in some large developed economies since the end of 2015. In developing economies, sluggish aggregate demand, low commodity prices, mounting fiscal and current account imbalances and policy tightening further dampened the growth prospects of many commodity-exporting economies. Elevated geopolitical risks, regional tensions and weather-related shocks were also expected to further amplify the expected downturn.

Factors influencing FDI activities in 2016 and a good part of 2017 include the state of the



USA economy; uncertainty on agreements such as the TPP, RCEP and TTIP; on-going technological change; digital economy; global urbanisation; and offshoring. They are likely to impact on FDI between now and 2018. MNEs have their eyes on longer-term trends such as rising urbanisation in developing and developed countries (eg, potential consumer markets), digital economy and prospective mega groups. Geopolitical uncertainty, debt concerns, terrorism and cyber threats are almost universally considered in a negative light and are likely to dampen FDI activity.

UNCTAD has identified China as one of the most promising investors despite its slowing economy and decreasing demand for oil and minerals and as well as one of the MNEs' three top prospective host countries other than India and the USA.

Malaysia's openness towards FDI and key target areas against the backdrop of rising protectionist sentiments from several countries, Malaysia still remain positively open for businesses from abroad. Foreign investments have played a major role in Malaysia's economic development and will continue to welcome high-quality investments, especially in the catalytic subsectors, namely, chemicals, electrical & electronics, and machinery & equipment, as well as other high potential growth areas including aerospace, medical devices and digital economy.

Being a major beneficiary of FDI as they provide employment opportunities, contribute to Malaysia's exports, allow

local SMEs access to valuable technology transfer and exchange of know-how that are crucial in developing their capabilities and be part of the global supply chain, Malaysia will continue to encourage high-quality FDI.

The Government has also identified the digital economy to be one of the priority areas for future economic growth. In this area alone, Malaysia recorded improvements in new investments to US\$1.5 billion in 2016 from US\$1.05 billion in 2015. The targeted areas for future growth as far as the digital economy is concerned will be on financial technology, growth of start-ups and the development of the world's first cross border trade for SMEs, namely, the Digital Free Trade Zone as announced under Budget 2017.

The information and communication industry has been identified as one of the top promising industries in three regions -- developed countries, developing Asia as well as Latin America and the Caribbean. IPAs in developed countries have identified professional services and computers and electronics as being among the most promising for attracting FDI. For developing and transition regions, the industries most commonly chosen by IPAs for attracting FDI are agriculture, food and beverages, and utilities.

To induce growth, Malaysia has also invested heavily in infrastructure as evidenced through recent key projects such as the Mass Rapid Transit and Pan Borneo Highway

and will continue to invest in major infrastructure such as the High Speed Rail (HSR) project between Kuala Lumpur and Singapore, which will further improve the business environment. This will also improve connectivity within and beyond Malaysia's borders, thus enhancing the country's competitiveness in the region.

### **Productivity and Competitiveness**

According to latest Malaysia Economic Monitor, rising productivity will become the main engine of economic and income growth in Malaysia in the future as traditional drivers of growth are expected to moderate, with capital accumulation facing headwinds and labour force growth gradually slowing down as the Malaysian population ages. With rising total factor productivity, it is envisaged that the rising female labour force participation and increasing human capital through skills upgrading will be the key drivers of future growth towards a high-income economy.

The Government has recognised that there is a need to be a greater resolve in boosting productivity on the domestic front to further drive economic growth, strengthen the fiscal position while ensuring adequate public funding to support continued growth.

Being one of the 17 economies that has implemented reforms in East Asia and the Pacific to improve the business climate for local entrepreneurs, Malaysia is also one of the top performing economies in the region in terms of efficiency and quality of business regulations

measured by the Doing Business report. This has been a result of the Government's continuous reform efforts over the past decade.

While Malaysia has scored well in protecting minority investors, it is also committed to further improving all areas of the business environment. Recent legislation updates such as the new Companies Act are expected to come into force in the first quarter of 2017 and the on-going legislative work on a new Secured Transactions Act are some examples of this vigorous initiative.

Brexit and the US presidential election the United Kingdom's referendum in mid-2016 to leave the European Union or more commonly known as Brexit sent shock waves around the world but Malaysia has taken on the view that the medium to long term impact on the country's trade and investment will be minimal. This is due to Malaysia's strong fundamentals and economic diversification, thus putting the country in a better position to face any uncertainty.

In 2015, the UK was Malaysia's third largest trading partner in the European Union (EU) and the country's fourth largest source of investments. As at 2015, a total of 433 manufacturing projects with UK participation have been implemented and valued at RM6.8 billion in terms of investments. The Government believes that the UK will continue to be a key player through its investments in Malaysia's services sector especially in banking and education, among others.

The UK may no longer be part of the currently negotiated Malaysia-EUFTA but Malaysia will explore the possibility of having a separate bilateral FTA with the country. This is part of Malaysia's efforts to open up further business opportunities with the UK.

The results of the 2016 US presidential election may, however, have a significant impact on Malaysia's economy. President Donald Trump's election promises and his subsequent administrative policy decisions upon taking office in January 2017 will have a ripple effect in one way or the other like in US interest and exchange

rates. The Malaysian ringgit has fallen by seven per cent since November 2016 and is currently hovering around RM4.40 to the US dollar. Malaysia is one of the countries that would be impacted strongly if Trump's protectionist policies are enacted as Malaysia had exported US\$17 billion worth of goods to the USA in 2015. The withdrawal of USA from the Trans Pacific Agreement (TPPA) was one example of the change in policy stance and will have an impact on economies that had been involved in the TPPA negotiations. On this matter, MITI and all relevant ministries will engage with various stakeholders to seek views and feedback on the best way forward. Should the TPPA fail to materialise, Malaysia's focus would be to enhance the economic integration of ASEAN in the context of the ASEAN Economic Community (AEC) Blueprint 2025, push for the timely conclusion of the RCEP, as well as pursue bilateral FTAs including with TPPA members whom Malaysia currently does not have any preferential trading agreement.







SUCCESSFUL  
**INVESTMENT STORIES**





## INTRODUCTION

In the lead-up to Malaysia becoming a high-income economy by 2020 and beyond, MIDA has set in motion various initiatives to energise the manufacturing sector for this important economic transition.

The strategy in place is to have more high-value, diverse and complex products driven by subsectors like pharmaceuticals; medical devices; aerospace; electronics and electrical; and machinery and equipment. This transition will be against a backdrop of incentives for increased R&D, enhanced sustainable

manufacturing practices and greater compliance to global standards.

All these encompass the production of complex and diverse products through the strengthening of the output base and increasing exports of frontier products. There will also be greater automation and innovation-led growth among the various manufacturing entities against a backdrop of an increase in the provision of competitive supply chain enablers and manufacturing locations, and a host of incentives to ramp up the internationalisation of manufacturing entities.

To date, Malaysia has had a number of success stories in drawing in some of the biggest names in the medical devices, pharmaceuticals, aerospace and electronics sectors. Their success start-ups and continued existence in Malaysia speak volumes of the suitability of the country as an ideal manufacturing hub in South East Asia backed by good infrastructure, ample supply of trainable manpower, competitive incentives and good living conditions.



## EUREKA EFEKTIF SDN. BHD.

**Focused on providing pipeline inspection (intelligent pigging) and complimentary pipeline related services**



Sets its focus on



**expanding its export capacity to top foreign markets.**



Has grown from a **service provider** to **manufacturer of polyurethane products**



One of three Malaysian companies that focuses on **high performance mechanical equipment** for oil & gas pipeline cleaning industry.



Obtained **various**



**contract**

services from MNCs i.e. PETRONAS, Shell, ExxonMobil, & Barakah Offshore.

## CYPARK RESOURCES BERHAD

A **successful player** in Renewable energy solar PV, Across multiple locations in Malaysia.

