



PETRONAS CHEMICALS GROUP BERHAD

Corporate Presentation
September 2017

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EXCELLENCE. DYNAMIC GROWTH



Company Overview



Performance Highlights



Growth



Outlook

**EXCELLENCE.
DYNAMIC GROWTH**



Company Overview



A leading chemical player in the region

- First plant in **1985**
- Made up of **31 subsidiaries**, joint ventures & associated companies
- Over **4,600 employees**

- Listed since **November 2010**
- **~RM56 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

* as at 31 Jul 2017

- **South East Asia's largest integrated gas-based chemicals producer**
- **Largest Methanol** producer in Asia Pacific and **4th largest** in the world
- **Largest MTBE, Butanol, BGE & Ethanolamines** producer in South East Asia**
- **2nd largest Ammonia, Urea & Butyl Acetate** producer in South East Asia**
- **3rd largest Ethoxylates, MEG & LDPE** producer in South East Asia**

** by capacity

Operates world-class production sites



PETRONAS



Olefins & Derivatives

4.9 mil mtpa

- 1 Kertih IPC
- 2 Gebeng IPC

- Ethylene
- Polyethylene⁽¹⁾
- Benzene
- Paraxylene
- Ammonia, Carbon Monoxide & Oxogas⁽²⁾
- Ethylene Glycols
- Butanol, Ethanolamines, Glycol Ethers, Butyl Acetate, and other performance chemicals
- Acetic Acid⁽³⁾
- MTBE
- Propylene
- Acrylics, Oxo-alcohols, Butanediol⁽³⁾
- Aroma, 2-EHAcid, HR-PIB⁽³⁾

7 Pengerang

- Polyethylene
- Polypropylene
- Ethylene Glycols
- Isononanol

3.3 mil mtpa

Fertilisers & Methanol

7.8 mil mtpa

3 Gurun

- Urea
- Ammonia
- Methanol

4 Bintulu

- Ammonia
- Urea

5 Labuan

- Methanol

6 Sipitang

- Ammonia
- Urea

xx mil mtpa

New capacities

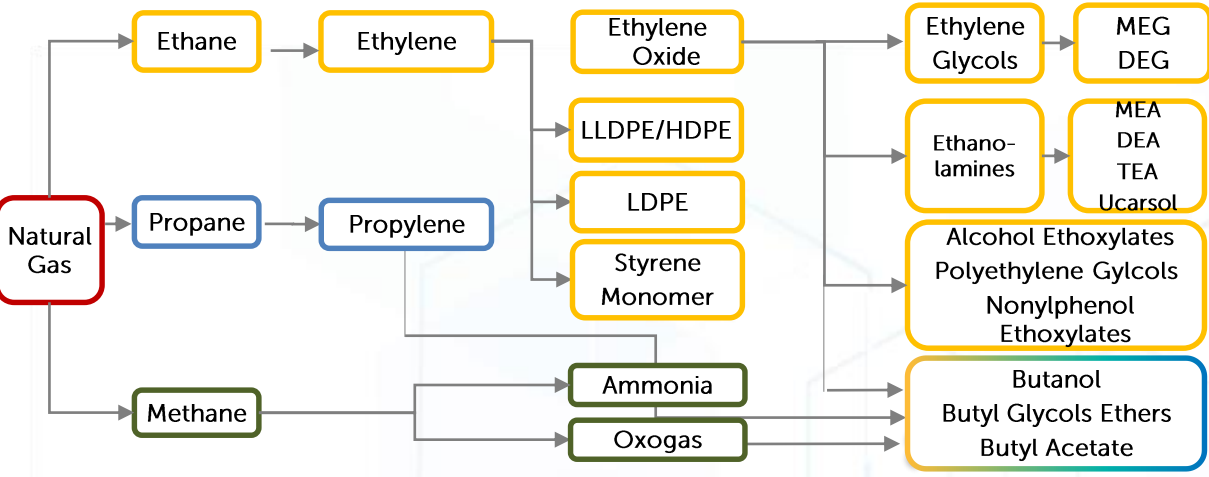
- Total **12.7 mil mtpa** of existing production capacity
- Total of **17 plants** across the Group:
 - Wholly-owned: **8 plants**
 - Partly-owned: **5 plants**
 - Associates: **4 plants**
- Two **integrated petrochemical complexes** in **Kertih**, Terengganu and **Gebeng**, Pahang
- Four **manufacturing complexes** in
 - Gurun**, Kedah
 - Bintulu**, Sarawak
 - Federal Territory of **Labuan**
 - Sipitang**, Sabah ^{new}
- New integrated petrochemical complex** in **Pengerang**, Johor by 2019

(1) Low Density Polyethylene (LDPE), Linear Low Density Polyethylene (LLDPE), High Density Polyethylene (HDPE)
 (2) Products from PC Ammonia, reported under F&M segment
 (3) Products from associates (addition to PCG capacity is based on PCG equity)

Fully integrated production facilities with significant synergies across the production chain



PETRONAS



Kertih IPC : Increased Margin Capture Down the Value Chain

■ = Basic feedstock ■ = Ethane Chain ■ = Propane Chain ■ = Methane Chain ■ = Butane Chain



Operational flexibility

to **modify product mix**, minimise molecule loss, and **optimise profits** across the entire value chain

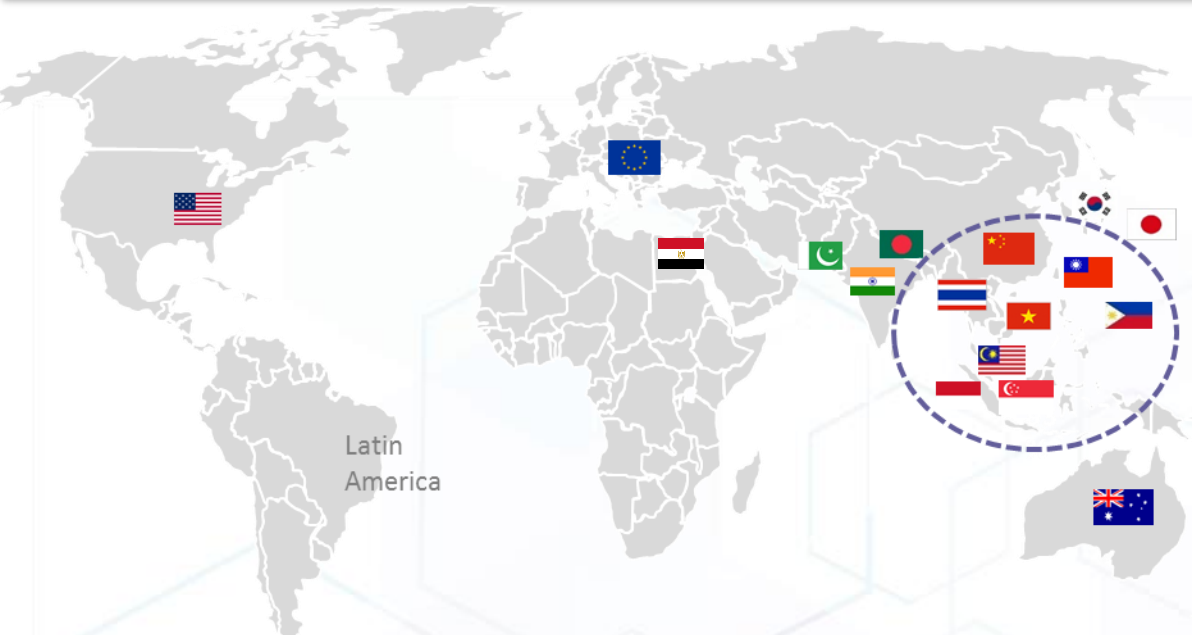
Integrated support and ancillary services

leading to substantial **operational and logistic efficiencies**

Established market leader in Asia Pacific



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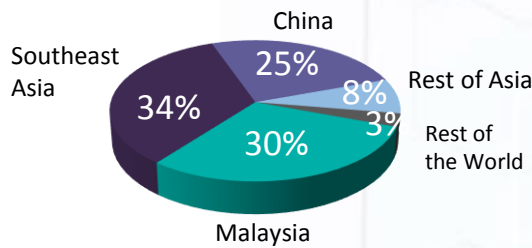


