



61QIA-585  
C-7762 H2S GAS DETECTION

DANGER

P7762B





# STRONG OWNERSHIP TO OPTIMISE OPERATIONAL RELIABILITY AND EFFICIENCY

At HRC, reliability is upheld as the key to stable, safe, energy efficient and low-cost operations and we invest in scheduled maintenance and turnarounds to assure long-term reliability of our assets.

# Management Discussion & Analysis

## VISION

To Be The Top Performing and Most Admired Refinery in Asia

## MISSION

To continuously deliver shareholder value by:

- Manufacturing and supplying oil products and services that satisfy the needs of our customers
- Constantly achieving operational excellence
- Conducting our business in a safe, environmentally sustainable and economically optimum manner
- Employing a diverse, innovative and results-oriented team, motivated to deliver excellence

### OUR JOURNEY TO DATE

Hengyuan Refining Company Berhad (formerly known as Shell Refining Company (Federation of Malaya) Berhad) (HRC) was incorporated in 1960. HRC was listed on the Main Board of the then Kuala Lumpur Stock Exchange, now known as the Main Market of Bursa Securities, in 1962.

HRC's refining operations began in 1963 with a single crude distiller operating at a capacity of 20,000 barrels per day. After several key debottlenecking and growth investments, today it produces up to 120,000 barrels per day and is the second largest refinery in Malaysia. Operating in Port Dickson, HRC provides employment for close to 500 people. This comprise our own and direct contract staff excluding contractors and suppliers.



1960

Our Company was incorporated in Malaysia on 19 September.

1962

Our Company was listed in the Main Board of KLSE (now Bursa Malaysia) on 29 October with 25% Malaysian public participation. As at end December 2012, public participation has increased to 49%.

1963

Operations begin at our Company's new Simple Hydro Skimming refinery with Crude Distiller I, with capacity to produce 20 kilo barrels/day (kbbbl/day).

1967

Capacity increased to 30 kbbbl/day after debottlenecking with additional Platformer I and Hydro-Desulphurisation Plant ("HDS") I.

1974

Crude Distiller II was built to increase crude production capacity to 75 kbbbl/day.

1982

Introduction of Platformer II with Continuous Catalyst regeneration facility. Mogas production trebles in view of Malaysia's inland demand growth.

1988

Capacity increased to 90 kbbbl/day after debottlenecking with additional Mild Vacuum Unit ("MVU") to extract more gasoil from residue; and High Vacuum Unit ("HVU") to produce bitumen during the North-South Highway construction.

1991

The 'Samudra' jetty was built to increase handling of product outlet via waterfront. Samudra was designed with three berths facility, ability to handle bigger shipment size and liquefied petroleum gas ("LPG") import/export facilities.

# OBJECTIVES

We are committed to deliver sustainable excellence in business performance by focussing on the following:

- Deliver continuous sustainable Health, Safety, Security and Environmental excellence
- Safeguard asset integrity
- Meet our customer requirements
- Realise the potential of our people
- Maximise refinery margins
- Deliver structural cost reductions
- Benefit our shareholders
- Sustain a robust management system

In 2016, our Company underwent a transition of our major shareholder after a structured review exercise to now move into a new era and a new phase of growth.

The majority shareholder of HRC is Malaysia Hengyuan International Limited (MHIL) as at 22 December 2016 with an equity stake of 51.02 percent in HRC. MHIL is

wholly-owned by Heng Yuan Holdings Limited, which in turn is a wholly-owned subsidiary of Shandong Hengyuan Petrochemical Company Limited (SHPC). The ultimate controlling shareholder of SHPC is Shandong Hengyuan Petrochemical Group Company Limited.



1993

Capacity increased to 105 kbbbl/day after debottlenecking with main column tray upgrade and additional side stream for reflux cooling.

2013

Our Company celebrated our golden jubilee to mark our beginning as a refiner with only a Single Hydro Skimming Crude Distiller at a production capacity of only 20 kbbbl/day, to a progressive refinery with production capacity of 125 kbbbl/day.

2015

A structured review on the long term future of our Company announced in January 2015 brought a series of unprecedented challenges, exacerbating an already eventful year as the refinery underwent a scheduled major statutory turnaround ('Turnaround 2015').

2017

At the end of February 2017, our Company secured its shareholders agreement on the Company's name change. Upon completion of the registration exercise on 9 March, our Company is officially 'Hengyuan Refining Company Berhad' (HRC).

1999

Our Company's RM1.4 billion investment in Malaysia's first Long Residue Catalytic Cracker ("LRCC") was completed. LRCC added significant value to our Company's operations and expanded the refinery's production capacity to 125 kbbbl/day.

2014

Our Company received the Malaysian Society for Occupational Safety & Health Grand Award for Superior Occupational Safety and Health for the third consecutive year – a clear affirmation for our continued focus on uplifting occupational safety and health standards.

2016

Our Company underwent a transition and in December 2016, the completion of the Sale and Purchase Agreement (SPA) was signed between Malaysia Hengyuan International Limited (MHIL) and Shell Overseas Holdings Limited (SOHL).