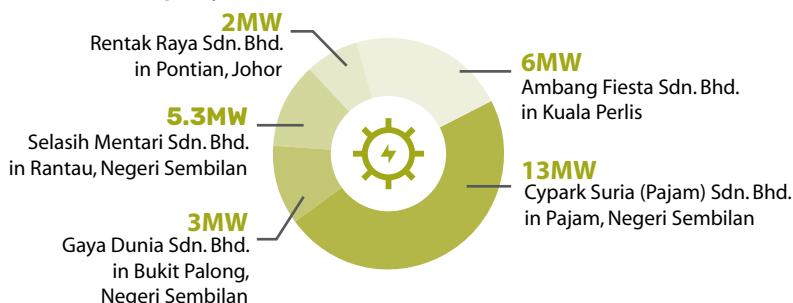


Already completed **12 utility scale solar projects** at six (6) locations in Peninsular Malaysia.

Exported more than **95,000MWh** of green electricity to the grid.

Successfully remediate **600 acres** of contaminated land for all its projects in Peninsular Malaysia.

**Installed Capacity:**



As part of its **"Agriculture Integrated PV" (AIPV)** project, the company successfully integrated **agriculture into its solar parks**, producing both upstream and downstream agriculture based products under the brand name of **"eFRUTZ"**



Venturing into **waste-to-energy (WtE)**, and will be located in Ladang Tanah Merah, Port Dickson, Negeri Sembilan.

With investments of more than

**RM300 million,**

this is Malaysia's first integrated solid waste management system using

**solid waste modular advanced recovery and treatment (SMART) system.**

**BOSTON SCIENTIFIC MEDICAL DEVICE (MALAYSIA) SDN. BHD.**

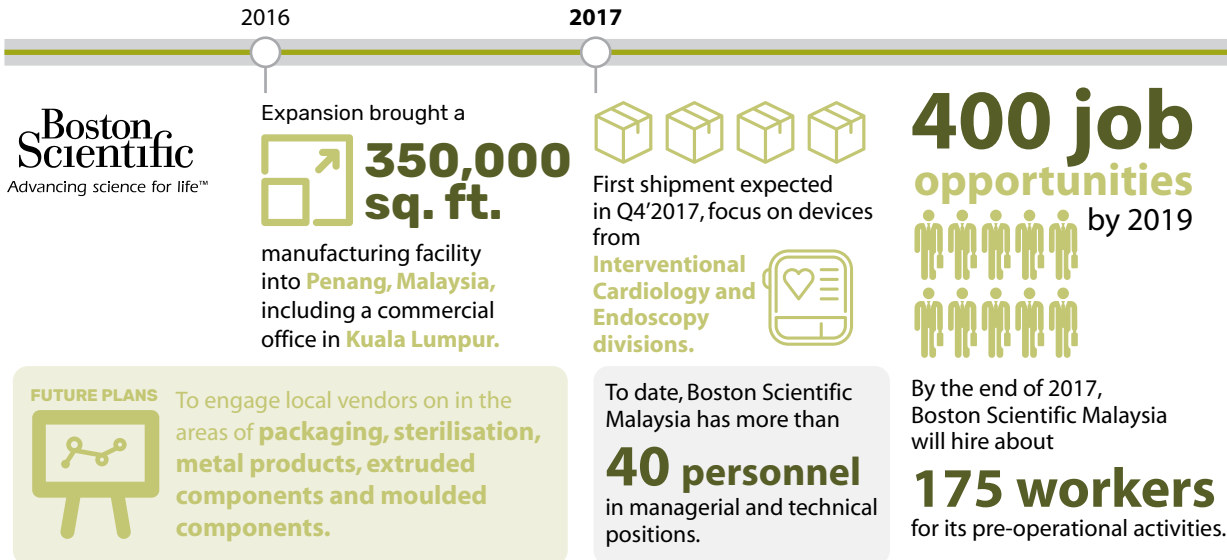
Portfolio of  
**13,000**  
products

under Boston Scientific Corporation Group

with market presence in over  
**100 countries**  
treating **22 million**  
patients each year

Achieved sales of

**USD8.4 billion**  
in 2016

**FINISAR MALAYSIA SDN. BHD.**

A leading US technology company,  
a **global technology leader in optical communications.**

**FINISAR®**



The world-class products enable **high-speed voice, video and data communications for networking, storage, wireless, and cable TV applications.**

The investment will include expansion of it

**100,000 sq ft facility**  
in Chemor, Perak.

This will its total investment in Malaysia to

**RM1 billion**

with potential revenue of

**RM38.5 billion**



over the next ten years.

**FUTURE PLANS**

Expected to invest heavily in sourcing local products as part of its supply chain amounting to **RM3 billion** over the next ten years.

**US160 million**

Invested in Perak, Malaysia,



Looking at investing additional

**RM400 million**

to expand its business in Malaysia.

With a workforce of

**6000 employees**



Finisar remains the largest employer in Perak contributing to

**24%**

of Perak's manufacturing GDP

## INARI SEMICONDUCTOR LABS SDN. BHD.

### Design, development and manufacturing



of optoelectronic components, fibre-optics components & modules, fibre-optics chip fabrication, electronic test and measurement equipment.

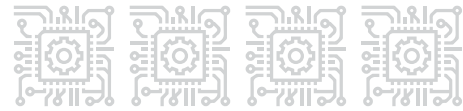


With **4<sup>th</sup> Industrial Revolution**, Inari sets sight on offering **enabling technical capabilities** to support the revolution – especially the **Photonics Technology in Laser for Fiber Optics and Automotive applications**, and in line with that Inari Semiconductor Labs (ISL) was formed in 2015.

ISL has transferred

### Chip Fabrication and Wafer Certification

for InP Laser operations from Broadcom US & Mexico as well as GaAs VCSEL operation from Broadcom Singapore.



ISL's use of local suppliers as part of its supply chain is expected to reach

## RM30 million

over next five years beginning 2015. Inari's export expected to generate

## RM388 million

over the next 5 years.



## ENVOTECH NETWORKS SDN. BHD.



**Started as an ODM for a US, has expanded into**

### Internet of Things (IoT)

with focus into **Wireless Sensors Telemetry System** for mobile and static assets.



In 2016, the company expanded into

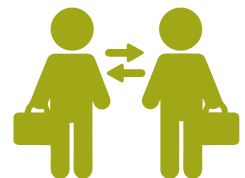
### software development

and marketed their product in 2016. In 2015 and 2016, the company **won a number of high-impact projects across the world.**

Through partnership with SAATS, Envotech Networks

### ventured into Tanzania's aviation industry

The company re-engineered the RadioSecure device firmware to **enhance M2M communication used by TRA ECTS (Tanzania Revenue Authority - Electronic Cargo Tracking System)**. In addition to TRA ECTS, Envotech Networks won similar projects in Kenya and Zimbabwe



## In 2017,

the company looks forward to a busy year, with the completion of **numerous proof of concept initiatives**. With a strong focus on delivering solutions that fulfils WTO Trade Facilitation Agreement, Envotech Networks is optimistic about the outlook for this sector and are committed to

**maintain our leading position.**



**SANDISK STORAGE MALAYSIA SDN. BHD.**

With its acquisition by Western Digital in 2016, SanDisk will **extend its product and technology platform** that includes both expertise in rotating magnetic storage and non-volatile memory

**In 2014**

SanDisk **established a new plant in Batu Kawan, Penang** which produces flash memory solutions and made the Malaysian plant the world's first state-of-the-art vertically integrated solid-state drive (SSD) manufacturing facility.

The plant, built on a

**30.4-acre**

land employs **1,000 employees** with over 50% of them working in professional and technical positions.

**SanDisk®**

a Western Digital brand



Operation in Malaysia includes in its supply-chain over **100 local suppliers**, creating a healthy business climate for the local SSD industry. Through its Global Supply Chain Management Centre, the company it contributes positively to the logistics and financial services sector in Malaysia.