- Physically present in **Malaysia, Thailand, China, Indonesia, Vietnam, the Philippines** and **India**

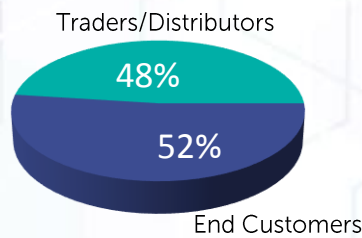
- **Higher netback market** particularly in **Southeast Asia and China**

- Gearing towards **value-driven customer solutions**

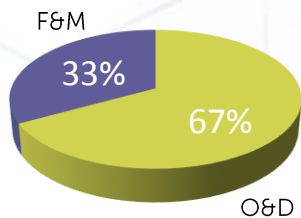
Revenue by Region



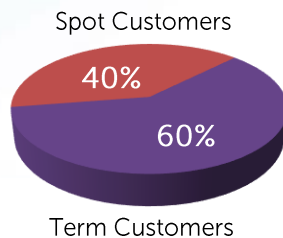
Revenue by Channel



Revenue by Segment



Revenue by Contract



*All data as at 30 Jun 2017

Strong and competitive to stay at the forefront of the industry



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Fully integrated facilities and infrastructure



Secure and competitive feedstock supply



Proximity to key growth markets



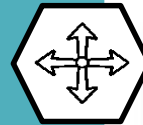
Large scale and diversified product portfolio



Capacity growth with world scale plants



Portfolio expansion with leading edge technology



Greater market leadership



**EXCELLENCE.
DYNAMIC GROWTH**

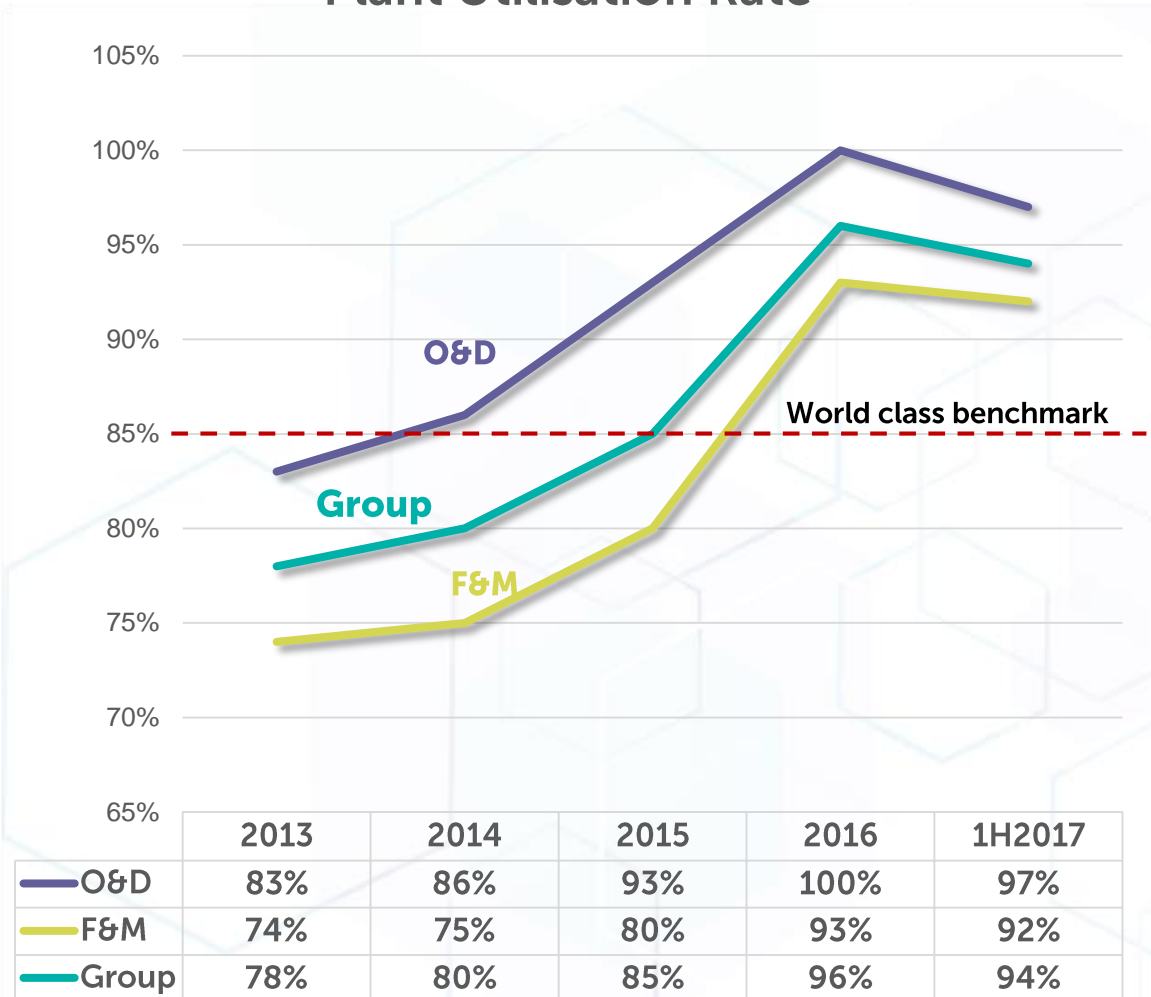


Performance Highlights



Sustained world class operational performance

Plant Utilisation Rate

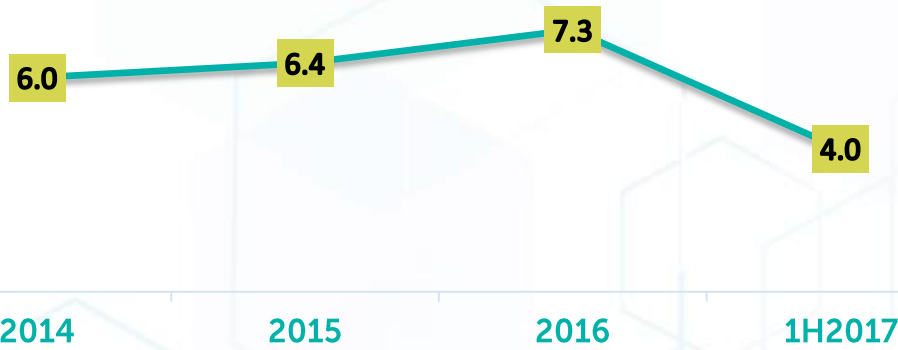


- **Highest annual Group utilisation of 96%** since listing
- **Improved feedstock supply** through close relationship with supplier
- **Improved plant reliability** resulting from effective asset management



Maximised sales in higher netback markets

Group Sales Volume
(Mil MT)

