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Company Overview
Performance Highlights
Growth Prospects
RAPID Petrochemical Projects
Market Outlook
COMPANY OVERVIEW
A leading chemical player in the region

- First plant in 1985
- Made up of 29 subsidiaries, joint ventures & associated companies
- Over 4,600 employees

- Listed since November 2010
- ~RM53* billion (~USD13 billion) market capitalisation
- Member of MSCI Asia Ex-Japan / MSCI Asia Ex-Japan Chemicals
- Top 10 in FBM KLCI, FBM Emas Shariah and Bursa Malaysia FTSE4GOOD Index

- One of South East Asia’s largest integrated gas-based chemicals producer
- Largest Methanol producer in South East Asia and fourth largest in the world
- Second largest Urea producer in South East Asia in 2016 with SAMUR
- Third largest LDPE producer in South East Asia
- Largest MTBE capacity in South East Asia

*As at 30 June 2016
Production capacity spread across Malaysia

- Total **10.8 mil mtpa** of existing production capacity
- Total of **18 manufacturing plants** across the Group:
  - Wholly-owned: **9 plants**
  - Partly-owned: **5 plants**
  - Associates: **4 plants**
- Two **integrated petrochemical complexes** in **Kertih**, Terengganu and **Gebeng**, Pahang
- Three **manufacturing complexes** in **Gurun**, Kedah
  - **Bintulu**, Sarawak
  - Federal Territory of **Labuan**
- **New complexes** in **Sipitang**, Sabah by 2016 and **Pengerang**, Johor by 2019

**Olefins & Derivatives**
- **Kertih IPC**: 4.9 mil mtpa
  - Ethylene
  - Polyethylene\(^1\)
  - Benzene
  - Paraxylene
  - Ammonia, Carbon Monoxide & Oxogas
  - Ethylene Glycols
  - Butanol, Ethanolamines, Glycol Ethers, Butyl Acetate, and other performance chemicals
  - Acetic Acid\(^2\)
  - MTBE
  - Propylene
  - Acrylics, Oxo-alcohols, Butanediol \(^2\)
  - Aroma, 2-EH Acid, HR-PIB\(^2\) **110 ktpa**

**Fertilisers & Methanol**
- **Gurun**: 5.9 mil mtpa
  - Urea
  - Ammonia
  - Methanol
  - Aroma, 2-EH Acid, HR-PIB\(^2\)
- **Bintulu**: 4.9 mil mtpa
  - Ammonia
  - Urea
- **Labuan**: 6 mil mtpa
  - Methanol
- **Sipitang**: 3.15 mil mtpa
  - Ammonia
  - Urea **1.94 mil mtpa**

**New capacities**
- **xx mil mtpa**

\(^1\) Low Density Polyethylene (LDPE), Linear Low Density Polyethylene (LLDPE), High Density Polyethylene (HDPE)
\(^2\) Products from associates (addition to PCG capacity is based on PCG equity)
Operational flexibility to modify product mix, minimise molecule loss, and optimise profits across the entire value chain.

Integrated support and ancillary services leading to substantial operational and logistic efficiencies.
Established market leader in South East Asia and China

- Physically present in Malaysia, Thailand, China, Indonesia, Vietnam, the Philippines and India
- Higher netback market particularly in South East Asia and China
- Gearing towards value-driven customer solutions

Revenue by Region
- SEA: 33%, Malaysia: 37%, China: 16%, ROTW: 14%

Revenue by Channel
- Traders/Distributors: 49%, End Customers: 51%
- Revenue by Segment
  - F&M: 30%, O&D: 70%
- Revenue by Contract
  - Spot Customers: 30%, Term Customers: 70%

*FY2015 Data
Strong competitive advantages with resilient business performance

- **Fully integrated facilities and infrastructure**
  Integration results in lower costs, optimum yields and greater flexibility

- **Secure and competitive feedstock supply**
  Advantaged gas-based feedstock, second only to Middle East players

- **Large scale and diversified product portfolio**
  Economies of scale for various applications reduce market risk

- **Close to key growth markets**
  Optimised inventory along with competitive storage & distribution

- **Established market leader**
  #1 for Methanol, #3 for MEG and #4 for Urea by production capacity
Sustained world class operational performance

- Highest annual Group utilisation of 85% since listing
- Improved feedstock supply through close relationship with supplier
- Improved plant reliability resulting from effective asset management
Maximised sales in higher netback markets

- Higher sales volume in line with higher plant utilisation
- Sales concentration in South East Asia
- Optimisation of cost-to-serve through logistics and inventory management
Robust financial results despite weak market conditions