Will continue to strengthen the growth of the E&E industry in Malaysia with its continued developments in **high-technology manufacturing**

**KONICA MINOLTA BUSINESS TECHNOLOGIES (MALAYSIA) SDN. BHD.**

**KONICA MINOLTA**

**A key multi-functional peripherals (MFC) manufacturer**, Konica Minolta established a new manufacturing concept of "Digital Manufacturing" that aims to drastically improve productivity by developing new manufacturing methods



Started its investment in Malaysia in 1970, Konica Minolta aims **to build up their Malaysian factory as a major production base** to meet "Digital Manufacturing" concept by gradually increasing production amounts and also continuously introducing various new technologies as well as creating more job opportunities



Focuses in including local suppliers in its supply-chain, with total purchase stands at **USD97 million in 2016** compared to USD3.0 million in 2014, an average local procurement ratio of 35%



Konica Minolta is **expecting double growth in 2017**, compared to 2016 with exports expected to be USD283 million. The company continues to show confidence in Malaysia, with a new Smart Industry Centre being planned in Melaka.



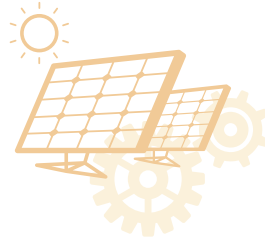
**Invested in a number of "Digital Manufacturing" initiatives**, with investments totalling USD114.2 million over the last three years, and job opportunities for 1511 employees



**GREATECH INTEGRATION (M) SDN. BHD.**



With two engineering & assembly facilities in Penang, measuring 40,000 square feet and three precision machining & sheet metal facilities in Lunas, Kedah measuring 35,000 square feet respectively, headquartered in Penang is currently **one of the largest automation equipment manufacturing companies in the northern region** of Malaysia



Have seen a **healthy growth since its inception in 1997** and has grown from equipment supplier for hard-disk drive industry into supplier of automation solution to solar and consumer electronics industry. Today, Greatech supplies automation solutions to the **largest solar energy provider in the USA**



To date, the company has invested **RM18 million** in facilities and machinery equipment, and employs **130 employees**



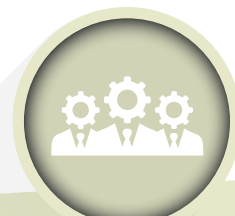
**HP MALAYSIA MANUFACTURING SDN. BHD.**



Hewlett-Packard (HP) **was established in 1939 in Palo Alto**, California one of the world's leaders in PC manufacturing and second only after Lenovo. The company specialises in developing and manufacturing computing, data storage, and networking hardware, designing software and delivering services



**Malaysia has been chosen by HP as its strategic location for print head of inkjet cartridges**, a key component for its printing technology. With an estimated investment of RM780 million, the new facility is expected to generate 900 highly-skilled jobs



As of July 2016, the facility has a workforce of 300 employees, with 60% of them in professional and technical positions. Within its supply chain, HP is **expected to engage as many as 150 local vendors**. HP Malaysia as the Worldwide Ink Manufacturing & Supply Chain Management Headquarters, will spur the growth of the country's GDP and export base of the E&E industry in Malaysia.

## HONEYWELL

Established its operation in Malaysia since 1985, Honeywell is a world-renowned Fortune 100 **diversified technology and manufacturing company**

# Honeywell



**Created 100 high-value jobs.**

Of these, half of the workforce are local, With 88% of them holding leadership positions



Has invested **RM1.8 billion** into this operation.



Principal Hub has utilised **RM11.1 million** of local ancillary services

The company's latest addition to its existing entities is the Principal Hub which will be a coordination centre leveraging on Malaysia's strategic location to support its **expansion into ASEAN market**



With expertise in areas defined as **National Key Economic Areas (NKEAs)** by the Government of Malaysia, Honeywell's Principal Hub supports knowledge transfer and creation of an ecosystem that supports these industries.



With the establishment of the Principal Hub in Malaysia, Honeywell is **strategically positioned** to complete both in the ASEAN region and Greater APAC markets

## MICRON CONCEPT PRECISION SDN. BHD.



A company established in 2000 is another example of an organisation that has **successfully ventured into aerospace**

Involved in the **aerospace industry since 2005**, and in 2006 Micron Concept Aerostructures Sdn. Bhd. was established to **undertake new projects in the aerospace industry**

With this expansion, it has been engaged by **OEM companies** to supply aircraft components. As part of its expansion plan, Micron Concept plans to increase its workforce by **173 employees over the next 10 years**



## KOBAY TECHNOLOGY BERHAD

A home-grown company specialising in semiconductor tooling, Kobay Technology Berhad. have ventured into aerospace industry **focusing on high-end fabrication category**, making it the sole player in South East Asia region

KOBAY  
TECHNOLOGY BERHAD



As a core business unit, aerospace contributes 45% of the revenue, and that is number is expected to **grow to 60% over the next 3 years**

From a Tier 3 supplier in the aerospace industry 5 years ago, the company is now a **Tier 1 supplier to major original equipment manufacturers (OEMs)**, among others GE Aviation, Honeywell Avionics and B/E Aerospace.

The company has **created 420 job opportunities** among graduates in the aerospace industry. Kobay's involvement in the aerospace industry has created an ecosystem for Tier 2 companies to capitalise and grow

## UMW AEROSPACE



Completed its pre-production and technology development centre in Serendah, Selangor. Engagement between UMW and Rolls-Royce will accelerate the completion of the aerospace ecosystem in Malaysia that ranges from maintenance, repair and overhaul (MRO)



This initiative is expected to **generate 190 high-income employment opportunities**. UMW continues to contribute to the aerospace ecosystem in the country, through the establishment of Aerospace Malaysia Innovation Centre, a partnership between the Government with Rolls-Royce and Airbus.