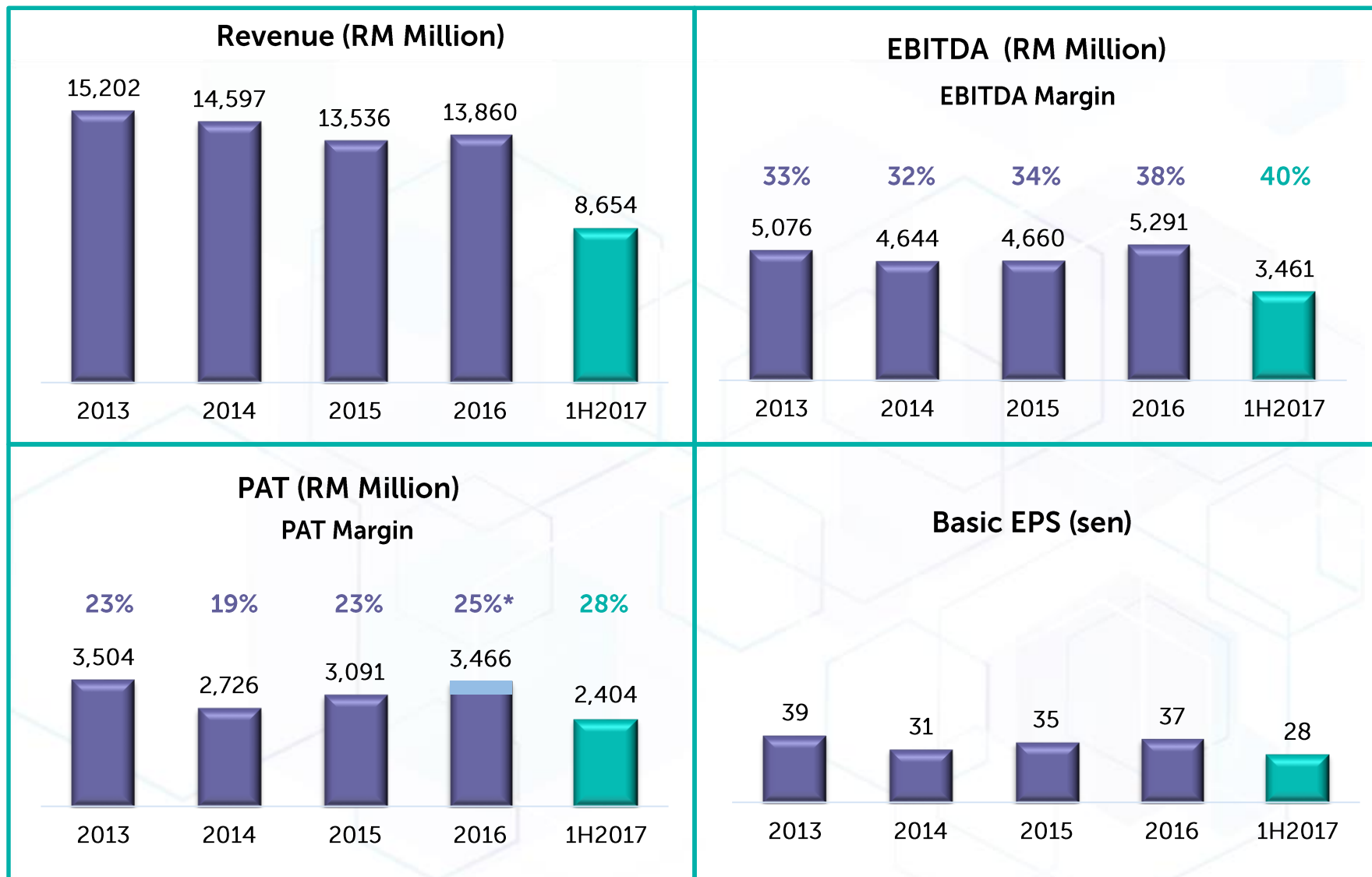


- Higher sales volume in line with higher plant utilisation
- Optimisation of cost-to-serve through logistics and inventory management
- Efficient delivery planning and channel management helped in strategic volume shift to higher value market





Best results despite challenging market conditions

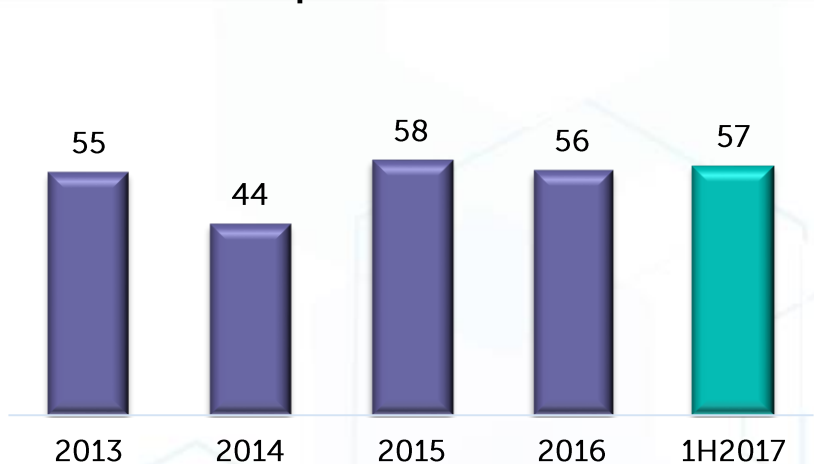


*Note: 2016 PAT = RM3,466 million excluding elastomers project write-off amounting to RM244 million. Post write-off, PAT = RM3,222 million and PAT Margin = 23%.

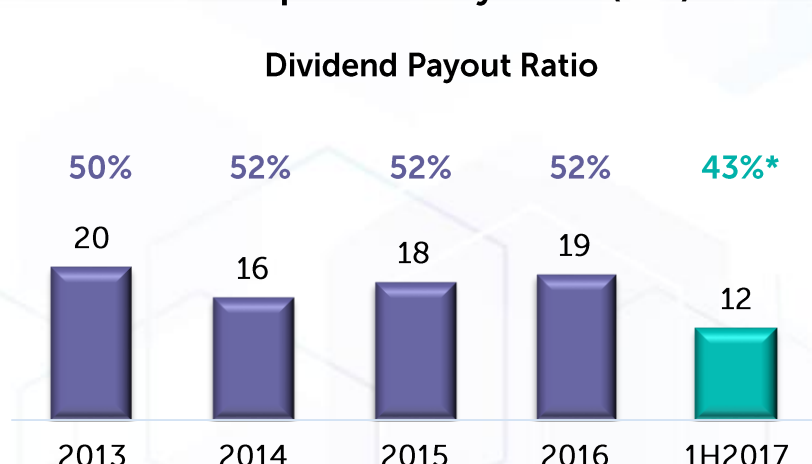


Shareholders' funds grew in line with profits

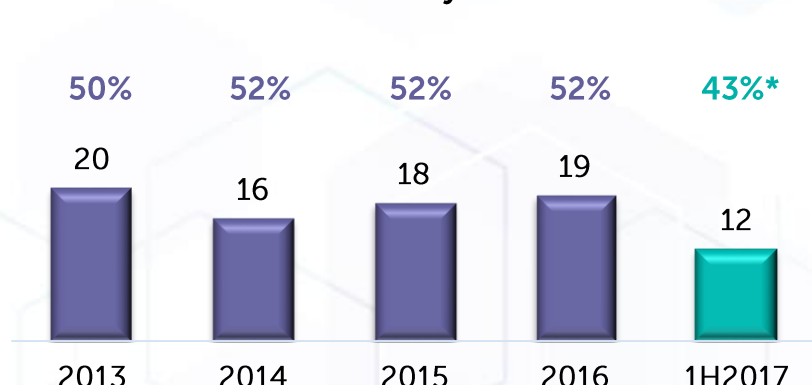
Market Capitalisation (RM Million)



Dividend per ordinary share (sen)