**Revenue (RM Million)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>1H 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>16,599</td>
<td>15,202</td>
<td>14,597</td>
<td>13,536</td>
<td>6,349</td>
</tr>
</tbody>
</table>

**EBITDA (RM Million)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>1H 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA</td>
<td>5,778</td>
<td>5,076</td>
<td>4,644</td>
<td>4,660</td>
<td>2,350</td>
</tr>
</tbody>
</table>

**PAT (RM Million)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>1H 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAT</td>
<td>3,837</td>
<td>3,504</td>
<td>2,726</td>
<td>3,091</td>
<td>1,445*</td>
</tr>
</tbody>
</table>

**Basic EPS (sen)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>1H 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>44</td>
<td>39</td>
<td>31</td>
<td>35</td>
<td>13</td>
</tr>
</tbody>
</table>

*Note: 1H2016 PAT = RM1,445 million excluding elastomers project write-off in 2Q2016 amounting to RM241 million. Post write-off, PAT = RM1,204 million and PAT Margin = 19%.
Shareholder’s funds sustained despite growth initiatives

1H 2016
- **RM0.07 dividend per ordinary share**
- **RM560 million dividend payout**
- **53% dividend payout ratio**
Capital expenditure allocated for existing assets and future growth

- **Growth CAPEX** mainly for SAMUR, Aroma Ingredients, 2-EH Acid, HR-PIB and RAPID Petrochemical Projects
- **Operations CAPEX** consists of reliability and integrity projects, turnaround activities, value improvements and other operational requirements
GROWTH PROSPECTS
Our focus is to strengthen basic petrochemicals and selectively diversify into specialty chemicals

**Corporate Vision**

The Preferred Chemical Company Providing Innovative Customer Solutions

1. **Strengthen basic petrochemicals**
   - i. Achieve sustainable world class plant performance
   - ii. Competitive marketing capability with regional presence

2. **Selectively diversifying into derivatives, specialty chemicals and solutions**
   - i. Deliver innovative customer solutions to strengthen market position and protect value
   - ii. Diversification of petrochemicals into higher value adding products
SAMUR will propel PCG to be the second largest urea producer in South East Asia

**Sabah Ammonia and Urea (SAMUR) Project**

<table>
<thead>
<tr>
<th>Description / Location</th>
<th>New world-scale, green field urea production facility at Sipitang, Sabah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedstock</td>
<td>Methane</td>
</tr>
<tr>
<td>Cost</td>
<td>USD1.9 billion</td>
</tr>
</tbody>
</table>
| Product / Capacity     | Urea (1.20 mil mtpa)  
                         | Ammonia (0.74 mil mtpa)                                                |
| Target Commissioning   | 2H 2016                                                                 |
| Product Usage          | Fertilisers                                                            |

**Product Usage**

- Fertilisers
# Aroma Ingredients, 2-EH Acid and HR-PIB will diversify our portfolio into higher margin chemicals

<table>
<thead>
<tr>
<th>Description / Location</th>
<th>Aroma Ingredients Project</th>
<th>2-EH Acid Project</th>
<th>HR-PIB Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description / Location</td>
<td>Integrated Aroma Ingredients Complex at existing BASF PETRONAS Chemicals Integrated Petrochemical Complex in Gebeng, Kuantan</td>
<td>Higher value adding product (2-Ethylhexanoic Acid (or 2-EH Acid) at existing BASF PETRONAS Chemicals Integrated Petrochemical Complex in Gebeng, Kuantan</td>
<td>Intermediate product for the manufacturing of fuel and lubricant additives at existing BASF PETRONAS Chemicals Integrated Petrochemical Complex in Gebeng, Kuantan</td>
</tr>
<tr>
<td>Feedstock</td>
<td>Isobutene, formaldehyde</td>
<td>Butanediol, propylene</td>
<td>Isobutylene</td>
</tr>
<tr>
<td>Product / Capacity</td>
<td>Citral, Citronellol and L-Menthol (30 kmtpa)</td>
<td>2-Ethylhexanoic Acid (30 kmtpa)</td>
<td>Highly Reactive Polyisobutene (50 kmtpa)</td>
</tr>
<tr>
<td>Target Commissioning</td>
<td>Citral and Citronellol (2H 2016) L-Menthol (LQ 2017)</td>
<td>4Q 2016</td>
<td>4Q 2017</td>
</tr>
<tr>
<td>Product Usage</td>
<td>Home and personal care products, flavours, fine fragrances, food ingredients, pharmaceutical applications</td>
<td>PVC stabiliser, paint dryers, synthetic lubricants, PVB plasticiser, medical intermediates and cosmetics</td>
<td>Component to manufacture fuel and lubricant additives, such as fuel detergents or dispersants for engine oils</td>
</tr>
</tbody>
</table>