## Management Discussion & Analysis

### Our Assets & Products

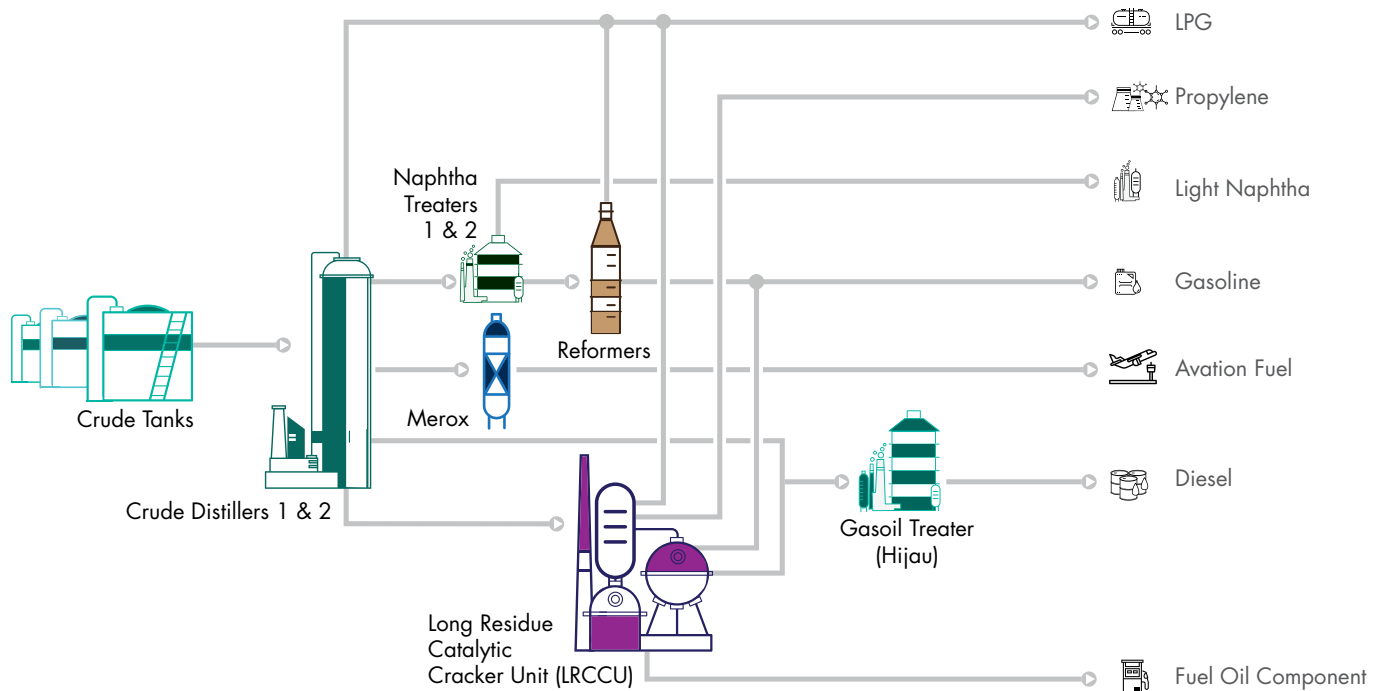
HRC's complex oil refinery in Port Dickson has a licensed production capacity of 156,000 barrels per day. The major operating units in the refinery consist of two crude distillers, a long residue catalytic cracker (LRCCU), two naphtha treaters and a merox plant, two reformers and a gasoil treatment plant. It also produces a comprehensive range of petroleum products including liquefied petroleum gas (LPG), gasoline, diesel, aviation fuel, fuel oil components, and chemical feedstocks like light naphtha and propylene. Approximately 85 percent of these refined products are sold in Malaysia.

Our products are predominantly distributed using the multi-product pipeline (MPP) to the Klang Valley Distribution Terminal (KVDT) and the Kuala Lumpur International Airport (KLIA). We also despatch products via road to more local users and via sea to more remote Malaysia locations including Sabah and Sarawak. Our significant customers for main fuels are Shell Malaysia Trading Sdn Bhd and Shell Timur Sdn Bhd, with whom we have entered into a 10 year term product offtake agreement, securing our sales of gasoline, aviation fuel and diesel in the country.



Products such as propylene and light naphtha are exported out of Malaysia to be used as chemical plant feedstock and a portion of our LPG is exported to end users.

In addition, we import gasoline components such as MTBE and additional LRCCU feedstock when the economics are favourable.







## 2016 TRANSITION

Since the announcement made by Shell Overseas Holdings Limited (SOHL) early 2016 in respect of the sale of its entire equity stake of 51.0 percent in HRC to MHIL (Share Sale), HRC has focused on securing the future of the refinery as a going concern. This meant negotiating and securing key commercial contracts including:

- a 10-year product offtake agreement (POA) covering gasoline, diesel and Jet with Shell Malaysia Trading Sdn Bhd and Shell Timur Sdn Bhd (POA Buyers) for the supply of refined petroleum products by HRC
- a 5-year crude oil supply agreement (COSA) with Shell International Eastern Trading Company (SIETCO) for the supply of crude oil to HRC; and
- refinancing facility agreements as well as IT separation and plant maintenance related supply agreements.

In particular, the entry into the POA and the COSA ensured the certainty and security of offtake of HRC's refined petroleum products and crude oil supply post completion of the Share Sale.

The Board and management also focused on transitioning HRC's systems and processes shared previously with the Shell group to standalone systems and processes. In addition services carried out elsewhere in Shell were transferred back to HRC, which required recruitment of some contract personnel as well as setting up outsourcing services in Information Technology, Finance, Contracts & Procurement and Human Resource. This enabled the uncompromised operations of the refinery during the transition, whilst providing a stable platform for long term growth. Details of the key aspects of the transition are as follows:

### POA

The 10-year POA, commencing from 22 December 2016 being the completion date of the Share Sale, stipulates that products produced by HRC would be primarily sold to the POA Buyers to support the POA Buyers' marketing activities in Malaysia based on the minimum and maximum contractual limits as set out in the POA. The POA Buyer has the first right of refusal to offtake refined petroleum products produced by HRC above the minimum contractual limit, subject to the terms and conditions set out in the POA.

The price of products to be supplied by HRC pursuant to the POA is at arms length and is determined based on, amongst others, the Mean of Platts Singapore (MOPS) quotation plus a premium as published in Platt's Asia Pacific/Arab Gulf Marketscan under the heading of "Singapore". This is an internationally recognised trade marker widely used by all ASEAN players in the Oil & Gas Industry.

### COSA

The 5-year COSA is intended to ensure continuity of supply of crude oil to HRC post completion of the Share Sale. With effect from 22 December 2016, being the completion date of the Share Sale, HRC will procure crude oil mainly from SIETCO on the terms and conditions set out in the COSA for an initial period of five years, which may be extended for a further period of three years by mutual agreement of the parties in writing. The minimum amount which has to be purchased from SIETCO will reduce each year during the abovementioned five years.

The price for each parcel of crude oil supplied to HRC under the COSA shall be agreed by HRC and SIETCO based on, amongst others, the prevailing market crude oil price, freight costs and/or insurance. Again the price follows the various international Platts markers for crude oil.



## Management Discussion & Analysis

### INFORMATION TECHNOLOGY (IT) TRANSITION

Post-completion of the Share Sale, HRC has re-engineered part of its IT systems to be on a standalone basis in order to be independent of Shell's central IT systems. The exercise involved IT systems used by the finance, economics and scheduling and engineering departments in HRC and required detailed definition of the scope, system requirements, interfaces and controls. The IT project was prepared well and extensively tested before final implementation, which was completed successfully without any impact on the operation of the refinery. The IT migration was done in August 2016 well before the sales completion date. Since then, HRC has been operating on a standalone IT system separate from the Shell central systems.

### REFINANCING

The Share Sale was conditional on the potential buyer being able to refinance the USD240 million and MYR450 million outstanding loans of HRC on completion of the Share Sale. MHIL was able to demonstrate this by providing a commitment letter from an international bank to refinance these existing loans and by SHPC providing a corporate guarantee and cash backed collaterals as security, further evidencing MHIL's commitment to HRC. An independent due diligence and review of the terms of the refinancing documents was carried out by HRC management and the independent directors, and the refinancing took place on completion of the Share Sale.