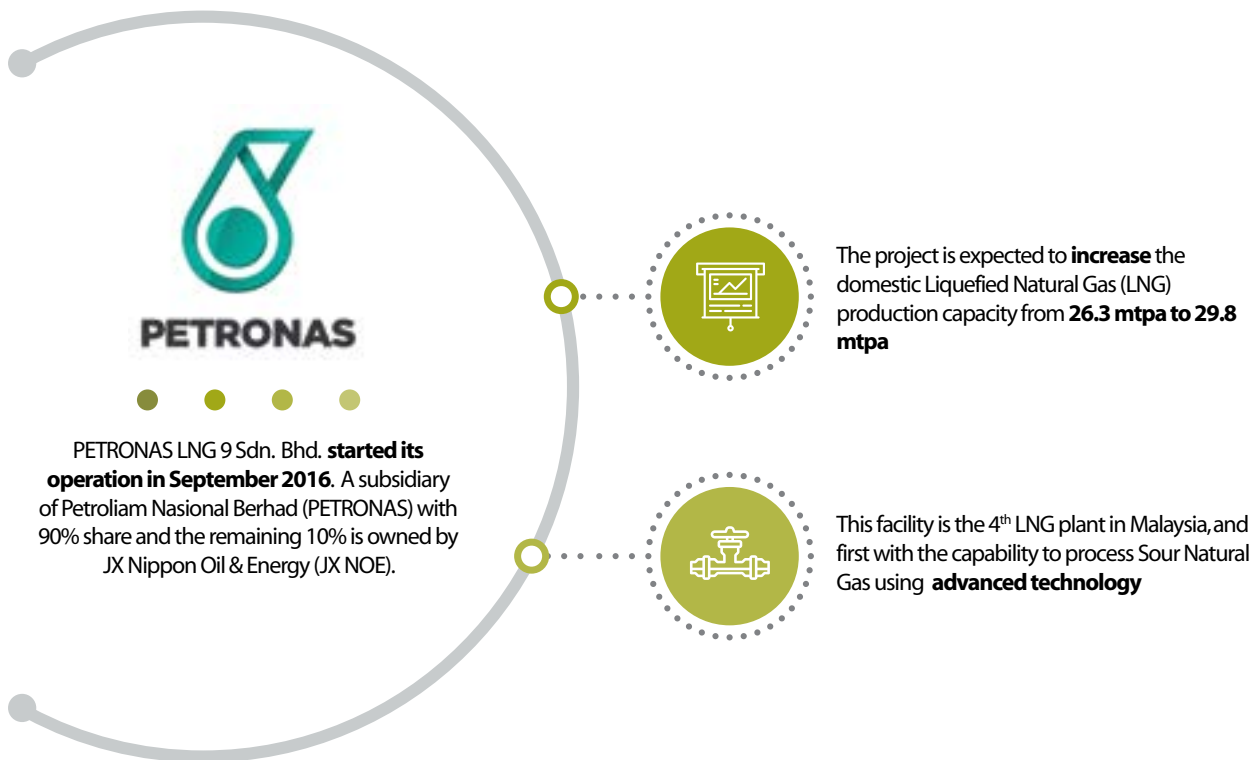
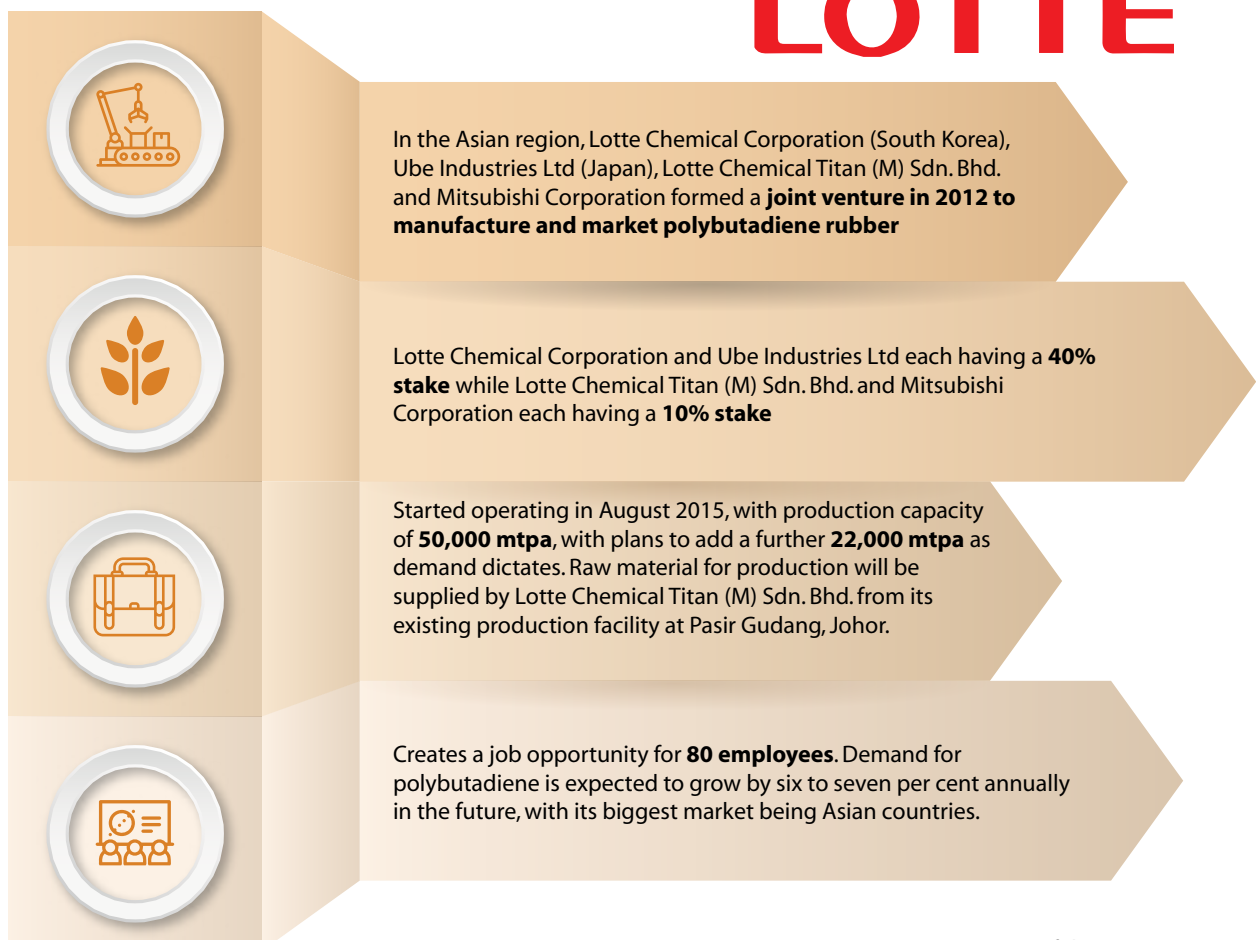
Home-grown company that has ventured into aerospace. Through it's collaboration with Rolls-Royce, the company will be **supplying parts for advanced aircraft engines**



Talent requirement is supported by UMW's partnership with Majlis Amanah Rakyat (MARA), or the Council of Trust for the People which will setup apprentice centre to **develop high-skilled manpower**





**PETRONAS LNG 9 SDN. BHD.****LOTTE UBE SYNTHETIC RUBBER SDN. BHD.****LOTTE**

## SHELL MDS (MALAYSIA) SDN. BHD.



### Shell MDS (Malaysia) Sdn Bhd (SMDS)

is a joint venture between the Royal Dutch Shell Group of Companies (SHELL), Mitsubishi Corporation, state-owned Petroliaam Nasional Berhad (PETRONAS) and the Sarawak State Government. Located in Bintulu (Sarawak's Corridor of Renewable Energy (SCORE)).

SMDS started its operation in 1993 to commercialise gas reserves offshore of Sarawak by converting the gas into environmentally clean products namely, middle distillates and specialty chemicals for various applications. This process is known as **'Gas to Liquids'** (GTL) and is the first of its kind in the world.



In 2016, the rejuvenated plant has **successfully enabled SMDS to substantially increase** its production output, enabling it to deliver the highest ever production in its history. This rejuvenation project has also strengthened SMDS's position as the leading producer of high quality waxes under the brand 'Shell GTL Sarawak'. SMDS products are of premium quality; virtually free of sulphur, aromatics and odourless. The products are accredited and certified with ISO 9002, Good Laboratory Practices, Good Manufacturing Practices and United States Food & Drugs Administration (FDA). More than ninety percent of SMDS products are **exported to more than 50 countries including the USA, Japan, Asia, Europe, Australasia, South America and Africa.**



Since 1993, SMDS has continued to invest in the country with introduction of new specialty products and the expansion of the plant capacity. After more than

## 20 years

**of operation**, SMDS embarked on a project to rejuvenate the existing plant to ensure sustainable and reliable production over the next 20 years. The project is SMDS's single largest investment in the plant since the rebuild in 1998-2000. This rejuvenation project was recognised as one of the EPPs under Oil, Gas and Energy NKEA.



To date, SMDS has **contributed RM4.6 billion** worth of investments to the country since its inception and employs 438 local talents from the total 445 employees. Its management, technical and supervisory index stands more than 74% and 85% of the total employees are paid more than RM3,000.00 per month.

## SOFT SPACE SDN. BHD. – MOBILE PAYMENTS' REVOLUTIONIST



A financial technology (fintech) company that **focuses on R&D of innovative solutions** for the e-banking and payment industry.



Currently **operating with 40 employees** of various high level technological skills and know-how, Soft Space's main activity revolves around providing mobile card payment acceptance solutions, which enable secure card payment acceptance through the **company's own patented data encryption methods**.