**Citral**: Vitamins  
**Citronellol**: Citrus notes in perfumes  
**Menthol**: Cooling effects in personal care products  
**2-EH Acid**:  
**HR-PIB**:
RAPID PETROCHEMICAL PROJECTS
RAPID petrochemical projects are PCG’s major growth plan
World scale, fully integrated project and will be cost competitive

PIC Investment
USD27 Bil

6 associated facilities

RAPID Investment
USD16 Bil

Refinery
220 kbd Petroleum Products

Steam Cracker

PETROCHEMICAL Investment
USD2.6 Bil*

Petrochemical products
3.15 mil mtpa

*Investment by PCG
Fully integrated facilities and infrastructure with secure feedstock supply

### Refinery and Cracker
- 300 kbpd Crude Oil
  - Naphtha & LPG
  - Refinery
  - Steam Cracker

### Petrochemical Plants
- C2 (Ethylene)
- C3 (Propylene)
- C4 (Butanediol)

### Supported by Ancillary Facilities
- PCP: Pengerang Co-generation Plant
- PDT2: Pengerang Deepwater Terminal
- UF: Utilities & Facilities
- PAMER: Raw Water Supply Project
- RGT2: Regasification Terminal
- ASU: Air Separation Unit
Opportunity for capacity growth and portfolio expansion

Capacity Growth with world scale plants

Portfolio Expansion with leading edge technology

**Nameplate Capacity (Mil MT)**

- 2015: 10.8
- 2016 - 2018: 2.0
- 2019: 3.15
- 2020: 16.0

**Number of Products**

- 2015: 29
- 2016 - 2018: 5*
- 2019: 10**
- 2020: 44

Notes:
- New Products
- **RAPID**
  1. Raffinate-2
  2. Homo PP
  3. Impact PP
  4. Random PP
  5. Terpolymer
- **Specialties Projects**
  1. Citral
  2. Citronellol
  3. L-menthol
  4. 2-EH Acid
  5. HR-PIB
  6. Flexi PE
  7. mLLDPE
  8. TEG
  9. Butadiene
  10. INA
Successful execution of our growth projects will elevate PCG as a key Asia Pacific player

**Portfolio**

- Methanol – AP #1, World #4
- MEG – SEA #1
- PP – SEA #1
- MTBE – SEA #1
- Butanol – SEA #1
- Urea – SEA #2
- Ethoxylates – SEA #2
- PE - > 1 mil MTPA capacity

**Positioning**

1. Secure & competitive feedstock supply
2. Strategic location in SEA to benefit from FTAs (AFTA, ACFTA, ASEAN + 3 & 6) & close to key growth markets
3. Fully integrated facilities & infrastructure, large scale & diversified product portfolio operated at world class level
4. Portfolio of long term high value customers with lock-in position
5. Portfolio of customized solutions to generate higher sales premium and lock-in position
2016 remains challenging with continued uncertainty in market conditions

We expect stabilized market sentiment for O&D and bearish F&M prices on the back of crude oil price uncertainties and supply & demand balance

### Olefins & Derivatives

<table>
<thead>
<tr>
<th>Product</th>
<th>Market Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene</td>
<td>Heavy turnarounds in North East Asia amidst slow downstream demand</td>
</tr>
<tr>
<td>Polymers</td>
<td>Low buying interest beginning Q3 and firm thereafter to meet seasonal demand</td>
</tr>
<tr>
<td>MEG</td>
<td>Firm polyester demand despite potential excess supply</td>
</tr>
<tr>
<td>Aromatics</td>
<td>Firm PTA &amp; polyester demand despite long supply</td>
</tr>
</tbody>
</table>

### Fertilizers & Methanol

<table>
<thead>
<tr>
<th>Product</th>
<th>Market Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>Excess supply and sluggish demand</td>
</tr>
<tr>
<td>Ammonia</td>
<td>Excess supply and limited demand from industrial application</td>
</tr>
<tr>
<td>Methanol</td>
<td>Reliable supply at the back of firm MTO demand</td>
</tr>
</tbody>
</table>
Sustain world class operational excellence
- Maximise plant utilisation via effective asset management and feedstock supply reliability
- Cost optimisation
- Maintain good HSE performance

Extract more value through commercial excellence
- Expand presence in key market segments
- Improve customer experience
- Optimise cost-to-serve