### PEOPLE

To many of our staff change is difficult and comes with uncertainty especially following a long employment history with Shell. Therefore a special team, comprising of staff across several departments of HRC, was tasked as the "Countdown Team" to prepare our staff for the transition to a new era post completion of the Share Sale. The Countdown Team innovated and executed various people oriented initiatives to ensure that our staff was mentally and emotionally prepared to make the transition into the Shandong Hengyuan Group. The team addressed concerns and emotional responses as many had been long serving staff with Shell Malaysia. Clear communication channels and engagement platforms were utilised in order to build confidence and encourage staff to continue contributing to HRC post-completion of the Share Sale. To this end, SHPC's 3 principals of No Change (see Chairman's Statement on page 32) facilitated a smooth transition as it provided security and continuity moving forward.

### STRATEGIC PRIORITIES

Upon the transition to an independent refinery within the Hengyuan Group, our strategic priorities have been identified as building blocks to secure the success of our Company moving forward into the new era.

### Our Strategic Priorities








These priorities are key to direction setting within our Company for continued safe and reliable performance as well unearthing new prospects and opportunities. Our internal standards and practices to operate a 'Safe and Reliable' refinery with 'People First' is core to our operations and fits well with the 3 'No Change' Policy as discussed by our Chairman. In tandem with the execution of projects and turnaround to support a 'Sustainable Future', they form the basis for expanding and growing our Company into the future.

Another priority is to be '\$ Smart' in terms of financial risk management when it comes to forex and hydrocarbon margin risk exposures, and in terms of spending money in a deliberate manner. In achieving these priorities, we need to 'Rise Together' with SHPC, new business partners, regulators and with the community; building a new corporate identity and driving performance through greater engagement and empowerment. These first five priorities will set the scene for the Company to 'Grow' in the future. Examples of potential opportunities include trading, leveraging the Asia trade pacts with China and diversifying our business.

Management will leverage on the experience, strengths and expertise of SHPC in developing all these tactics to deliver these priorities, make the Company more robust and grow our business by deploying technology advances available in China and to the Hengyuan Group of companies.

## 2016 PERFORMANCE ANALYSIS

	2016	2015	2014	2013	2012	
 <b>Safety</b>	Million Exposure Hours Worked	<b>1.34</b>	1.92	1.58	1.32	1.21
	Lost Time Injuries (LTI)	<b>1</b>	1	1	0	0
	Process Safety Incidents	<b>1</b>	0	0	0	1
	First Aid Cases (FAC)	<b>1</b>	5	4	4	5
 <b>Production &amp; Reliability</b>	Operation Availability	<b>82.10%</b>	86.10%	94.80%	97.70%	98.80%
	Unplanned Downtime (UPDT)	<b>7.20%</b>	4.51%	5.06%	2.17%	1.03%
	Production Volume (bbl)	<b>37.5 mln</b>	33.9 mln	37.9 mln	37.1 mln	37.1 mln
 <b>Margin &amp; Financial Performance</b>	Refining Margin (FIFO) (USD/bbl)	<b>5.46</b>	6.07	(2.34)	1.90	1.25
	Sales Volume ('000 bbl)	<b>39,049</b>	36,325	40,462	40,033	40,234
	Revenue (RM million)	<b>8,365</b>	9,080	14,263	14,696	15,086
	Profit After Tax (RM million)	<b>335</b>	352	(1,189)	(156)	(95)
	Cash generated from/ (used in) operations (RM million)	<b>(5)</b>	783	116	(252)	(38)
	Quick Ratio	<b>1.82</b>	0.67	0.48	0.79	1.09
 <b>Return on Investment</b>	Shareholders' Funds (RM million)	<b>1,010</b>	677	325	1,513	1,705
	Earnings/(Loss) Per Share (sen)	<b>112</b>	117	(396)	(52)	(32)
	Return on Average Capital Employed (times)	<b>0.19</b>	0.31	(0.60)	(0.05)	(0.03)
 <b>Sustainable Development</b>	Energy Intensity Index ("EI")	<b>114.0</b>	113.5	112.2	116.4	127.3
	Effluents – Average Oil in Water Concentration (avg mg/l)	<b>0.89</b>	1.02	1.20	2.05	2.53
	Waste Management					
	■ Sludge (MT)	<b>624</b>	957	805	616	1,763
	■ Spent Oil Water Emulsion (MT)	<b>1,835</b>	2,084	2,548	1,242	2,768
Public Complaints	<b>2</b>	5	5	1	1	



# Management Discussion & Analysis



## SAFETY

Our Company has constantly been recognised as an industry leader in setting high safety and process safety standards. We have adopted Shell's HSSE policies and practices post transition in our aim to continue with our high safety standards.

Some of our exemplary HSSE Performance Achievements include the following:

- Achieved more than 0.5 million manhours without a Loss Time Incident (LTI)
- Successful recertification and surveillance audit of the site's Management Systems of Quality (ISO 9001), Occupational Safety and Health (OHSAS 18001), and Environment (ISO 14001)

- Received the Negeri Sembilan State Award & Exceptional Award for the 2014/2015 Prime Minister's Hibiscus Award for Environmental Performance Achievement in Malaysia

Our strong safety culture is anchored on initiatives such as Goal Zero, Life-Saving Rules and Chronic Unease Mindset. These principals are key in driving our vision of Goal Zero i.e. Zero injuries, Zero significant incidents and Zero leaks. In striving for continuous improvement, our Company launched a new initiative called 'Process Safety to the Next Level' focusing on reduction of significant process safety incidents. There are three programmes related to this – The 8 Key Steps, Keep It in the Pipe and 9 Fundamentals of Process Safety.

These complete the overall Goal Zero mindset complementing the Life-Saving Rules that has been evident and effective in reducing fatalities globally.

## 9 Fundamentals of Process Safety



Always Use Two Barriers



Do Not Leave Open Drain Unattended



Take Interim Measures for SOE Failure



Follow SU & SD Procedures



Walk The Line



Do Not Change Without MOC



Verify Tightness



Provide Safe Isolation



Install Backflow Protection

## Life-Saving Rules

- |  |  |
|--|--|
| <p><b>1</b>  Work with a valid work permit when required</p> <p><b>2</b>  Conduct gas tests when required</p> <p><b>3</b>  Verify isolation before work begins and use the specified life protecting equipment</p> <p><b>4</b>  Obtain authorisation before entering a confined space</p> <p><b>5</b>  Obtain authorisation before overriding or disabling safety critical equipment</p> <p><b>6</b>  Protect yourself against a fall when working at height</p> | <p><b>7</b>  Do not walk under a suspended load</p> <p><b>8</b>  Do not smoke outside designated smoking areas</p> <p><b>9</b>  No alcohol or drugs while working or driving</p> <p><b>10</b>  While driving, do not use your phone and do not exceed speed limits</p> <p><b>11</b>  Wear your seat belt</p> <p><b>12</b>  Follow prescribed Journey Management Plan</p> |
|--|--|



### Personal Safety

During the year, a Lost Time Injury (LTI) incident was reported on 20 July 2016 related to a hand injury in a torquing activity. The involved person has since recovered and is currently still working for the company. In response to this incident, the Management Team and the involved contractor management immediately conducted a mass stand down with all staff and contractors to reflect on learnings to mitigate potential recurrence. The usage of correct tools and gloves while working were the main topics discussed. Pursuant to the above, a HSSE campaign titled 'High 5! Love Your Hands' was launched in September. The campaign promoted the 5 steps of hand injury prevention, being- 1) Recognise the 'Line of Fire'; 2) Identify the 'Hands-Off' Behaviours; 3) Select Appropriate Gloves for Work Tasks; 4) Select Appropriate Tools for Work Tasks and 5) Stay Focused.