One of their products, **Mobile Point of Sale (mPOS)** technology enables mobile devices into card acceptance points, through card readers.



Soft Space is the **first tech company in Asia to develop centralised mobile Europay-Mastercard-Visa (EMV)** card acceptance solutions to allow full scale, real time management of transactions. This EMVCO certified solution is widely adopted, covering 19 operational sites (banks) all across the ASEAN region, Taiwan, Australia and New Zealand, making them the leading mPOS provider within the region.

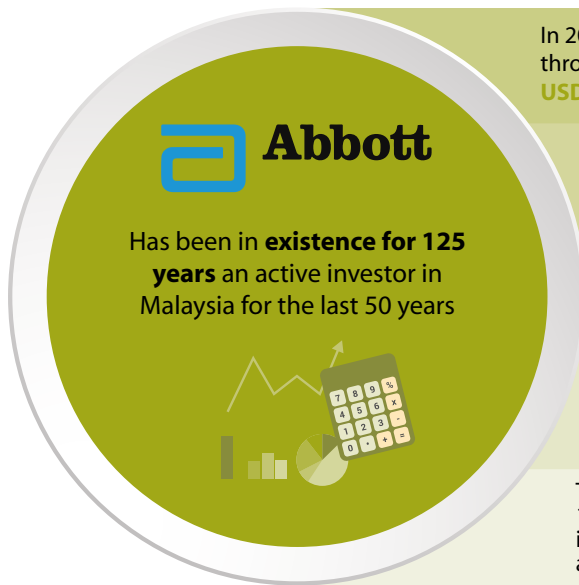


In September 2016, the company **achieved a milestone** when it signed a contract with Yamato Transport (M) Sdn. Bhd., a logistics company offering Tan-Q-Bin (small parcel delivery) and other delivery services and will be **able to capitalise on 17% compound annual growth rate (CAGR)** e-commerce market by offering card payments on delivery services, creating a service that both merchants and consumers can trust.



Signed a MoU with Sumitomo Mitsui Card Company (SMCC), the second largest card issuer in Japan to enable Soft Space to tap into Japanese card industry by leveraging on SMCC existing client base, and paving a way for SMCC to **expand their business in the ASEAN region**.

## ABBOTT MANUFACTURING (MALAYSIA) SDN. BHD.



Has been in **existence for 125 years** an active investor in Malaysia for the last 50 years

In 2014, the company established its first manufacturing facility in Malaysia, through its intraocular lenses (IOL) plant in Kulim, Kedah with investment of **USD 60 million, occupying an area of 21.6 acres**

By 2020, Abbot **will have a workforce of 500 employees** at this facility, with 99% of them being Malaysians

Abbot Manufacturing (Malaysia) Sdn. Bhd. **invests heavily on human capital development** of its worker

24% of its workforce earning an income of RM5,000.00 per month, which is in line with the Malaysian's government vision of a **high-income nation by 2020**

To date, the company has engaged 127 local suppliers and vendors as its service provider, with contracts amounting to **RM24 million**



Abbot **exports 95% of its production**, with US and EU being its major destination

## MI EQUIPMENT (M) SDN BHD

Incorporated in 2012, **an automated equipment manufacturer specialising in state-of-art die-sorting machines** for the semiconductor Wafer Level Chip Scale Package (WLCSP).

As part of its continuous expansion plan, the company ventured into United States, Mexico and Germany and in line with its vision to be the preferred global **"SOLUTIONS PROVIDER of CHOICE"**

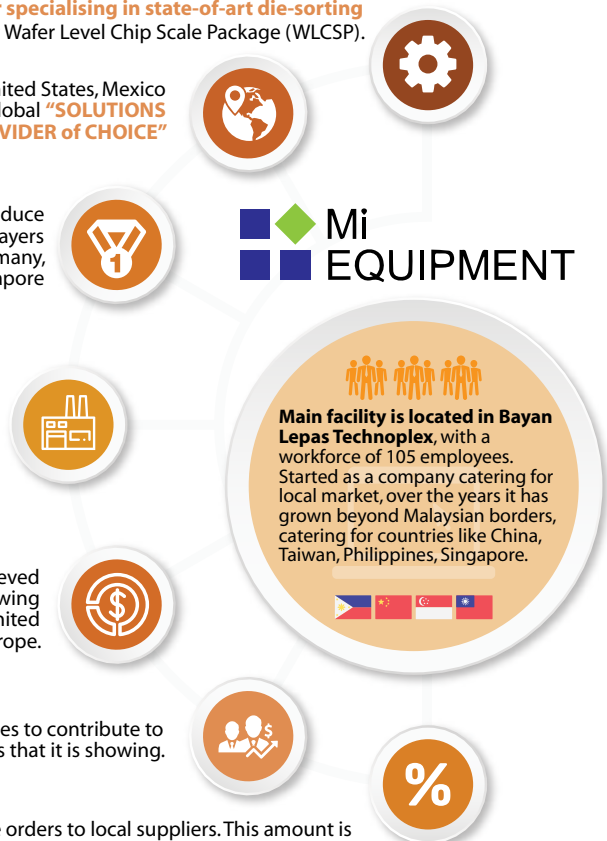
**1<sup>st</sup> Malaysian company that has the technical capability** to produce specialised equipment for WLCSP. Mi Equipment is one of the Top 4 players in the market, having direct competition with Muehlbauer from Germany, Ueno Seiki from Japan and STI from Singapore

Its Post Swan Side Wall inspection and electrical test solution for WLCSP is the first of its kind in the world, and this solution has been widely used by key semiconductor companies like Broadcom. With 16 test sites, it has **built a strong testing capability**, becoming one of the top three players for Post Swan Full Functional test and vision inspection on SystemOnChip (SoC) devices for WLCSP.

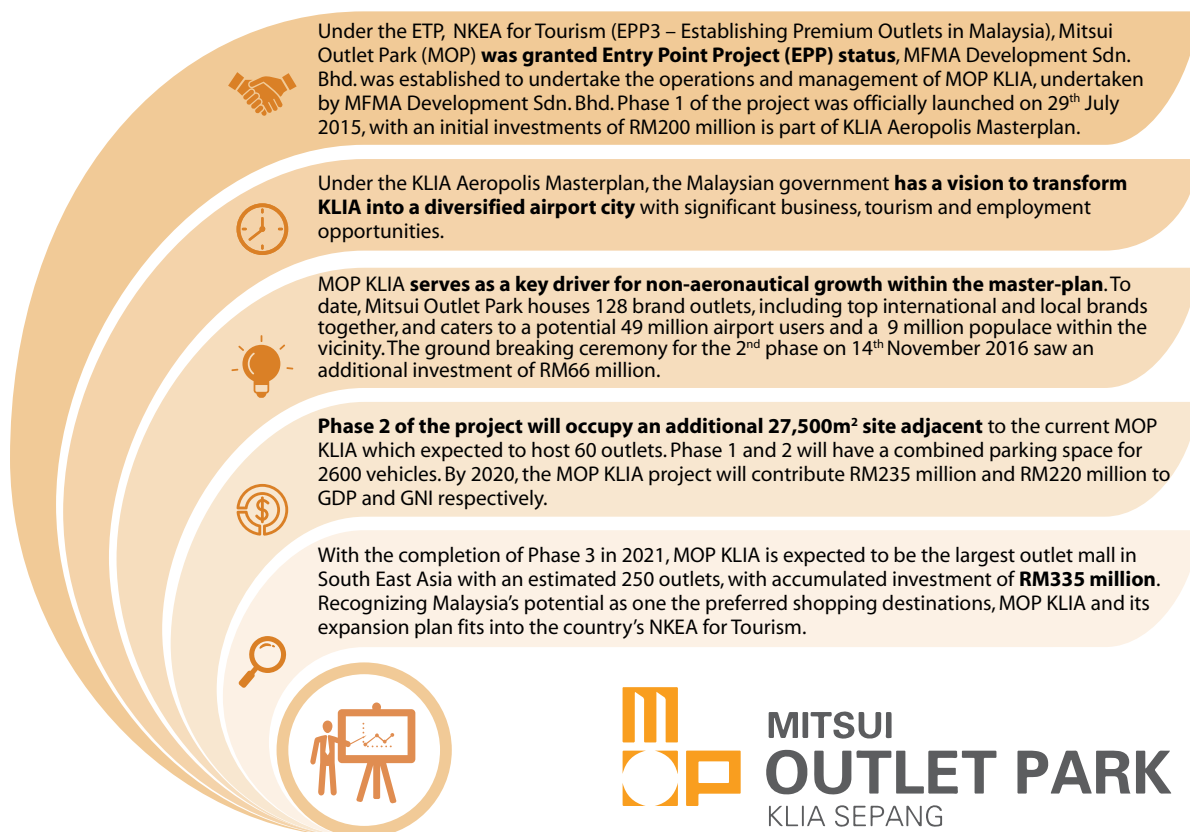
With a revenue of **RM74 million in 2014**, the company achieved double-digit growth in 2015 through its entrance into Tier 1 OSAT. Growing WLCSP markets allows the company to grow its market share in United States and Europe.