Effective project delivery
- Commercial operations of SAMUR, Aroma Ingredients Complex
- Project execution of 2-EH Acid, HR-PIB, RAPID petrochemicals
PCG Corporate Structure

Wholly-owned subsidiaries
Partly-owned Subsidiaries
Joint ventures and associates

(1) Wholly-owned subsidiary as remaining shareholding is held through other subsidiaries within PCG (1 share held by Polypropylene Malaysia Sdn Bhd & 1 share held by PETRONAS Chemicals Marketing (Labuan) Ltd)
(2) Subsidiary pursuant to Malaysian Financial Reporting Standards 10
Significant experience in the petrochemical industry with proven track records

Datuk Sazali Hamzah
Managing Director / Chief Executive Officer

- More than 25 years in the industry
- Led Corporate Strategic Study on enhancing plant performance and operational excellence
- Previously MD/CEO, PETRONAS Penapisan Melaka Sdn. Bhd.

Rashidah Alias
Chief Financial Officer

- More than 21 years experience, of which 18 years in the industry
- Fellow of the Institute of Chartered Accountants in Australia and New Zealand and Member of the Malaysian Institute of Accountants
- Previously Senior General Manager of Group Treasury in PETRONAS

M Yusri M Yusof
Head of Manufacturing

- Served PETRONAS for the past 27 years
- Led the Process and Technology Department and plant Technical Services
- Previously plant head, PETRONAS Chemicals Olefins, Glycols and Derivatives Sdn. Bhd.

Akbar Md Thayoop
Head of Commercial

- More than 25 years in the industry
- Involved in the Peninsular Gas Pipeline project and the Lateral Gas Pipeline System for the country
- Previously Head, Retail Division, PETRONAS Dagangan Berhad

Abdul Aziz Othman
Head of Strategic Planning and Ventures

- More than 26 years in the industry
- Been in various planning and strategic development positions within PETRONAS
- Previously CEO, Vinyl Chloride (Malaysia) Sdn. Bhd.
## PCG Existing Production Capacity

<table>
<thead>
<tr>
<th>Plant</th>
<th>Location</th>
<th>Nameplate Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETRONAS Chemicals Ethylene Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>400,000 mtpaethylene</td>
</tr>
<tr>
<td>PETRONAS Chemicals Polyethylene Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>300,000 mtpaHDPE/LLDPE and pipe grade PE</td>
</tr>
<tr>
<td>PETRONAS Chemicals Olefins Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>684,720 mtpaethylene and propylene</td>
</tr>
<tr>
<td>PETRONAS Chemicals Derivatives Sdn Bhd (4 plants)</td>
<td>Kertih</td>
<td>410,000 mtpaethoxylates, ethanolamines, glycol ethers, butanol, butyl acetate, nonylphenol ethoxylates, polyethylene glycol and polyalkaline glycol</td>
</tr>
<tr>
<td>PETRONAS Chemicals Glycols Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>765,000 mtpaethylene oxide and ethylene glycols</td>
</tr>
<tr>
<td>PETRONAS Chemicals LDPE Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>255,000 mtpaLDPE</td>
</tr>
<tr>
<td>PETRONAS Chemicals Aromatics Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>687,700 mtpaparaxylene and benzene</td>
</tr>
<tr>
<td>PETRONAS Chemicals Ammonia Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>1,132,400 mtpamammonia, oxogas, and carbon monoxide</td>
</tr>
<tr>
<td>BP PETRONAS Acetyl Sdn Bhd (1 plant)</td>
<td>Kertih</td>
<td>500,000 mtpaacetic acid</td>
</tr>
<tr>
<td>PETRONAS Chemicals MTBE Sdn Bhd (2 plants)</td>
<td>Gebeng</td>
<td>815,000 mtpaMTBE, propylene, and n-butane</td>
</tr>
<tr>
<td>PETRONAS Chemicals Methanol Sdn Bhd (2 plants)</td>
<td>Labuan</td>
<td>2,331,000 mtpamethanol</td>
</tr>
<tr>
<td>ASEAN Bintulu Fertiliser Sdn Bhd (1 plant)</td>
<td>Bintulu</td>
<td>1,200,000 mtpaurea and ammonia</td>
</tr>
<tr>
<td>PETRONAS Chemicals Fertiliser Kedah Sdn Bhd (1 plant)</td>
<td>Gurun</td>
<td>1,149,700 mtpaurea, ammonia, and methanol</td>
</tr>
<tr>
<td>PETRONAS Chemicals Fertiliser Sabah Sdn Bhd Project SAMUR under construction (1 plant)</td>
<td>Sabah</td>
<td>1,940,000 mtpaurea and ammonia</td>
</tr>
<tr>
<td>Malaysian NPK Fertilizer Sdn Bhd (1 plant)</td>
<td>Gurun</td>
<td>310,000 mtpaNPK</td>
</tr>
<tr>
<td>Idemitsu Styrene Monomer Malaysia Sdn Bhd (1 plant)</td>
<td>Pasir Gudang</td>
<td>240,000 mtpastyrene monomer</td>
</tr>
</tbody>
</table>