### Process Safety

During the fourth quarter of 2016, the refinery experienced three significant Loss of Primary Containment (LOPC) incidents. Each of these incidents was contained swiftly, with our Emergency Response Team implementing the suitable response tactics to prevent escalations. One of the incidents occurred at our Single Buoy Mooring (SBM) which resulted in a crude oil spill to the sea. Together with the support from contractor partners and local authorities, our Company successfully completed the clean-up with zero harm to people and the environment including the PD beaches and fishing community. The Management Team then initiated reflections in a Town Hall session followed up by team huddles, to outline the necessary actions needed to prevent recurrence. A causal investigation on this incident will be completed during the second quarter of 2017.

Quick action and comprehensive mitigation measures will continue to define our response to safety incidents as improvement on health, safety, security and environment (HSSE) performance at the workplace remains a top priority for HRC moving ahead.

## Management Discussion & Analysis



### PRODUCTION AND RELIABILITY

Reliability is the ability of equipment to consistently perform its function when required, and meet customer demands at optimal economics within the physical capability of the equipment.

We recognise that reliability is the key

to stable, safe, energy efficient and low-cost operations that minimises our effect on the environment.

### Sustaining our Reliability Management Framework

In 2016, we have maintained our focus in improving and sustaining the elements of our Reliability Management Framework. The fundamental purpose is to embed the 'Reliability Mindset' as a culture in the organisation. This mindset ensures ownership and excellence at every phase of asset management – during equipment design, procurement, storage, installation, operations, trouble-shooting and maintenance. The Reliability Mindset drives individual accountability and collective ownership of equipment reliability issues through analysing and subsequent elimination of the root causes of failure.

Our key performance indicator for reliability is Operational Availability (OA) and Unplanned Downtime (UPDT) as per the chart above. This is an accumulative figure for the year under review. UPDT reflects the percentage of time the different units within the refinery were unable to operate. Despite a strengthening of the reliability process and mindset at the refinery as described above in 2016, the UPDT was recorded at a disappointing 7.2 percent. This performance was mainly caused by the following factors:

#### ■ Instrumentation Issues:

During the initial part of the year, instrument issues caused trips of the platformer and the LRCCU. Root cause analysis indicated that earthing of the equipment and structures was a concern and through a targeted workshop with specialists and Shell Projects & Technology (P&T), a suite of measures were implemented to improve the earthing of the units and instruments and to protect instruments against voltage surges. Also the redundancy in instrumentation was improved. These measures were effectively implemented in the second quarter and no more earthing related trips occurred during the rest of the year.

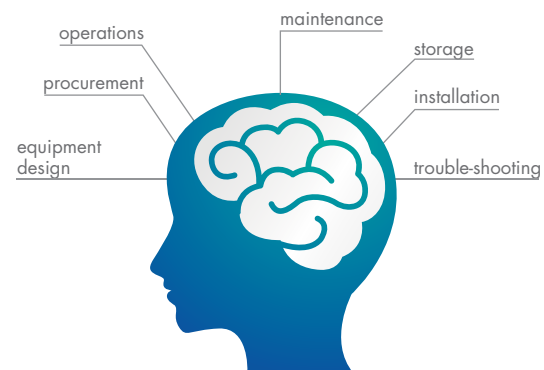
#### ■ Catalyst Blockages

Quarter 2 of 2016 showed some encouraging reliability, but in quarter 3 of 2016, the platformer suffered from a blockage of catalyst in the inlet chamber of the reactor and at the outlet of the catalyst regenerator vessel during two separate events. These events occurred during normal operation and were completely unexpected by our operators as well as by technical specialists and our licensor. In the industry the occurrence of these problems is rare. Both of the incidents were investigated, understood and addressed via procedures and adjustment of flow conditions to the reactor as well as through revised standards for introduction of used catalyst into the unit. Additional instrumentation and alarms will be installed during the 2018 turnaround (TA2018) to further improve the level of protection and create early warnings. As the platformer produces mogas blending components as well as hydrogen to desulphurise naphtha and gasoil, the operation of the refinery was significantly impacted in September and October.

#### ■ Catalyst Leak

In September the LRCCU unit suffered from a catalyst leak in one of the pipes that transports catalyst. As the catalyst at this point is very hot, the unit needed to be shut down to effectuate repairs on the pipe. Additional monitoring with a specialist firm has been set up on top of our own best in class monitoring, to get an early warning of pipe erosion happening, such that we have an opportunity to take preventive action. During the 2018 TA, the affected pipe will be replaced and all other sections will be inspected and repaired if required.

Excluding the above described key events, unplanned downtime was at about 2.5 percent, more in line with expectations. Causes of failure evolve around failure of rotating equipment in the crude units and integrity concerns at the jetty. We have taken action to investigate and develop counter measures and mitigations against further downtimes and are strengthening the causal learning quality and follow up, to ensure we have identified the real root cause in preventing future occurrences of similar incidents.





Moving into 2017, the site is embarking on a more proactive approach to identify latent threats that are still uncovered for the units involved in significant UPDT events in 2016. Proactive internal equipment reliability and preventive maintenance optimisation workshops supported by field experts at HRC and specialist companies will be looking at platformer down time threats and LRCCU catalyst leak avoidance. Maintenance at our seafront facilities is being prioritised, ahead of an integrity workshop to assure we can develop and deliver a long-term jetty asset management plan. This exercise is expected to underpin a better reliability going forward.

The urgency to deliver a vastly-improved Reliability performance is the key to achieving our business aspiration as it ensures continuous availability of equipment that can operate and process hydrocarbons during periods of good margin and as it avoids additional costs to continue to supply our market commitments for products.

Reliable plant operation is achieved including suitable equipment design, correct procurement and installation, proper storage, equipment operation within design limits and optimised maintenance. This knowledge and historical inspection data are being mobilised in 2017 with the implementation of Proactive Threats Identification (PTIE) and Asset Integrity Assessment (AIA) to ensure the right projects and maintenance will be executed during TA2018.

The above projects should ensure reliable operation of the refinery from 2018 to 2022, after which we plan to have the next turnaround.