**High pay scale and profit sharing** continues to contribute to the success that it is showing.

Awarded more than RM20 million of purchase orders to local suppliers. This amount is **expected to grow to RM50 million** by end of 2016, a 50% increase from 2015.



## MFMA DEVELOPMENT SDN BHD – MITSUI OUTLET PARK KLIA SEPANG



## OM MATERIALS (SARAWAK) SDN. BHD.

A joint venture project between OM Materials (Singapore) Pte. Ltd. and Samalaju Industries Sdn. Bhd. (subsidiary of Cahya Mata Sarawak Bhd) **owns the largest Ferrosilicon and Ferroalloys smelting plant** in Malaysia, located in Bintulu, Sarawak.

To date, OM Materials has invested **RM1.5 billion in capital expenditure**. In addition to this, the company has spent **RM340 million in operational expenditure**, with 11% of that being spent on services rendered by local logistics providers and the rest being spent on utilities.

Since its inception in 2015, the company's workforce has increased by **50% to its current strength of 1000 employees**

Undertaken a number of initiatives to up-skill locals' talents in smelting technology, through in-house training to **reduce dependency on foreign talents**



As part of its Phase 1 implementation, the project includes **16 units of the ferrosilicon electric arc furnace** with 6 of them subsequently converted to produce manganese alloy.







## APPENDICES

**Appendix 1: Approved Manufacturing Projects, 2016 and 2015**

	2016			2015		
	New	Expansion/ Diversification	Total	New	Expansion/ Diversification	Total
Number	340	393	733	384	296	680
Employment	34,066	30,054	64,120	37,233	29,261	66,494
Total Capital Investment (RM million)	27,740.5	30,752.3	58,492.7	60,239.4	14,453.7	74,693.1
- Domestic (RM million)	17,397.2	13,678.1	31,075.3	48,597.2	4,154.2	52,751.4
- Foreign (RM million)	10,343.3	17,074.2	27,417.5	11,642.1	10,299.5	21,941.6

Appendix 2: New Manufacturing Projects Approved by Size of Capital Investment, 2016 and 2015

Size of Capital Investment	2016					2015				
	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)
Less than RM2.5 million	26	566	43.3	-	43.3	36	794	50.8	5.5	56.3
RM2.5 million - < RM5.0 million	30	1,135	87.3	23.7	111.0	42	1,362	112.1	50.2	162.3
RM5.0 million - < RM10.0 million	71	3,295	392.0	131.6	523.7	96	5,132	549.5	152.4	701.9
RM10.0 million - < RM50.0 million	146	10,348	1,978.9	1,089.3	3,068.2	151	12,498	2,324.5	1,048.8	3,373.4
RM50.0 million - < RM100.0 million	30	3,745	1,355.2	649.1	2,004.3	23	2,894	854.1	691.2	1,545.3
RM100.0 million - < RM500.0 million	30	7,542	3,356.5	3,799.9	7,156.4	23	4,734	1,682.4	3,552.3	5,234.7
RM500.0 million - < RM 1.0 billion	3	2,890	-	1,906.0	1,906.0	8	6,527	1,649.3	3,578.2	5,227.5
RM 1.0 billion and Above	4	4,545	10,183.9	2,743.7	12,927.6	5	3,292	41,374.5	2,563.4	43,937.9
Total	340	34,066	17,397.2	10,343.3	27,740.5	384	37,233	48,597.2	11,642.1	60,239.4



Appendix 3: Approved Manufacturing Projects by Industry, 2016 and 2015

Industry	2016					2015				
	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)
Petroleum Products (Inc. Petrochemicals)	18	808	10,319.8	5,599.6	15,919.4	12	1,861	25,112.9	1,862.4	26,975.3
Electronics & Electrical Products	107	16,260	1,294.4	7,943.3	9,237.7	93	22,599	722.1	8,203.6	8,925.8
Basic Metal Products	19	3,345	2,732.5	2,249.6	4,982.0	28	3,628	929.9	2,679.8	3,609.7
Transport Equipment	68	7,239	3,064.2	1,691.0	4,755.1	55	2,696	6,002.3	506.6	6,508.9
Natural Gas	1	67	3,657.2	-	3,657.2	1	128	10,410.6	-	10,410.6
Food Manufacturing	58	6,423	2,065.1	1,273.0	3,338.1	51	2,930	2,057.4	590.5	2,647.9
Chemical & Chemical Products	69	2,773	1,661.4	1,390.1	3,051.5	50	2,009	1,086.5	1,195.8	2,282.4
Non-Metallic Mineral Products	34	3,004	1,062.9	1,898.0	2,960.9	25	3,317	1,405.3	2,301.2	3,706.5
Rubber Products	24	6,916	1,277.9	1,015.7	2,293.7	22	6,893	382.1	956.1	1,338.2
Plastic Products	48	3,038	433.1	1,372.7	1,805.8	43	3,863	659.8	251.1	911.0
Machinery & Equipment	88	2,866	999.7	536.5	1,536.1	97	4,428	964.0	838.5	1,802.4
Scientific & Measuring Equipment	28	2,722	224.8	1,184.7	1,409.5	25	1,681	337.7	508.4	846.0
Fabricated Metal Products	75	3,718	769.2	635.5	1,404.6	77	4,526	1,639.2	966.7	2,605.9
Textiles & Textile Products	8	344	401.0	362.4	763.4	4	219	17.9	7.4	25.3
Wood & Wood Products	32	1,507	388.5	129.0	517.4	52	2,520	592.8	221.8	814.6
Paper, Printing & Publishing	15	906	310.6	51.2	361.8	16	1,065	149.1	813.7	962.8
Furniture & Fixtures	25	1,072	137.8	22.9	160.7	18	748	61.4	25.9	87.4
Leather & Leather Products	4	303	15.6	35.8	51.4	1	74	9.7	-	9.7
Beverages & Tobacco	1	64	9.2	-	9.2	3	423	107.9	6.6	114.4
Miscellaneous	11	745	250.6	26.7	277.3	7	886	102.6	5.6	108.2
Total	733	64,120	31,075.3	27,417.5	58,492.7	680	66,494	52,751.4	21,941.6	74,693.1

Appendix 4: Approved Manufacturing Projects with Investments of RM100 million and above, 2016