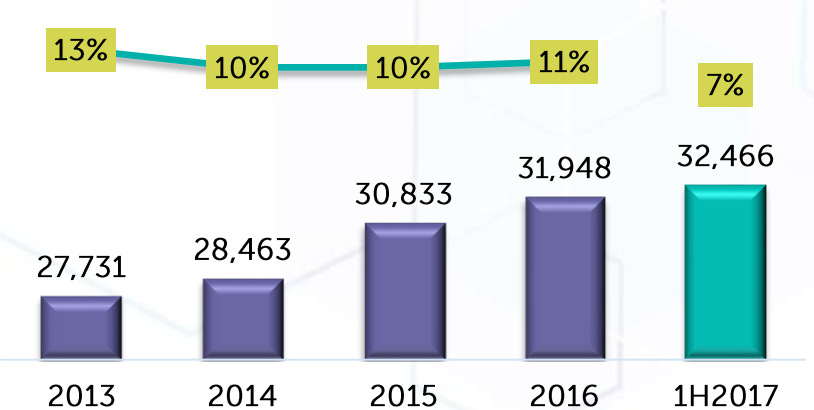


Dividend Payout Ratio



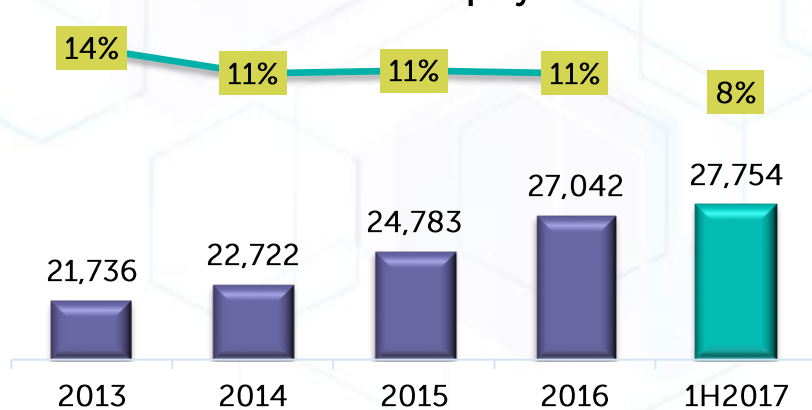
Total Assets (RM Million)

Return on Assets



Total Equity (RM Million)

Return on Equity

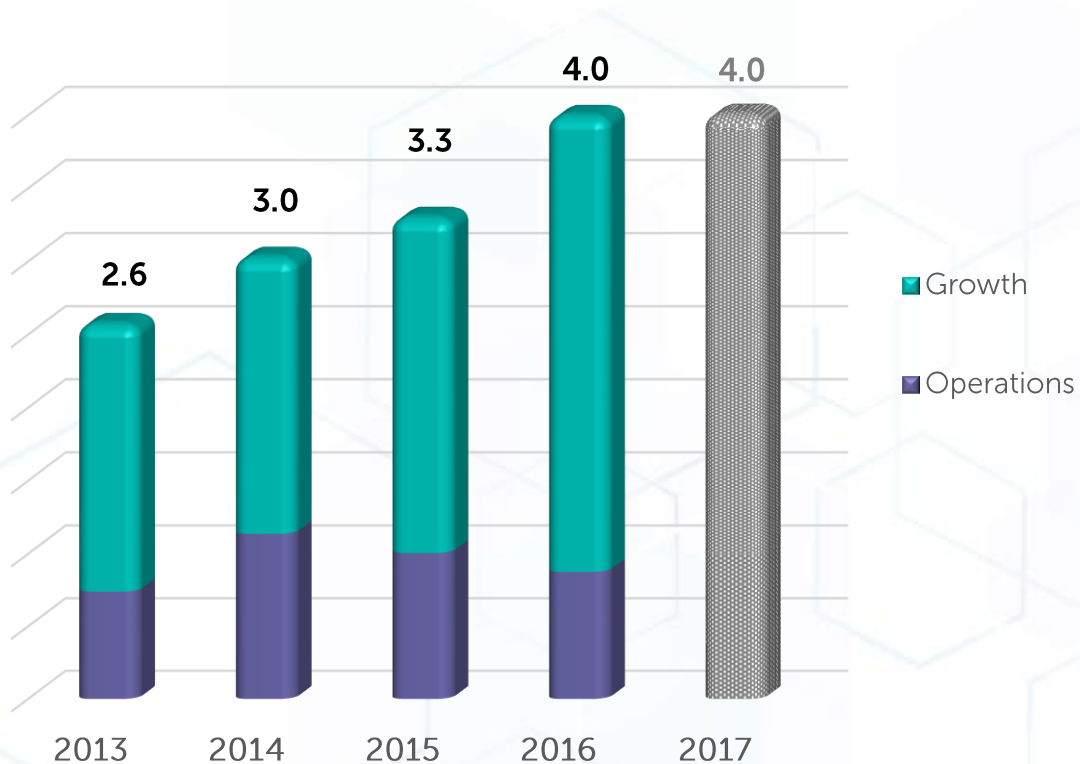


*Dividend policy is 50% of Profit After Tax and Non Controlling Interest (PATANCI)



Focused on existing assets and future growth

Capital Expenditure (RM Billion)



- **Growth CAPEX in 2017**
mainly for **petrochemical projects** at **Pengerang Integrated Complex**
- **Operations CAPEX**
consists of **reliability and integrity projects, turnaround activities,** value improvements and other operational requirements

EXCELLENCE. DYNAMIC GROWTH



Growth



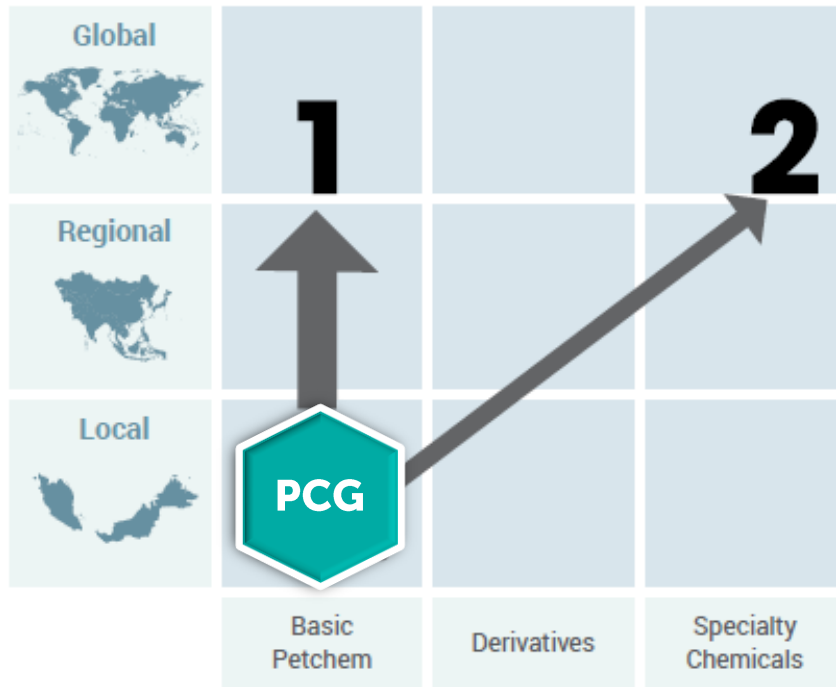
Striving to strengthen basic petrochemicals and selectively diversify into specialty chemicals



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Corporate Vision

The Preferred Chemical Company Providing Innovative Customer Solutions



1 Strengthen basic petrochemicals

- Achieve sustainable world class plant performance
- Competitive marketing capability with regional presence

2 Selectively diversifying into derivatives, specialty chemicals and solutions

- Deliver innovative customer solutions to strengthen market position and protect value
- Diversification of petrochemicals into higher value adding products

Collaboration with BASF will diversify our portfolio into niche specialty chemicals



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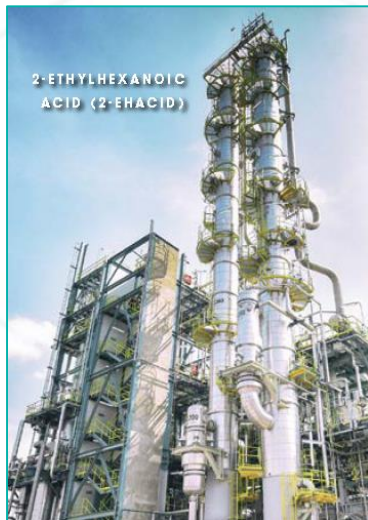