## Management Discussion & Analysis



### MARGIN AND FINANCIAL PERFORMANCE

In the year under review, our Company posted a profit of RM335 million which is close to the RM352 million profit recorded in 2015. Even though refining margins were volatile during the year,

the CCS (current cost of stocks) margins for the full year averaged at USD4.06 per barrel whilst FIFO (first in first out) margins were USD5.46 per barrel (2015 CCS USD7.00, FIFO USD6.07) due to the gradual recovery of crude and product prices during the year. Further analysis of the financial performance follows below.

### Revenue and Gross Margin

Our Company recorded revenues of RM8 billion in 2016, lower by 8 percent compared to 2015, driven by reduced market traded crude and oil product prices. Crude prices averaged at USD43.69/bbl compared to USD52.46/bbl in 2015 attributable to high OPEC (Organisation of the Petroleum Exporting Countries) output with the intention of protecting their market share. Additionally, Iran ramped up their crude supply volumes in 2016 and did not participate in the supply cuts. During the year however, overall crude oil prices nearly doubled since levels of USD30.69/bbl in January 2016 with Brent Crude oil price ending at USD53.60/bbl in December in anticipation of production cuts as a deal between the OPEC and other heavyweight producers to cut around 2 percent from global production in 2017.

Gross profit margin was 10 percent, comparable to that of 2015, amidst lower revenue, primarily due to stockholding gains of USD1.40 per barrel equivalent to RM188 million, as the average crude and product prices saw a gradual recovery from USD47/bbl (end 2015) to USD61/bbl (end 2016). Oil prices recovered in 2016 as the market was generally restored with global crude inventory rebalanced. The steep increase in crude oil prices in October 2016 was driven by the news that OPEC members reached an agreement to curb production. Gross profit margins were further impacted by losses arising from foreign currency exchange fluctuations relating to crude oil purchases and product sales. The losses incurred in 2016 were approximately RM19 million as compared to losses of RM61 million in 2015. The USD/MYR rate was less volatile in 2016 whilst the MYR gradually weakened against USD from RM3.50 to RM4.30 for USD1.

The business improvement tactics delivered a value of USD16.3 million in 2016, with USD12.1 million achieved via crude optimisation and USD4.2 million achieved via feedstock optimisation. In 2016, the refinery has successfully acquired and processed a total of 80kt residue feedstock which has increased LRCCU utilisation by 3.6 percent.

The CCS refining margin in 2016 was USD4.06 per barrel in comparison to a higher margin of USD7.00 per barrel in 2015. The FIFO margin was USD5.46/bbl, including stockholding gains of USD1.40 per barrel in 2016, compared to stockholding loss of USD0.93 per barrel in 2015. The lower CCS margin is attributed to the weakening product cracks (the pricing difference between product and crude) with rising crude premiums in 2016 compared to 2015 and unplanned downtime of 7.2 percent in 2016.

### Income and Expenses

In 2016 as compared to 2015, our Company benefitted from lower finance costs (RM8.2 million) following the partial repayment of a term loan amounting to USD60 million in Q2 2016 and lower short term borrowings for working capital. Higher depreciation cost (RM27.7 million) however impacted profit after tax, following the depreciation of 2015 turnaround costs over a three-year period to the next turnaround, strategically aligning the planned start-up of equipment for Euro 4 compliant production in 2018.

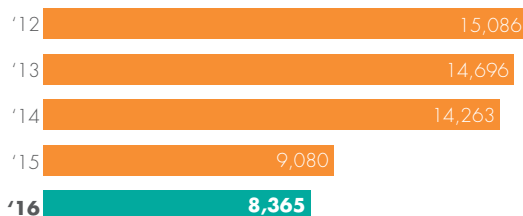
To ensure robust and continued operations post completion of the share sale by SOHL, we undertook a structured transition programme for which we incurred an expense of RM11.6 million, recognised within manufacturing expense. The programme includes legal advice and support on the term loan refinancing and hydrocarbon offtake agreements, professional fees for IT readiness review, the Independent Advisors' Circular, IT related costs such as annual software licensing and system subscription costs and contract resources to assist in the transition activities.

Our Company continued to focus on cost reduction initiatives which included further optimisation of catalyst utilisation and costs which formed a significant spend in our operating expense. Some of these savings were offset by the weakening of USD/MYR exchange rates in 2016.

**Profit After Tax** (RM million)



**Revenue** (RM million)



Our Company's administrative expenses in 2016 also saw some reduction as the global and functional support from Shell affiliates tapered off in the second half of the year. Recognised within other income is a recovery of intellectual property payments made to a Shell affiliate in previous years amounting to RM21.6 million as part of a once-off intellectual property buy-out arrangement.

**Total Assets and Liabilities**

Total assets have increased by RM129 million in 2016 to RM3,079 million. Further details of each component are set out below:

- Net book value of our fixed assets includes depreciation and amortisation charges of RM195 million in 2016. It comprises of the following:



47% Gasoil Treater/Hijau  
 21% LRCCU  
 11% Land & Buildings  
 6% Intangible Assets  
 4% 2015 Turnaround  
 11% Others

The valuation of these assets are as stated in our accounting policies.

- Our current assets comprise of inventories and receivables which have increased by 13 percent compared to 2015 as they directly correlate to higher oil prices. Cash balances have increased as a result of the operational profits and the realisation of the CCIRS derivative assets upon maturity, but was offset by higher working capital as a direct impact of rising oil prices. Further information is provided in the Cashflow commentary.

Total liabilities have decreased by RM204 million to RM2,069 million. Further details are set out below:

- Current liabilities comprise of payables arising from crude purchases and the portion of term loan balances that are repayable during the next 12 months. In the 2nd quarter, our Company repaid USD60 million of the term loan facility as a partial repayment using internally generated cash. The balance of the term loans and other short term borrowings that were outstanding as of 22 December 2016 were refinanced, pursuant to the terms of the loan agreements entered into prior to the share sale completion.
- Long-term liabilities comprise the new term loans which are repayable over a five year period. The term loans are denominated in USD and are secured by way of charges, corporate guarantee and/or cash collaterals.

**Cashflow**

We marked the year end with an improved cash position of RM356 million. Whilst our operating cash flows for the financial year resulted in a net outflow of RM5 million due to the higher crude and product prices in the 4<sup>th</sup> quarter and timing of receipts and payments towards the year end, our overall cash position was strengthened by RM318 million arising from the settlement of CCIRS derivatives. The net cash inflows were further utilised in servicing our interest obligations on borrowings (RM38 million), capital expenditure (RM27 million) and repayment of borrowings, net of drawdown of new term loans (RM67 million).



**RETURN ON INVESTMENT**

Return on average capital employed for the year under review stood at 19 percent, compared to 31 percent in 2015, at the back of a comparable net profit against an increasing capital base. Earnings per share of our Company was RM1.12 in the current year, marginally lower to the RM1.17 per share recorded in 2015.