Industry	New				Expansion/Diversification						Total				
	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)
Petroleum Products (Inc. Petrochemicals)	4	477	5,069.6	2,672.9	7,742.5	4	91	5,110.1	2,731.6	7,841.7	8	568	10,179.7	5,404.5	15,584.2
Electronics & Electrical Products	2	2,360	-	1,066.0	1,066.0	19	8,160	814.3	6,171.4	6,985.7	21	10,520	814.3	7,237.4	8,051.7
Basic Metal Products	1	60	-	251.0	251.0	3	2,793	2,493.7	1,883.2	4,376.8	4	2,853	2,493.7	2,134.2	4,627.8
Transport Equipment	5	882	1,117.8	164.7	1,282.5	5	3,841	1,346.9	1,125.0	2,471.9	10	4,723	2,464.7	1,289.8	3,754.5
Natural Gas	1	67	3,657.2	-	3,657.2	.	.	-	-	-	1	67	3,657.2	-	3,657.2
Food Manufacturing	5	4,174	1,491.7	621.1	2,112.8	4	281	154.5	391.7	546.1	9	4,455	1,646.2	1,012.7	2,659.0
Non-Metallic Mineral Products	4	1,454	426.7	1,390.0	1,816.7	2	90	176.0	234.0	410.0	6	1,544	602.7	1,624.0	2,226.7
Chemical & Chemical Products	5	565	371.2	600.0	971.2	3	465	646.9	405.8	1,052.7	8	1,030	1,018.1	1,005.8	2,023.9
Rubber Products	3	3,217	755.4	397.6	1,152.9	3	1,257	154.0	489.3	643.3	6	4,474	909.4	886.9	1,796.3
Plastic Products	1	530	-	840.0	840.0	1	20	-	196.5	196.5	2	550	-	1,036.5	1,036.5
Scientific & Measuring Equipment	2	433	-	312.1	312.1	1	253	-	539.1	539.1	3	686	-	851.1	851.1
Textiles & Textile Products	1	189	380.5	29.5	410.0	1	10	-	287.9	287.9	2	199	380.5	317.4	697.9
Fabricated Metal Products	2	524	137.0	104.7	241.7	1	45	-	104.1	104.1	3	569	137.0	208.8	345.8
Paper,Printing & Publishing	.	.	-	-	-	1	314	132.0	33.0	165.0	1	314	132.0	33.0	165.0
Machinery & Equipment	1	45	133.3	-	133.3	.	.	-	-	-	1	45	133.3	-	133.3
Total	37	14,977	13,540.4	8,449.5	21,990.0	48	17,620	11,028.2	14,592.6	25,620.9	85	32,597	24,568.6	23,042.2	47,610.8

**Appendix 5: Approved New and Expansion/Diversification Manufacturing Projects  
by Industry, 2016 and 2015**

Industry	2016						2015					
	New		Expansion/ Diversification		Total		New		Expansion/ Diversification		Total	
	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)
Petroleum Products (Inc. Petrochemicals)	8	7,854.7	10	8,064.7	18	15,919.4	10	26,613.7	2	361.6	12	26,975.3
Electronics & Electrical Products	17	1,468.1	90	7,769.5	107	9,237.7	26	2,156.2	67	6,769.5	93	8,925.8
Basic Metal Products	8	467.2	11	4,514.9	19	4,982.0	15	3,029.0	13	580.6	28	3,609.7
Transport Equipment	24	1,651.1	44	3,104.0	68	4,755.1	16	5,632.1	39	876.9	55	6,508.9
Natural Gas	1	3,657.2	.	.	1	3,657.2	1	10,410.6	.	.	1	10,410.6
Food Manufacturing	30	2,510.0	28	828.1	58	3,338.1	34	1,926.7	17	721.2	51	2,647.9
Chemical & Chemical Products	36	1,558.5	33	1,493.0	69	3,051.5	24	1,562.4	26	720.0	50	2,282.4
Non-Metallic Mineral Products	16	2,244.3	18	716.6	34	2,960.9	18	2,927.0	7	779.4	25	3,706.5
Rubber Products	11	1,393.3	13	900.4	24	2,293.7	13	1,073.2	9	265.0	22	1,338.2
Plastic Products	24	1,250.3	24	555.5	48	1,805.8	31	570.9	12	340.1	43	911.0
Machinery & Equipment	42	819.4	46	716.7	88	1,536.1	58	1,383.6	39	418.8	97	1,802.4
Scientific & Measuring Equipment	12	523.6	16	885.9	28	1,409.5	13	494.9	12	351.1	25	846.0
Fabricated Metal Products	47	901.5	28	503.2	75	1,404.6	51	1,293.1	26	1,312.8	77	2,605.9
Textiles & Textile Products	4	456.0	4	307.4	8	763.4	2	16.1	2	9.2	4	25.3
Wood & Wood Products	26	473.6	6	43.8	32	517.4	38	569.4	14	245.2	52	814.6
Paper, Printing & Publishing	7	152.3	8	209.5	15	361.8	14	317.1	2	645.7	16	962.8
Furniture & Fixtures	15	87.2	10	73.5	25	160.7	12	71.6	6	15.8	18	87.4
Leather & Leather Products	4	51.4	.	.	4	51.4	1	9.7	.	.	1	9.7
Beverages & Tobacco	1	9.2	.	.	1	9.2	2	78.7	1	35.8	3	114.4
Miscellaneous	7	211.6	4	65.7	11	277.3	5	103.2	2	5.0	7	108.2
Total	340	27,740.5	393	30,752.3	733	58,492.7	384	60,239.4	296	14,453.7	680	74,693.1

**Appendix 6: Approved Manufacturing Projects with Malaysian Majority\* Ownership  
by Industry, 2016 and 2015**

Industry	2016						2015					
	New		Expansion/ Diversification		Total		New		Expansion/ Diversification		Total	
	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)
Petroleum Products (Inc. Petrochemicals)	4	7,198.8	2	5,708.1	6	12,906.9	3	24,926.1	.	.	3	24,926.1
Transport Equipment	20	1,586.5	32	2,159.8	52	3,746.2	11	5,463.0	32	540.0	43	6,003.0
Natural Gas	1	3,657.2	.	.	1	3,657.2	1	10,410.6	.	.	1	10,410.6
Basic Metal Products	5	174.2	8	2,465.4	13	2,639.5	13	319.3	11	472.1	24	791.4
Food Manufacturing	21	1,832.8	11	133.3	32	1,966.1	25	1,723.7	8	272.9	33	1,996.6
Chemical & Chemical Products	24	789.2	23	873.3	47	1,662.5	17	436.0	17	540.4	34	976.4
Electronics & Electrical Products	10	221.9	19	1,115.0	29	1,336.9	14	280.6	28	572.1	42	852.7
Rubber Products	9	843.4	8	356.0	17	1,199.4	11	126.4	5	263.0	16	389.5
Machinery & Equipment	32	518.2	38	570.3	70	1,088.6	44	783.2	21	226.0	65	1,009.3
Fabricated Metal Products	35	511.7	19	266.1	54	777.9	36	1,070.7	14	429.5	50	1,500.2
Non-Metallic Mineral Products	9	345.0	8	310.4	17	655.4	12	1,389.4	2	19.9	14	1,409.3
Plastic Products	15	275.2	17	197.4	32	472.6	23	382.5	6	295.1	29	677.5
Textiles & Textile Products	1	410.0	2	19.5	3	429.5	2	16.1	1	1.8	3	17.9
Wood & Wood Products	20	370.3	5	25.4	25	395.7	28	390.2	12	208.2	40	598.4
Paper, Printing & Publishing	6	142.3	5	203.4	11	345.7	9	118.5	1	32.2	10	150.7
Scientific & Measuring Equipment	6	75.4	6	158.6	12	234.1	10	315.1	7	70.6	17	385.7
Furniture & Fixtures	14	75.6	10	73.5	24	149.0	10	47.1	6	15.8	16	62.9
Leather & Leather Products	2	26.0	.	.	2	26.0	1	9.7	.	.	1	9.7
Beverages & Tobacco	1	9.2	.	.	1	9.2	2	78.7	1	35.8	3	114.4
Miscellaneous	6	203.8	4	65.7	10	269.5	4	100.6	2	5.0	6	105.7
<b>Total</b>	<b>241</b>	<b>19,266.8</b>	<b>217</b>	<b>14,701.1</b>	<b>458</b>	<b>33,967.9</b>	<b>276</b>	<b>48,387.6</b>	<b>174</b>	<b>4,000.4</b>	<b>450</b>	<b>52,388.1</b>