Location

- Gebeng, Pahang

Product

- 2-Ethylhexanoic Acid (**2-EHAcid**)
- Citral, citronellol and L-menthol
- Highly Reactive Polyisobutene (**HR-PIB**)



Position

- The **1st plant** in Southeast Asia to produce intermediate for flavours and fragrances
- The **1st and only** 2-EHAcid, HR-PIB plant in Southeast Asia

PIC petrochemical projects will further expand our capacity and product slate



PETRONAS



Location

- Pengerang, Johor

Product

- **Glycols:** Feedstock for manufacturing polyester fiber
- **Polymers:** Feedstock for manufacturing plastic products
- **Isononanol (INA):** Feedstock for plasticizer

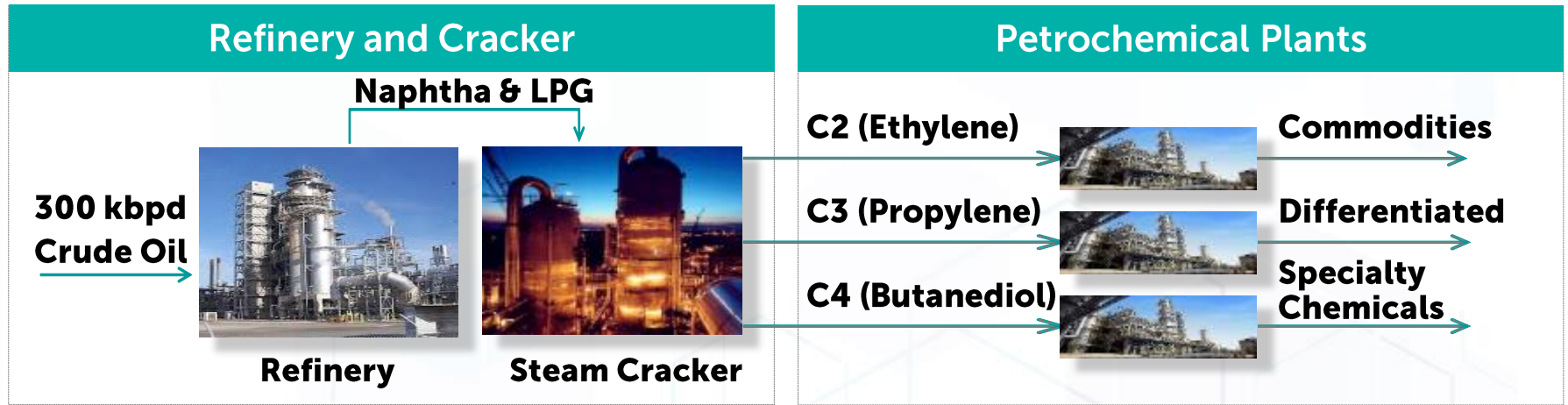
Position

- **Largest** glycols and polypropylene producer in Southeast Asia
- **2nd Largest** HDPE and INA producer in Southeast Asia

PIC is fully integrated with facilities and infrastructure ensuring secure feedstock supply



PETRONAS



Supported by Ancillary Facilities



PCP

Pengerang Co-generation Plant



PDT2

Pengerang Deepwater Terminal



UF

Utilities & Facilities



PAMER

Raw Water Supply Project



RGT2

Regasification Terminal



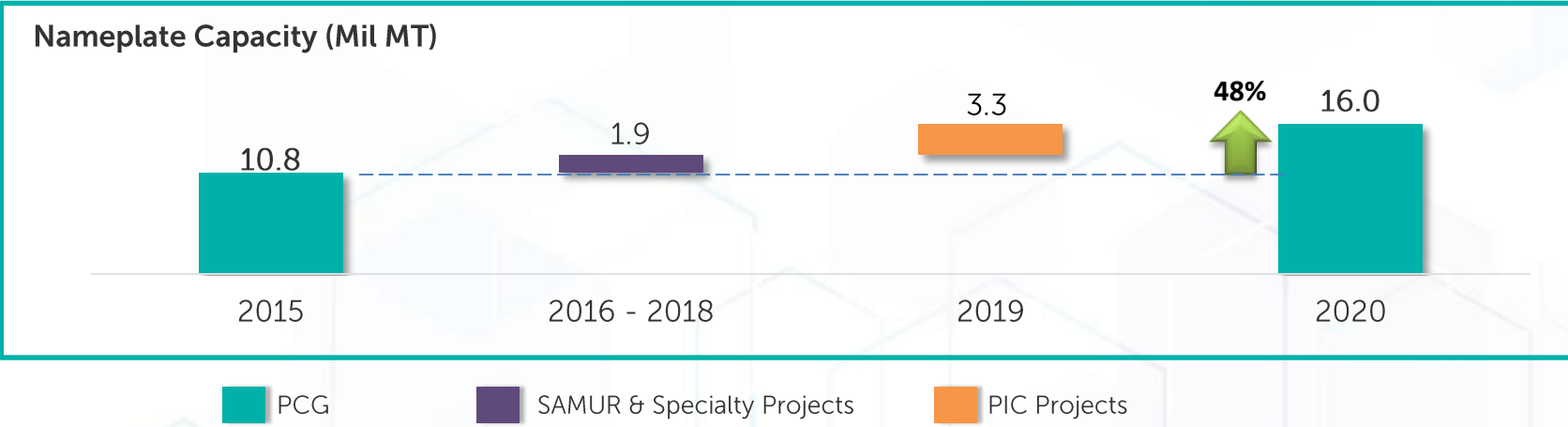
ASU

Air Separation Unit

These projects will contribute significantly to capacity growth and market leadership by 2020



Upon completion of PIC:



Market Positioning



Supporting the vision for capacity and portfolio expansion




Application

Application




Glycols

Polyester Fibre 	Antifreeze 	Latex Paints 	Brake Fluid 
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Citral, citronello, L-menthol

Flavours 	Fragrances 	Personal care products 
--	--	--

Polymer

Artificial leather and sheets 	Consumer products 	Packaging 
---	---	---

2-EHAcid

Stabiliser for PVC 	Paint dryers 	Synthetic lubricants 	Medicals / Cosmetics 
--	--	--	--

Isonanol (INA)

Plasticiser for PVC



HR-PIB

Fuel and lubricant additives



World population growth and key industry trends signify continuous demand for chemical products



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Macro driver

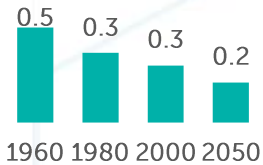
by 2030



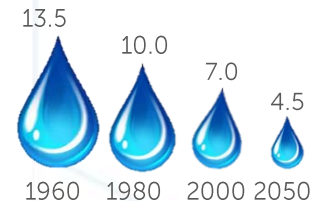
Increase in world population
+1.1 bil → 8.5 bil



Rising global GDP per capita
+US\$11k → US\$21k



Less arable land



Less freshwater

Industry driver

by 2030



Higher global demand for food and beverages



Higher middle income class population
+2.4 bil → 4.9 bil



Greater demand for business and personal mobility



PCG Strategic Positioning



Urea: Efficient food production



Polymers: Smart packaging, Lightweight material for automotive

MTBE: Fuel additive



Methanol, Ethanolamines, Ethoxylates: Multifunctional personal care products and cosmetics



Glycols, Paraxylene: Polyester for quality clothes

**EXCELLENCE.
DYNAMIC GROWTH**



Outlook

Olefins & Derivatives: Firm downstream demand amidst supply shortages

Ethylene



- ◆ Less supply in Northeast Asia and Southeast Asia on turnaround activities
- ◆ Stable downstream demand