## Management Discussion & Analysis



### SUSTAINABLE DEVELOPMENT

Prioritising economic, environmental and societal (EES) aspects of our business sustains financial success. At the same time we need to safeguard our environment and develop our reputation as a partner of first choice for our

shareholders, customers, employees and those with whom we do business, as well as society and the future generations.

Our Company is committed to protecting the environment. An integral aspect of our HSSE policies state requirements for integrating environmental and social factors into the way we plan, design and take investment decisions on new projects.

When we begin work on new major projects, an environmental, health and social impact assessment is conducted to ensure we reduce any negative impacts by:

- Safeguarding the health and safety of employees and neighbours
- Reducing disruptions to the community
- Lowering emissions (including greenhouse gases)
- Reducing impact on biodiversity
- Using less energy, water and other resources
- Managing wastes responsibly

We are proud to announce that our Company adheres to the environmental standards as defined by the Shell Group in the year under review and fully complies with the Malaysian legislations and other related international conventions and protocols. We adopt a systematic approach to the management of emissions and effluent discharge designed to ensure compliance and to achieve continuous improvement in line with our Company's Health, Security, Safety, the Environment and Social Performance (HSSE & SP) Commitment and Policy. In relation to energy efficiency, we were largely within the targeted energy consumption value. As reliability issues occur which impact our performance, these are identified and prioritised for future improvement.

### Waste Management

In our operations, we pursue progressive reduction of emissions, effluents and discharge of waste materials that are known to have negative impacts on the environment. A continuous internal monitoring programme is in place to help us to detect upset conditions early and to respond effectively and swiftly to prevent excursions; enabling the effluent discharge condition to stay within legal limits and be normalised.

The main sources of solid wastes arising from our Company's operations are Spent Oil-water Emulsion; Effluent Treatment Plant (ETP) Sludge; and spent catalysts. We use government approved and licensed contractors to treat and safely dispose of all hazardous wastes. In our efforts to conserve biodiversity and minimise disposal, we consistently look for ways to reduce, recycle or recover the wastes generated.

In 2016, we continued to fully re-use all spent catalysts from the catalytic cracking process as raw feedstock in the cement industry. We also recorded a 28 percent decrease in spent oil-water emulsion waste generation for 2016 as compared to 2014, and have reduced more than 300 MT of the ETP sludge production in the past one year due to effective process optimisation and waste elimination initiatives.

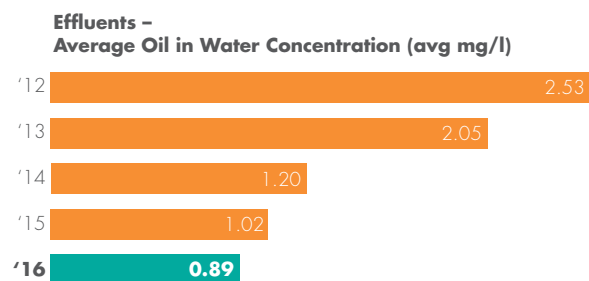
### Effluents

The quality of treated effluent water released via pipelines some 1 km offshore at the jetty is monitored diligently to ensure that we comply to the legislative limit of all parameters set by the Department of Environment's (DOE) Standard B limits, as stipulated in the Environmental Quality (Industrial Effluent Regulations) 2009, at the final discharge point. This is done at several monitoring points to ensure that any results beyond the limit will be resolved prior to final discharge.

In 2016, all parameters of the effluent discharge were in compliance to the Environmental Quality (Industrial Effluent Regulations) 2009 -Standard B. The average oil in water concentration of our Company's effluent water was 0.89 mg/L against legislative limit of 10 mg/L. Our Company managed to reduce our oil in water concentration by 15 percent every year since 2011 with total reduction of more than 70 percent in 2016 as compared to 2011. Other than that, our Company also conduct sea water quality monitoring at the jetty area in compliance to Interim Marine Water Quality Standards (IMWQS).

Reports on the effluent discharged and seawater quality are submitted to the Department of Environment on a quarterly basis.

To date, the monitoring shows full compliance to all legislations.





### Energy Consumption

Our Company is committed to using materials and energy efficiently in providing our products. Energy use and energy efficiency is actively monitored. The industry standard Solomon Associates Energy Intensity Index (EII) is used to measure and rank the energy efficiency of the refinery. The overall EII in 2016 is 114.0 which is 5 points higher than 2016 EII target of 109.0. The biggest contributing factor to the higher EII was the lower overall utilisation in the 4<sup>th</sup> quarter of 2016 due to reliability issues of our Platformer Unit and LRCCU. This resulted in suboptimal energy use. Another contributing factor was related to the lower coke yield by the Long Residue Catalytic Cracking Unit (LRCCU), which is a reflection of the carbon content in the feed. Whilst economics steered us to lower carbon content feedstock, there was consequently less steam generated during the regeneration of the catalyst, resulting in more energy used to produce steam in the boilers.

**Energy Intensity Index ("EII")**



### Public Complaints

We continue to remain fully committed in ensuring total compliance with the regulations and ensuring a safe and healthy environment for our community. All complaints lodged by our neighbours are taken seriously, if and when our operations inconvenience their daily lives. As a matter of policy, our Public Information Officer on Duty is responsible to attend to every complainant, and initiate investigation if necessary, no later than 48 hours upon receipt of the complaint.

In 2016, we recorded two public complaints with regards to our operation as compared to five in 2015. These were due to an unplanned trip of the LRCCU resulting in noise caused by temporary steam venting and increased Liquefied Petroleum Gas (LPG) vaporisation causing some smoke formation at the flare. For both cases, the Department of Environment (DOE) and representatives of nearby residents were informed of the causes and remedial action taken, as soon as was possible.

### Biodiversity

We recognise that our operations have consequences that, if not addressed properly, can result in the degradation or loss of biodiversity. It can affect the sustainability of our operations and can cost us time, money and reputation. Failure to protect biodiversity could also jeopardise our licence to operate, while a strong reputation built on the effective management of biodiversity will be a competitive advantage.

We are committed to conduct thorough Environment Impact Assessment (EIA) for projects and initiate early engagement with identified key stakeholders to ensure minimal impact to biodiversity and ensure a long term co-existence of our environment and our operations.

The EIA study for the Euro 4M mogas project was initiated in December 2016 and the Terms of Reference were sent for DOE approval in January 2017.

## Management Discussion & Analysis

### OUR PEOPLE

Much attention was given to our staff during the year under review given the transition and as we made further advancement on the Integrated People Plan (IPP), developed in 2015 to improve our employee value proposition as part of people development and well-being.