**Appendix 7: Approved Projects in the Engineering Supporting Industry by Subsector, 2016**

Subsector	New					Expansion/Diversification					Total				
	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)
Moulds, Tools & Dies	4	157	54.4	0.0	54.4	9	125	34.3	22.4	56.7	13	282	88.7	22.4	111.1
Machining	6	420	34.4	61.2	95.6	9	231	99.2	17.8	117.0	15	651	133.6	79.0	212.6
Casting	2	170	17.8	1.7	19.5	.	.	-	-	-	2	170	17.8	1.7	19.5
Surface Engineering	3	342	5.8	95.8	101.6	.	.	-	-	-	3	342	5.8	95.8	101.6
Forging	1	24	5.4	0.0	5.4	1	21	0.0	38.6	38.6	2	45	5.4	38.6	44.0
Total	16	1,113	117.8	158.6	276.4	19	377	133.5	78.8	212.3	35	1,490	251.2	237.5	488.7

**Appendix 8: Approved Projects in Electrical & Electronics Industry by Subsector, 2016**

Subsector	New					Expansion/Diversification					Total				
	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)	No.	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)
Consumer Electronics	1	225	-	65.4	65.4	2	167	0.1	51.1	51.2	3	392	0.1	116.5	116.6
Electronic Components	1	28	-	46.4	46.4	22	5,187	577.0	3,298.0	3,875.0	23	5,215	577.0	3,344.4	3,921.4
Industrial Electronics	4	479	108.5	10.0	118.5	33	1,485	359.4	339.7	699.0	37	1,964	467.9	349.7	817.5
Electrical Appliances	1	63	7.5	-	7.5	2	507	4.7	2,000.0	2,004.7	3	570	12.2	2,000.0	2,012.2
Industrial Electrical	3	257	64.3	4.7	69.0	12	1,014	13.4	198.0	211.4	15	1,271	77.7	202.7	280.4
Electrical Components	7	2,886	36.8	1,124.5	1,161.3	19	3,962	122.8	805.5	928.3	26	6,848	159.6	1,929.9	2,089.5
Total	17	3,938	217.1	1,251.0	1,468.1	90	12,322	1,077.2	6,692.3	7,769.5	107	16,260	1,294.4	7,943.3	9,237.7

**Appendix 9: Manufacturing Projects Approved with Foreign Participation  
by Source, 2016 and 2015**

Country	2016		2015	
	No.	Foreign Investment (RM million)	Bil.	Foreign Investment (RM million)
China	33	4,774.8	17	1,872.0
Netherlands	18	3,216.4	9	976.5
Germany	21	2,645.3	22	1,160.8
United Kingdom	13	2,574.8	11	146.9
Korea, Rep.	8	2,169.0	22	1,353.4
Singapore	96	2,113.8	87	1,394.8
Japan	53	1,861.7	60	4,009.3
USA	18	1,412.8	19	4,150.2
India	8	1,334.0	4	25.9
Belgium	3	584.7	.	.
Taiwan	18	548.6	24	1,275.5
Luxembourg	1	539.1	.	.
Switzerland	6	522.6	5	186.9
Italy	4	420.8	3	120.8
United Arab Emirates	6	305.6	3	320.6
Denmark	2	294.3	1	12.4
Hong Kong	12	265.2	9	3,180.9
Thailand	4	169.9	.	.
Sweden	4	161.1	2	630.8
Others	90	1,503.0	60	1,124.1
Total	418	27,417.5	358	21,941.6

Appendix 10: Manufacturing Projects Approved by State, 2016 and 2015

Country	2016						2015					
	New		Expansion/Diversification		Total		New		Expansion/Diversification		Total	
	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)	No.	Total Capital Investment (RM million)
Johor D.T.	79	14,972.2	86	11,438.4	165	26,410.6	73	29,552.5	64	1,549.8	137	31,102.3
Selangor D.E.	117	3,699.9	125	4,180.8	242	7,880.8	140	3,376.0	82	4,587.8	222	7,963.8
Sarawak	9	1,343.4	4	3,291.9	13	4,635.3	11	11,701.6	11	115.3	22	11,816.9
Pulau Pinang	43	1,649.9	63	2,644.0	106	4,293.9	59	2,816.5	48	3,907.9	107	6,724.3
Perak D.R.	23	1,714.7	32	2,231.5	55	3,946.2	21	3,029.9	11	857.5	32	3,887.4
Kedah D.A.	15	489.3	20	1,694.0	35	2,183.3	19	365.1	30	991.4	49	1,356.6
Sabah	15	2,115.0	4	23.2	19	2,138.1	6	290.6	4	57.6	10	348.2
Terengganu D.I.	3	85.1	2	2,027.2	5	2,112.3	7	1,363.1	4	37.0	11	1,400.1
Negeri Sembilan D.K.	13	621.6	20	1,295.9	33	1,917.5	17	1,040.9	18	668.5	35	1,709.4
Melaka	6	233.4	17	1,121.3	23	1,354.8	11	5,621.8	17	1,237.2	28	6,859.0
Pahang D.M.	6	487.0	13	396.1	19	883.1	13	723.9	4	437.4	17	1,161.3
Kelantan D.N.	3	120.4	2	393.9	5	514.3	5	353.4	1	0.3	6	353.7
W.P. – Kuala Lumpur	7	174.8	5	14.1	12	189.0	2	4.1	.	-	2	4.1
W.P.- Labuan	1	33.8	.	-	1	33.8	.	-	1	2.9	1	2.9
Perlis I.K.	.	-	.	-	.	-	.	-	1	3.1	1	3.1
Total	340	27,740.5	393	30,752.3	733	58,492.7	384	60,239.4	296	14,453.7	680	74,693.1



**Appendix 11: Approved Investments in Various Services Sectors, 2016 and 2015**

Subsector	Number		Potential Employment		Total Investment (RM million)	
	2016	2015	2016	2015	2016	2015
Real Estate	680	911	NA	NA	64,086.4	26,895.1
Transport	14	57	280	513	1,870.7	15,983.2
Financial Services	43	48	74	140	13,687.8	15,371.4
Utilities	NA	NA	0	7	10,576.8	11,706.6
Telecommunications*	420	620	NA	NA	5,946.2	8,939.6
Global Establishments	211	224	2,611	4,217	14,098.4	8,222.2
Distributive Trade	1,449	1,317	52,052	72,349	9,262.2	6,812.1
Hotel & Tourism	97	118	6,217	7,242	4,680.4	5,412.6
MSC Status	336	249	18,171	12,853	6,430.5	4,569.7
Support Services	258	251	3,120	2,605	9,435.4	3,680.8
Health Services	4	26	266	6,765	188.5	3,679.0
Other Services	18	28	634	1,711	375.0	1,713.7
Education Services	669	621	4,683	3,792	572.1	1,562.4
Total	4,199	4,470	88,108	112,194	141,210.4	114,548.4

**Appendix 12: Approved Investments in the Primary Sector, 2016 and 2015**

Primary Sector	Number		Potential Employment		Total Investment (RM million)	
	2016	2015	2016	2015	2016	2015
Mining	19	26	68	156	7,593.3	2,813.2
Plantation & Commodities	5	4	239	471	542.7	712.2
Agriculture	16	27	529	929	69.4	261.2
Total	40	57	836	1,556	8,205.4	3,786.6







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