Polymers



- ◆ Buyers purchase on a hand-to-mouth basis
- ◆ Reduced availability of Middle East cargoes

MEG



- ◆ Strong seasonal demand from polyester industry
- ◆ Tight supply in Northeast Asia and Southeast Asia

Aromatics



- ◆ High seasonal demand for polyester
- ◆ Oversupply in Asia with new PX capacity on-stream

Fertilisers & Methanol:

Demand reduces as seasonal application ends

Urea ↓



- ◆ Decrease in demand as Southeast Asia planting season ends
- ◆ Buyers waiting on the sidelines in anticipation of weakening price

Ammonia ↓



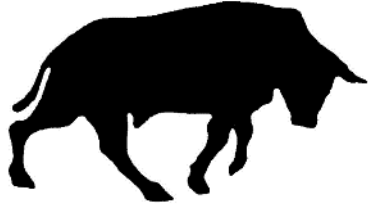
- ◆ Lackluster demand as spring application ends
- ◆ Continuous oversupply

Methanol ↔



- ◆ Stable demand in traditional derivative markets
- ◆ Cheaper coal in China

PCG remains cautious on uncertainties



Oil price recovery

Improving global economy

Market uncertainty

Increasing protectionism

Supply overhang



PCG will continue to focus on key success areas to remain resilient and keep growing



PETRONAS

EXCELLENCE

Operational Excellence

- Sustain world-class operational performance and strengthen HSE program

Commercial and Innovation Excellence

- Deliver value through commercial excellence and tailor-made solutions

DYNAMIC GROWTH

Growth Projects

- Effective project delivery
- Route-to-market execution and operation readiness
- Continue exploring downstream derivatives and specialties

**EXCELLENCE.
DYNAMIC GROWTH**



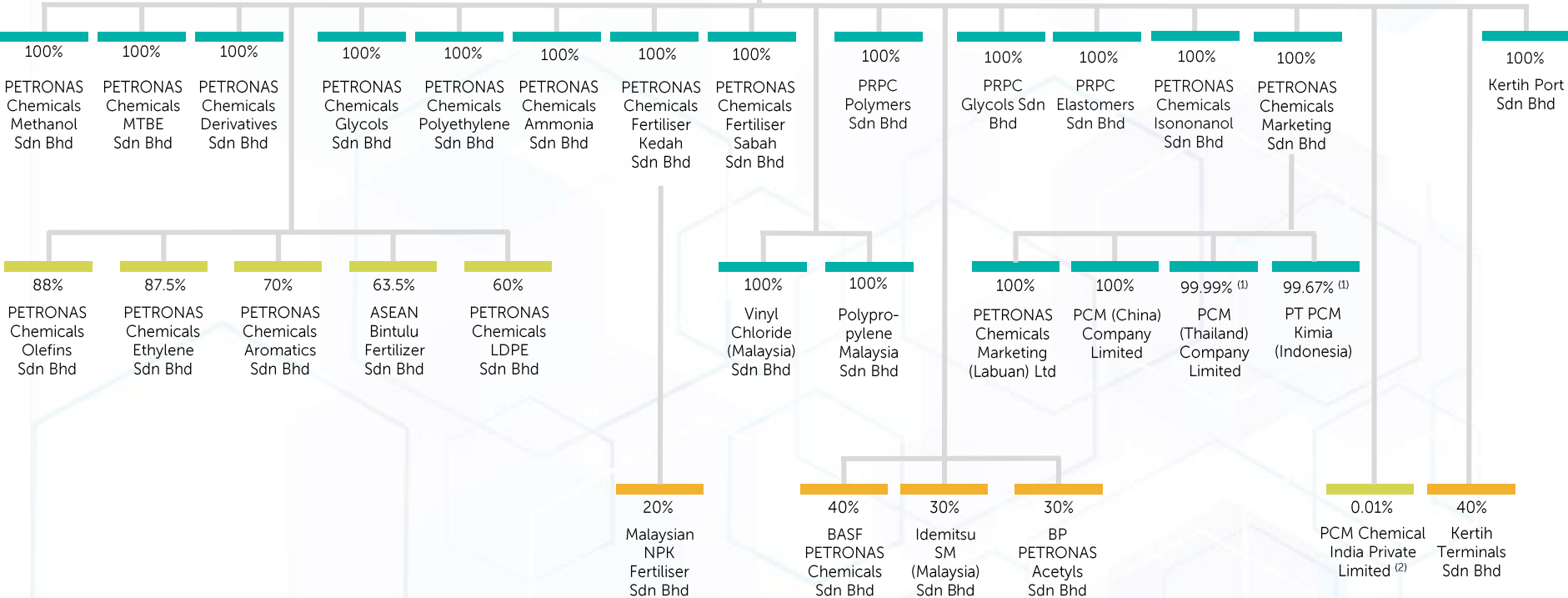
Appendices

PCG Corporate Structure



PETRONAS Chemicals Group Berhad

64.35%



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

(1) Wholly-owned subsidiary as remaining shareholding is held through other subsidiaries within PCG
 (2) Subsidiary pursuant to Malaysian Financial Reporting Standard 10

Significant experience in the industry with proven track records



Datuk Sazali Hamzah

**Managing Director /
Chief Executive Officer**

- Responsible for the overall operational, financial, and sustainable management of PCG and its subsidiaries
- Chartered Fellow of the Institution of Chemical Engineers (IChemE), UK
- Previously MD/CEO of PETRONAS Penapisan (Melaka) Sdn. Bhd.



Rashidah Alias

**Chief
Financial Officer**

- Responsible for the management of all financial and fiscal aspects of PCG
- Fellow of the Institute of Chartered Accountants Australia and New Zealand
- Member of the Malaysian Institute of Accountants
- Previously Senior General Manager of Group Treasury in PETRONAS



Mahadzir Rani

**Head of
Manufacturing**

- Responsible for PCG's overall operational excellence inclusive of plant management and centralised services
- Previously CEO of PETRONAS Chemicals Methanol Sdn. Bhd.
- Prior appointments at PETRONAS Chemicals Fertiliser Kedah, PETRONAS Chemicals MTBE and PETRONAS Penapisan Terengganu Sdn. Bhd.



Akbar Md Thayoob

**Head of
Commercial**

- Responsible for PCG's overall commercial excellence
- CEO of PETRONAS Chemicals Marketing Sdn. Bhd.
- CEO of PETRONAS Chemicals Marketing (Labuan) Ltd.
- Previously Head of Retail Business, PETRONAS Dagangan Berhad



Abdul Aziz Othman

**Head of Strategic
Planning and Ventures**

- Responsible for PCG's overall strategic planning, business development and ventures development
- Involved in various operations, strategy and business planning within PETRONAS
- Previously CEO of Vinyl Chloride (Malaysia) Sdn. Bhd.