The IPP constitutes four pillars as follows:

- Rewards & Recognition
- People Development.
- Engagement and Communications
- Prioritisation

Rewards and Recognition initiatives to strengthen our people retention strategy adds to the employee value proposition. During the year, we initiated weekly Pride Moments to provide a platform to recognise individuals or teams who contribute and provide a difference in all aspects be it business performance or simply an act of goodness, whilst we continued our approach of recognising staff for delivering exceptionally well or beyond expectation of their job.

People Development initiatives for the year focused on charting better individual development, opportunities and growing in-house talents. We are now implementing talent development focus through site specific graduate programmes; organising soft skills training with a market leader in leadership consultancy; and rolling out of refreshed individual development guidelines.

#### Gender Diversity



Engagement and Communications initiatives targetted improving channels of communications and increasing the level of staff engagement. Energiser activities organised by staff for their fellow colleagues were also a crucial part to ensure the workforce remained a supportive community with good working relations. Efforts to enhance the presentation and engagement skills of leaders were also initiated to improve communications with staff during events such as team huddles and staff town hall engagements.

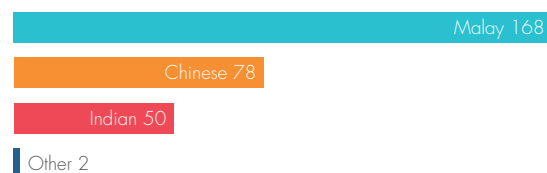
Prioritisation ensured that the workforce was and continues to be fully aligned on key deliverables. Management provides quarterly priorities to our staff covering the areas of Safety, Reliability, Transition and People. This ensures that staff are able to focus on the right areas in delivering immediate and long term value to our Company.

#### Human Resource Management

Our business success is directly linked to our people and their capability to meet current and future business challenges. As such our Company is committed to developing strategic human capital assets via investment in people development.

Strategic Human Resource (HR) functions like succession planning, skills development, talent and retention, policy and benefits, compensation management, Employee Relations and Industry Relations are taken under the direct umbrella of the HR team. To manage operational HR functions, HRC built a good partnership with the business process outsourcing provider (BPO), building capabilities in the BPO itself for high value support as well as providing good controls and accuracy in managing the HR transactional processes.

#### Ethnicity





## PROSPECTS AND RISKS FOR 2017/2018

As part of our strategic priorities moving forward, HRC is focused on implementing several key projects and opportunities to build a sustainable future. These initiatives are key to allow the refinery to continue operations and deliver products against the evolving product quality specifications demanded by the Malaysian market whilst respecting local regulations. At the same time, our Company will leverage on SHPC's resources to capitalise on its technological expertise in operating as an independent refiner and experienced operator producing Euro 6 compliant products as required in the China domestic market.



### ASSETS AND PROJECTS

#### **Euro 4M Mogas Project**

This is a crucial project to ensure the going-concern of our Company and sustainability of the business to meet the industry's future requirements. Our project team is developing the Basic Engineering Design and Front End Engineering Design (FEED) work with a reputable contractor and licensor with support from SHPC to ensure that the product specification is compliant to Euro 4M mogas specifications upon its planned implementation in October 2018.

Following our approval process, the Final Investment Decision (FID) for the project will be presented to the Board in 2<sup>nd</sup> quarter of 2017. Thereafter, the projects and technology teams will focus on project execution, targeting to complete the construction during the second half of 2018. To minimise downtime outside the Turnaround period, both the equipment tie-ins and completion are targeted during TA2018.

**RISK:** If the refinery is not able to produce Euro IV compliant products by the regulatory deadline, then our customer will import their product requirements, which are Euro 4M compliant. These imports cannot be co-mingled with the products that the refinery is able to produce now as they are Euro 2 compliant. Through the POA, our customer can contractually use our facilities to throughput their products. This means that the operations and financial performance of HRC would be significantly impacted during the period in which we are unable to produce Euro 4M products post the compliance date. Management and SHPC's current perspective is that we are confident that the project is on track and our refinery is able to meet the regulatory timeline by leveraging on SHPC's technical resources and guidance. Management is reviewing the project progress weekly to ensure challenges and hurdles are effectively dealt with to protect the project schedule.



Shandong Hengyuan's Euro 6 Mogas facilities.

#### **Major Turnaround 2018 (TA2018)**

The major turnaround in 2018 is driven by legislative requirements of the Malaysia Department of Occupational Safety and Health (DOSH). HRC subscribes to the DOSH Statutory Safety Inspection (SSI) program which is a structured integrity inspection and assurance programme. Part of the requirement is establishing a baseline of equipment inspection status, which requires all equipment to be opened in 2018. A full inspection of the equipment during TA2018 will thus enable us to renew our license to operate as issued by DOSH. With this inspection our refinery is in a good position to negotiate a 4-year turnaround cycle post-2018 with DOSH.

During the turnaround, maintenance work will be executed to ensure the integrity and reliability of operation of all equipment. The scope is established based on previous inspections, our and our technical advisor's experience and issues we observed during the current plant operation. Scope definition, preparation, resourcing of materials is an important 2017 deliverable. A significant investment for equipment renewal that will take place in TA2018 is the replacement of the internals and top dome of the catalyst regenerator of the LRCCU unit. The life of these internals is 18 years and replacement is due in 2018, as confirmed during the inspections in the previous turnaround in 2015.

**RISK:** Planning and execution is crucial to a successful and timely Turnaround. Any unexpected incident or emergent scope arising during the event could result in an extended shutdown resulting in financial impact. The project team which has been assigned to this crucial project comes with extensive experience in HRC's previous turnarounds and operates within the well established governance framework. Moreover the regenerator top dome project is executed in partnership with contractors that have experience with the manufacturing and installation in similar units elsewhere. The manufacturing of the new dome is not schedule critical.

## Management Discussion & Analysis

Additionally, the turnaround is crucial as it is the only opportunity to modify equipment for safety, efficiency, reliability, increased capacity or for economic reasons. Several future projects which will be tied-in into the plant during TA2018, are also being developed during 2017.

### Opportunistic Tie-ins during TA2018

TA2018 provides a timely opportunity to install facilities that will allow future modifications to the process during normal operation of the refinery between 2018-2022. By installing tie-ins during TA2018, we avoid the need for costly refinery shutdowns in 2019 or 2020 to connect new equipment required to meet the compliance due dates. These compliance driven projects include meeting the Department of Environment's (DOE) environmental compliances for Clean Air by 2019 and to prepare for the planned investment to comply with the new Euro 5 gasoil specifications in 2020.

- **CAR Compliance:** Clean Air Regulation (CAR) is mandated for compliance in 2019 by DOE. HRC is currently undertaking front end studies to assess changes required to meet CAR requirements. We plan to use TA2018 as the opportunity to execute tie-ins, whilst the project is targeted to complete before the 2019 compliance date. This is subject to Final Investment Decision approval by the Board
- **Euro 5 Gasoil Project:** DOE is mandating Euro 5 gasoil specifications by 1 September 2020. Since our next TA is only planned for 2022, we need to undertake project tie-ins during the upcoming TA2018 window. Front end studies and licensor selection are now in progress to enable the timely identification of tie-in points.