(1) Associate company
### PCG RAPID Petrochemical Projects Capacity

<table>
<thead>
<tr>
<th>Plant</th>
<th>Location</th>
<th>Nameplate Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRPC Polymers Sdn Bhd</td>
<td>Pengerang</td>
<td>1,750,000 mtpa polypropylene, mLLDPE, flexi-PE (under evaluation)</td>
</tr>
<tr>
<td>PRPC Glycols Sdn Bhd</td>
<td>Pengerang</td>
<td>1,400,000 mtpa ethylene oxide, MEG, DEG, TEG</td>
</tr>
</tbody>
</table>
Advantageous arrangements for gas feedstock

<table>
<thead>
<tr>
<th>Ethane (as feedstock)</th>
<th>Methane (as feedstock)</th>
<th>Methane (as fuel gas)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use</strong></td>
<td></td>
<td><strong>Raw material in production of methane based products</strong></td>
</tr>
<tr>
<td>• By-product of gas separation and processing</td>
<td><strong>Process (furnace), Utilities and power generation</strong></td>
<td><strong>Process (furnace), Utilities and power generation</strong></td>
</tr>
<tr>
<td>• Used in production of olefins and its derivatives</td>
<td><strong>Linked to end-product market prices and moves accordingly-margin protection</strong></td>
<td><strong>Regulated prices</strong></td>
</tr>
<tr>
<td>• PCG is only user and customer</td>
<td><strong>Linked to end-product market prices and moves accordingly-margin protection</strong></td>
<td><strong>Regulated prices</strong></td>
</tr>
<tr>
<td><strong>Pricing volatility</strong></td>
<td><strong>Linked to end-product market prices and moves accordingly-margin protection</strong></td>
<td><strong>Regulated prices</strong></td>
</tr>
<tr>
<td>• Broadly fixed prices in long term, negotiated contracts</td>
<td><strong>Linked to end-product market prices and moves accordingly-margin protection</strong></td>
<td><strong>Regulated prices</strong></td>
</tr>
<tr>
<td>• Relatively low cost base</td>
<td><strong>Linked to end-product market prices and moves accordingly-margin protection</strong></td>
<td><strong>Regulated prices</strong></td>
</tr>
</tbody>
</table>

(1) Other feedstock in Kertih IPC: Butane, Methane and Heavy Naphtha
Robust margins from competitive feedstock supply

World Cost Curve: Ethylene

(Cost Basis = Plant Gate, Product Basis = Ethylene, Operating Rate Basis = IHS Baseline Integration Basis = Off)

Source: IHS, July 2016
## Close to key growth markets

<table>
<thead>
<tr>
<th>Shipping Days*</th>
<th>Malaysia (Kertih)</th>
<th>Middle East (Jubail, Saudi Arabia)</th>
<th>USA** (Houston, Louisiana)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China (Xiamen)</td>
<td>6 days</td>
<td>19 days</td>
<td>37 days</td>
</tr>
<tr>
<td>Japan (avg. Shimizu, Sakai, Kobe, Mizushima)</td>
<td>9 days</td>
<td>23 days</td>
<td>34 days</td>
</tr>
<tr>
<td>Taiwan (Kaohsiung)</td>
<td>6 days</td>
<td>19 days</td>
<td>37 days</td>
</tr>
<tr>
<td>Indonesia (avg. Surabaya, Semarang)</td>
<td>4 days</td>
<td>16 days</td>
<td>42 days</td>
</tr>
<tr>
<td>Thailand (Bangkok)</td>
<td>3 days</td>
<td>16 days</td>
<td>43 days</td>
</tr>
</tbody>
</table>

**Shipping Considerations**
- Smaller ships and smaller loads economically viable
- Less crowded routes
- More frequent vessels
- Only large ships to maintain economies of scale
- Potential delay through crowded Straits of Malacca
- Only large ships to maintain economies of scale

* Assuming 12 knots/hr average cruising speed
** via Panama Canal

Source: sea-distances.org
Market Overview 2015-2016
Ethylene, LDPE, Aromatics, Fertilisers & Methanol
THANK YOU

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