Olefins & Derivatives

Plant	Ownership	Location	Product	Nameplate Capacity
PETRONAS Chemicals Ethylene Sdn Bhd	87.5%	Kertih	Ethylene	400,000 mtpa
PETRONAS Chemicals Polyethylene Sdn Bhd	100%	Kertih	HDPE/LLDPE, pipe-grade PE	300,000 mtpa
PETRONAS Chemicals Olefins Sdn Bhd	88%	Kertih	Ethylene Propylene	600,000 mtpa 84,720 mtpa
PETRONAS Chemicals Glycols Sdn Bhd	100%	Kertih	Ethylene oxide Ethylene glycols	385,000 mtpa 380,000 mtpa
PETRONAS Chemicals Derivatives Sdn Bhd	100%	Kertih	Ethoxylates Ethanamines Glycol ethers Butanol Butyl acetate Nonylphenol ethoxylates Polyethylene glycol Polyalkaline glycol	30,000 mtpa 75,000 mtpa 60,000 mtpa 140,000 mtpa 50,000 mtpa 30,000 mtpa 15,000 mtpa 10,000 mtpa
PETRONAS Chemicals LDPE Sdn Bhd	60%	Kertih	LDPE	255,000 mtpa
PETRONAS Chemicals Aromatics Sdn Bhd	70%	Kertih	Paraxylene Benzene	500,000 mtpa 187,700 mtpa
PETRONAS Chemicals MTBE Sdn Bhd	100%	Gebeng	MTBE Propylene n-butane	300,000 mtpa 380,000 mtpa 135,000 mtpa

Olefins & Derivatives

Plant	Ownership	Location	Product	Nameplate Capacity
BASF PETRONAS Chemicals Sdn Bhd ⁽¹⁾	40%	Gebeng	Acrylics Oxo-Alcohols/Syngas Butanediol	370,000 mtpa 440,000 mtpa 100,000 mtpa
BP PETRONAS Acetyls Sdn Bhd ⁽¹⁾	30%	Kertih	Acetic acid	500,000 mtpa
Idemitsu Styrene Monomer Malaysia Sdn Bhd ⁽¹⁾	30%	Pasir Gudang	Styrene monomer	240,000 mtpa
BASF PETRONAS Chemicals Projects <i>(under construction / commissioning phase)</i>	40%	Gebeng	Citral, citronellol, L-menthol 2-EHAcid HR-PIB	110,000 mtpa 30,000 mtpa 50,000 mtpa
PRPC Polymers Sdn Bhd <i>(under construction)</i>	100%	Pengerang	Polypropylene LLDPE/mLLDPE Flexi-HDPE	900,000 mtpa 350,000 mtpa 400,000 mtpa
PRPC Glycols Sdn Bhd <i>(under construction)</i>	100%	Pengerang	Ethylene oxide MEG, DEG, TEG	581,000 mtpa 808,000 mtpa
PETRONAS Chemicals Isononanol Sdn Bhd <i>(under construction)</i>	100%	Pengerang	Isononanol (INA)	250,000 mtpa

⁽¹⁾ Associate company

Fertilisers & Methanol

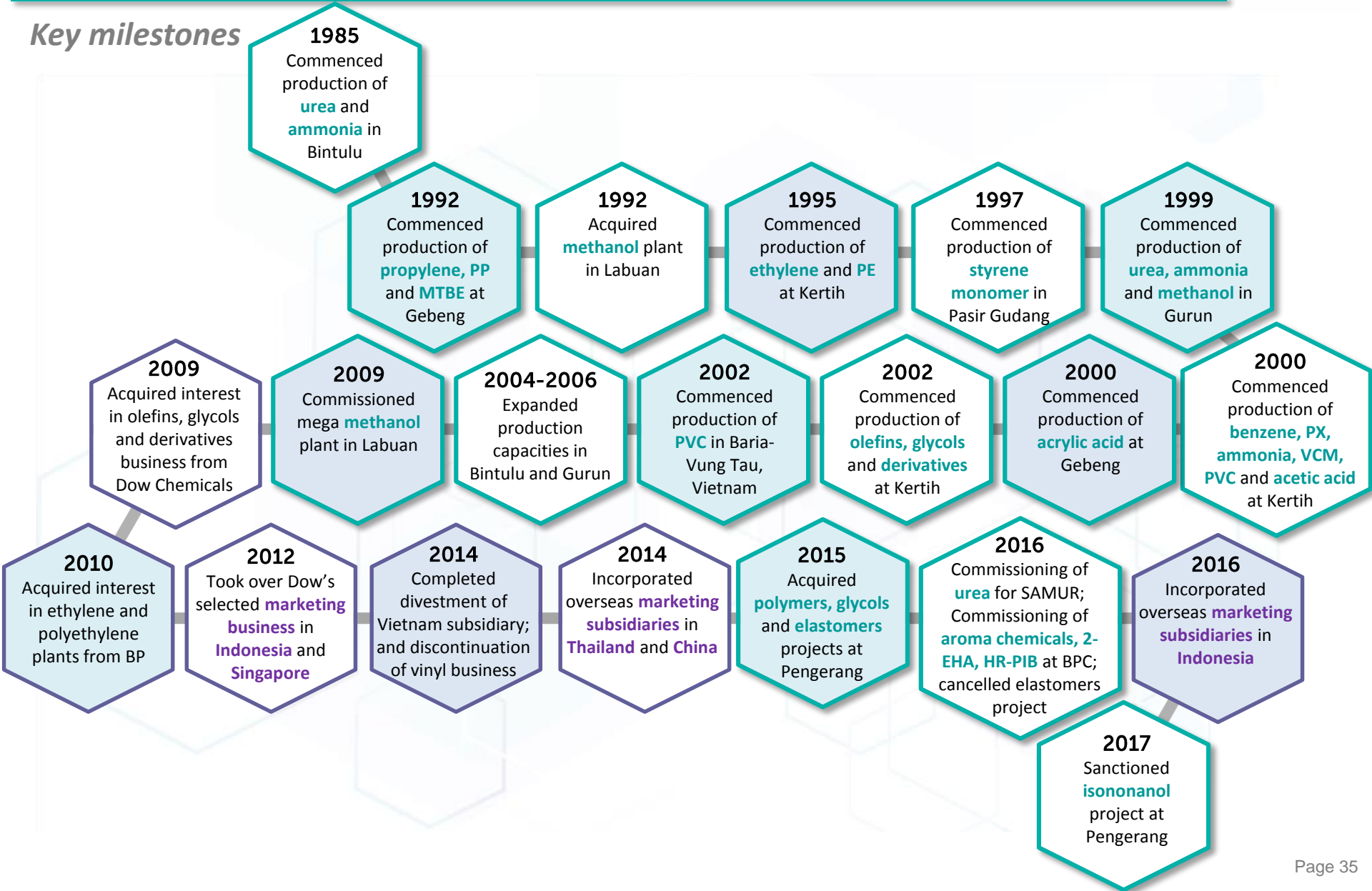
Plant	Ownership	Location	Product	Nameplate Capacity
ASEAN Bintulu Fertilizer Sdn Bhd	63.47%	Bintulu	Urea Ammonia	750,000 mtpa 450,000 mtpa
PETRONAS Chemicals Fertiliser Kedah Sdn Bhd	100%	Gurun	Urea Ammonia Methanol	683,000 mtpa 400,000 mtpa 66,700 mtpa
PETRONAS Chemicals Sabah Sdn Bhd	100%	Sipitang	Urea Ammonia	1,200,000 mtpa 740,000 mtpa
PETRONAS Chemicals Ammonia Sdn Bhd	100%	Kertih	Ammonia Oxogas Carbon Monoxide	450,000 mtpa 435,700 mtpa 246,700 mtpa
PETRONAS Chemicals Methanol Sdn Bhd	100%	Labuan	Methanol	666,000 mtpa 1,665,000 mtpa
Malaysian NPK Fertilizer Sdn Bhd ⁽¹⁾ <i>(associate company of PETRONAS Chemicals Fertiliser Kedah)</i>	20%	Gurun	NPK	310,000 mtpa