**RISK:** Our resources are being stretched to deliver several large projects at the same time. The Board has sanctioned for HRC to engage external subject matter experts where necessary to ensure that the initial identification and implementation for tie-ins are executed to the intended specifications and in a timely manner.

### COMMERCIAL AND COST

We actively seek new opportunities to grow our business and realise new supply and procurement opportunities as well as hedge management.

#### Business Improvement Tactics

##### ■ Diversification of crude oil and feedstock supply

HRC continues to leverage on its present strengths to source for different crudes, blending components and feedstock to obtain the lowest cost of sales whilst safeguarding our production and yield levels. We are able to do so by leveraging on our long term relationship with Shell International Eastern Trading Company (SIETCO) as well as exploring new opportunities with market traders and through SHPC to widen our crude diversification and optimisation efforts.

##### ■ Energy efficiency improvement

Several relatively low cost energy improvement opportunities have been identified through an expert team in 2016. HRC plans to start implementation of these opportunities in 2017 to reduce energy costs and reduce the energy footprint of the refinery. More capital intensive projects to reduce energy consumption have been parked for the moment to ensure the delivery of the major projects described previously.

##### ■ Procurement and Cost reduction

SHPC opens up an opportunity for HRC to enhance cost and procurement optimisation through their knowledge of the Chinese market and through new partnerships. HRC will refresh our sourcing and contracting strategies to ensure that we can capture reductions in material costs such as catalysts whilst maintaining the integrity and performance of our assets.



### **Trade opportunities**

With the transition, HRC is also exploring trade opportunities in China leveraging on SHPC's in-depth knowledge of the domestic requirements and opportunities in China. Whilst HRC continues to provide a secure supply of main fuels to the Malaysian market, we are exploring outlets for intermediary products. Import and export are also driven by the local product specifications which may help us to meet local regulations without excessive capital investment and cash requirements. Thus, we are exploring potential business with alternative clients for products without impacting our deliverables within the POA. In doing so we expect to be in a good position to utilise the taxation benefits for products imported into China from Malaysia.

### **Managing Market Driven Risks**

As an independent refiner, HRC is cognisant of refining margins and foreign exchange (FX) risks that could hamper our financial performance. The potential to hedge and limit the risk exposures arising from these market movements could result in a more consistent financial performance.

#### ■ **Oil related Commodities/Margin Performance**

This risk consists of 2 distinct market movements as defined below:

##### – **Margins Performance**

The spread between the products which we sell and the feedstock which we purchase determines the refining margins. As the pricing of both our sales and purchases is influenced by a wide variety of market forces, HRC is exploring the use of hedging to protect its refining margins against extreme movements where possible. Hedging however can also limit the gains if the market becomes volatile beyond expectations. Hence the management is guided by subject matter experts whilst also targeting to secure HRC's operating cash requirements.

##### – **Stockholding Gains/Losses**

Oil price movements impact financial performance because HRC holds on average 30 to 40 days of inventories. Whilst this may also be hedged to limit stockholding impact, the management will work with subject matter experts to determine the levels of hedging, keeping in mind that HRC can capture potential gains from oil price increase from current levels. However, as current market analysts expect experiencing lower oil prices for longer period, this exposure needs to be ascertained at every instance based on available market information.

#### ■ **Foreign Exchange Exposures**

This market driven risk arises because of HRC's different settlement currencies. Although our sales and purchases are USD based as these values are linked to commodity pricing published by platforms such as Platts, our sales are settled using the translated equivalent of Malaysian Ringgit (MYR or RM) in compliance with local regulations for settlements between resident companies. Triggered by the refinancing of the loan to be entirely USD based financing, our Company has changed its functional currency to USD in line with our accounting policy effective 1 January 2017. This change ensures that our financial reporting reflects our Company's underlying transactions in accordance with the Malaysian Financial Reporting Standards (MFRS).

With hedging comes a certain level of risk which needs to be balanced with the benefits. Management is cognisant of the exposures and are liaising closely with market consultants to derive and execute suitable hedges for the refinery based on our projected sales and production volumes and taking into account market information as well as our cash requirements. Management will continue to manage foreign exchange exposure risks as guided by the governance policies agreed by the Board of Directors.





# CORPORATE SOCIAL RESPONSIBILITY (CSR)

In tandem with our commitment to deliver sustainable growth and profitability to our shareholders and stakeholders at large, Hengyuan Refining Company Berhad (HRC) has continued to embrace the principles of corporate social responsibility (CSR) in a holistic manner.

Over the years, the Company has spearheaded and supported a wide spectrum of meaningful and relevant socially responsible initiatives throughout our value chain. Collectively, the Company's efforts can be categorised into four CSR pillars, namely Marketplace, Community, Workplace and Environment.

The following is a report of initiatives based on these four pillars carried out by our Company during the financial year ended 31 December 2016.



## MARKETPLACE

Our Company has placed significant emphasis on cultivating a corporate culture anchored in progressive business ethics while embracing good corporate governance and excellent product stewardship. This culture has been encouraged and fostered over time via clearly defined processes and procedures that relate to the way we conduct our business activities.

We have also remained committed towards engaging our stakeholders in a timely and transparent manner. By communicating and disseminating quality and accurate information about our

Company's operations, developments and financial performance, we have gained positive support and buy-in from our stakeholders at large.

## COMMUNITY

HRC's endeavour to be a good neighbor and responsible operator remains our priority. In 2016, we have maintained a high level of social and community investments through our outreach programmes that were spearheaded in partnership with the Port Dickson Residents Association, local communities and schools within our area.



These community enrichment initiatives include:

- Health, Safety, Security and Environment (HSSE) in the Community, a programme that consist of talks and demonstrations to enhance the community's awareness on home safety awareness
- Breaking of fast with our neighbouring boarding school students
- Contribution in cash and in kind to Yayasan Munarah, a charity which supports underprivileged youths in Negeri Sembilan
- Contribution to the food rations for distribution to underprivileged Indian families in conjunction of Deepavali
- Gotong-royong events with our fenceline communities to create a clean environment

## WORKPLACE

In the aspect of Health, Safety, Security and Environment (HSSE), our Company adheres to the Life Saving Rules and the Process Safety 9 Fundamental guidelines. We have also organised various activities during the year under review that include an emergency response campaign, Goal Zero Walk and various health and safety campaigns to increase knowledge on personal and process safety.

In terms of human capital development, HRC has also invested in a series of formal multi-skilling training and learning sessions focusing on different topics such as communication effectiveness, proactive and action-oriented mindset and effective time management, amongst others. All these initiatives have been put in place to realise our talents' full potential in the workplace.



## ENVIRONMENT

(See Sustainable Development report on page 54.)