⁽¹⁾ Associate company



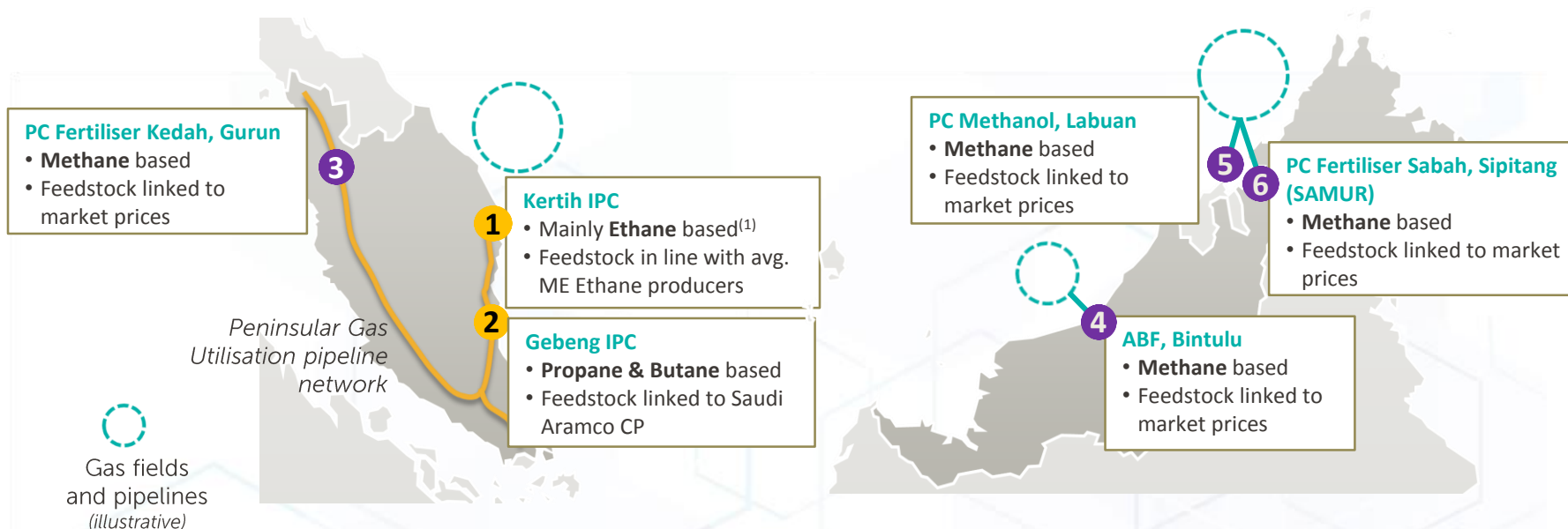
Over three decades of experience in the industry

Key milestones





Advantageous arrangements for gas feedstock



	Ethane (as feedstock)	Methane (as feedstock)	Methane (as fuel gas)
Use	<ul style="list-style-type: none"> • By-product of gas separation and processing • Used in production of olefins and its derivatives • PCG is only user and customer 	Raw material in production of methane based products	Process (furnace), Utilities and power generation
Pricing volatility	<ul style="list-style-type: none"> • Broadly fixed prices in long term, negotiated contracts • Relatively low cost base 	<ul style="list-style-type: none"> • Linked to end-product market prices and moves accordingly-margin protection 	<ul style="list-style-type: none"> • Regulated prices • Subject to removal of subsidy and moving towards market prices

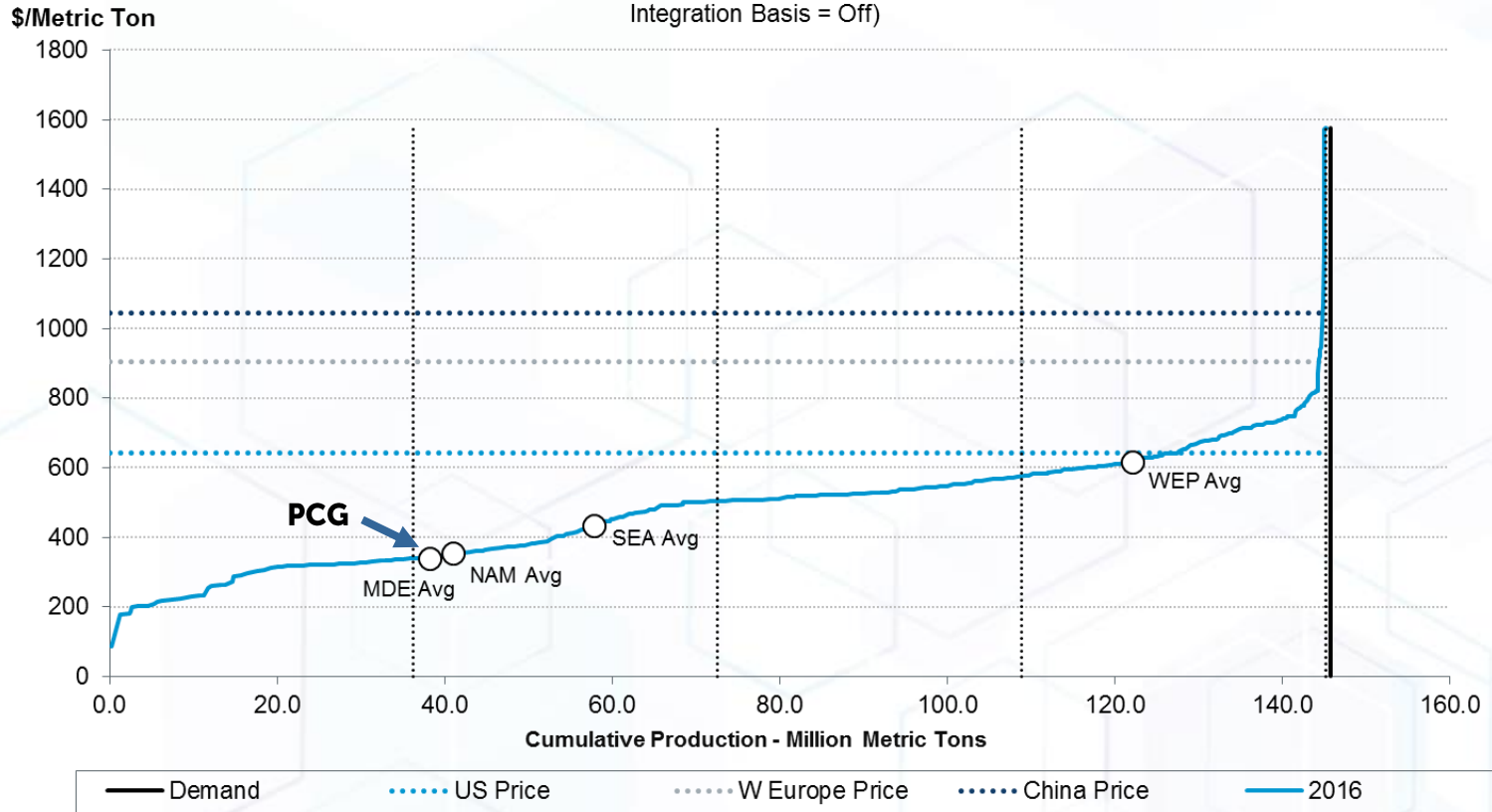
⁽¹⁾ Other feedstock in Kertih IPC: Butane, Methane and Heavy Naptha

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



Proximity to key growth markets

Shipping Days*	Malaysia (Kertih)	Middle East (Jubail, Saudi Arabia)	USA** (Houston, Louisiana)
China (Xiamen)	6 days	19 days	37 days
Japan (avg. Shimizu, Sakai, Kobe, Mizushima)	9 days	23 days	34 days
Taiwan (Kaohsiung)	6 days	19 days	37 days
Indonesia (avg. Surabaya, Semarang)	4 days	16 days	42 days
Thailand (Bangkok)	3 days	16 days	43 days
Shipping Considerations	<ul style="list-style-type: none"> • Smaller ships and smaller loads economically viable • Less crowded routes • More frequent vessels 	<ul style="list-style-type: none"> • Only large ships to maintain economies of scale • Potential delay through crowded Straits of Malacca 	<ul style="list-style-type: none"> • Only large ships to maintain economies of scale

* Assuming 12 knots/hr average cruising speed

** via Panama Canal

Source: sea-distances.org

**EXCELLENCE.
DYNAMIC GROWTH**



Thank You

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