



# A LEADING INDONESIAN ENERGY GROUP

Barito Pacific | Company Presentation

October 2019



**1** OVERVIEW OF BARITO PACIFIC

**2** KEY BUSINESS HIGHLIGHTS

**3** 3M-2019 RESULTS

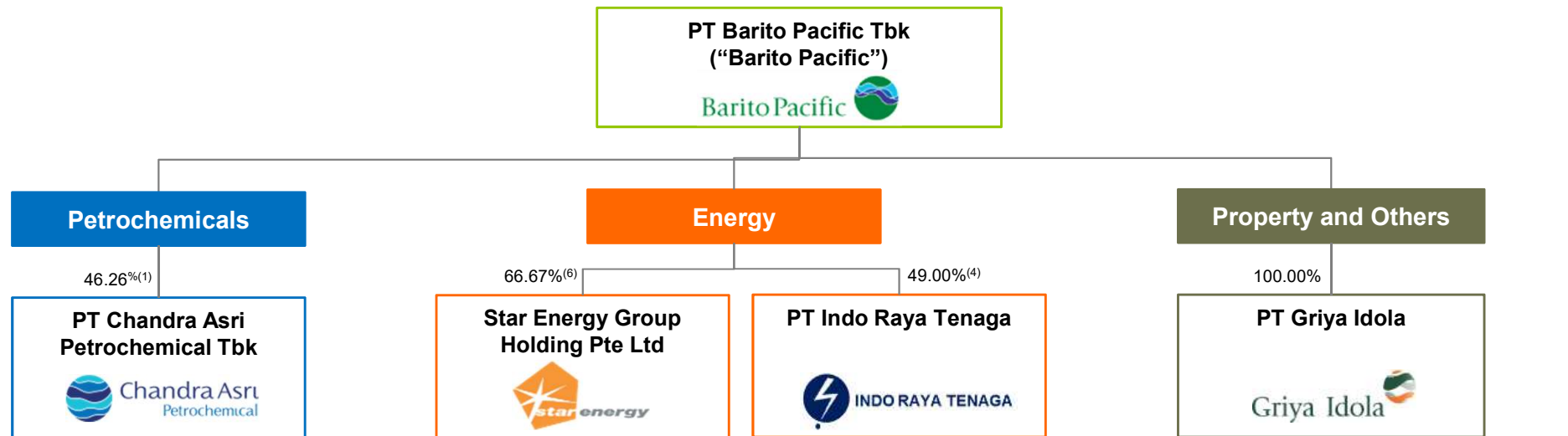
**4** GROWTH STRATEGY

APPENDIX

Section 1

# OVERVIEW OF BARITO PACIFIC

### Group Organization Chart



- Indonesia’s largest and only integrated petrochemical company. Operates a world scale naptha cracker.
- Domestic market share (including imports) of approximately 50%, and 24% in olefin, polyethye and polyolefins, respectively<sup>(5)</sup>.
- Market capitalization of c.US\$11.1bn as at 31 August 2019
- Ratings (M/S/F): Ba3/BB-/BB-

- Largest geothermal operator in Indonesia and 3<sup>rd</sup> largest in the world.
- 875 MW installed capacity across three operating assets.
- Long-term offtake contract agreement with Pertamina and PLN with average contract period of 24 years (from 2017)
- Ratings (M/S/F): Ba3/--/BB-

- 2,000 MW ultra supercritical coal-fired power project (scheduled COD in 2023 and 2024)
- Consortium with PLN

- Wisma Barito Pacific office complex in Jakarta
- Operator of Integrated industrial park: 60 ha
- Wisma Barito Pacific 2 (expected completion: 2Q 2020)
- Hotel Mambruk Anyer
- Industrial forest estate: 149,000 ha<sup>(3)</sup>
- Particle board production plant: 60,000 m<sup>3</sup> pa

- Listed on the IDX since 1993, Barito Pacific has a market capitalization of c.US\$5.7bn as at 31 August 2019
- Barito Pacific’s largest shareholder is Prajogo Pangestu with a 71.13% stake<sup>(2)</sup>

(1) As at 31 August 2019. Direct 41.51% and indirect 4.75%

(2) As at 31 August 2019

(3) Held under subsidiaries separate from Griya Idola, PT Mangole Timber Producers, PT Kirana Cakrawala (“KC”), PT Kalpika Wanatama (“KW”), PT Tunggal Agathis Indah Wood Industries. KC and KW are 60% owned by Barito Pacific

(4) Held indirectly though PT Barito Wahana Lestari

(5) For the year ended 31 December 2018 according to Nexant; polyolefin market share based on combined figures of polyethylene and polypropylene

(6) Effective acquisition in June 2018

Section 1.A

# PETROCHEMICALS

# Chandra Asri Petrochemical at a Glance

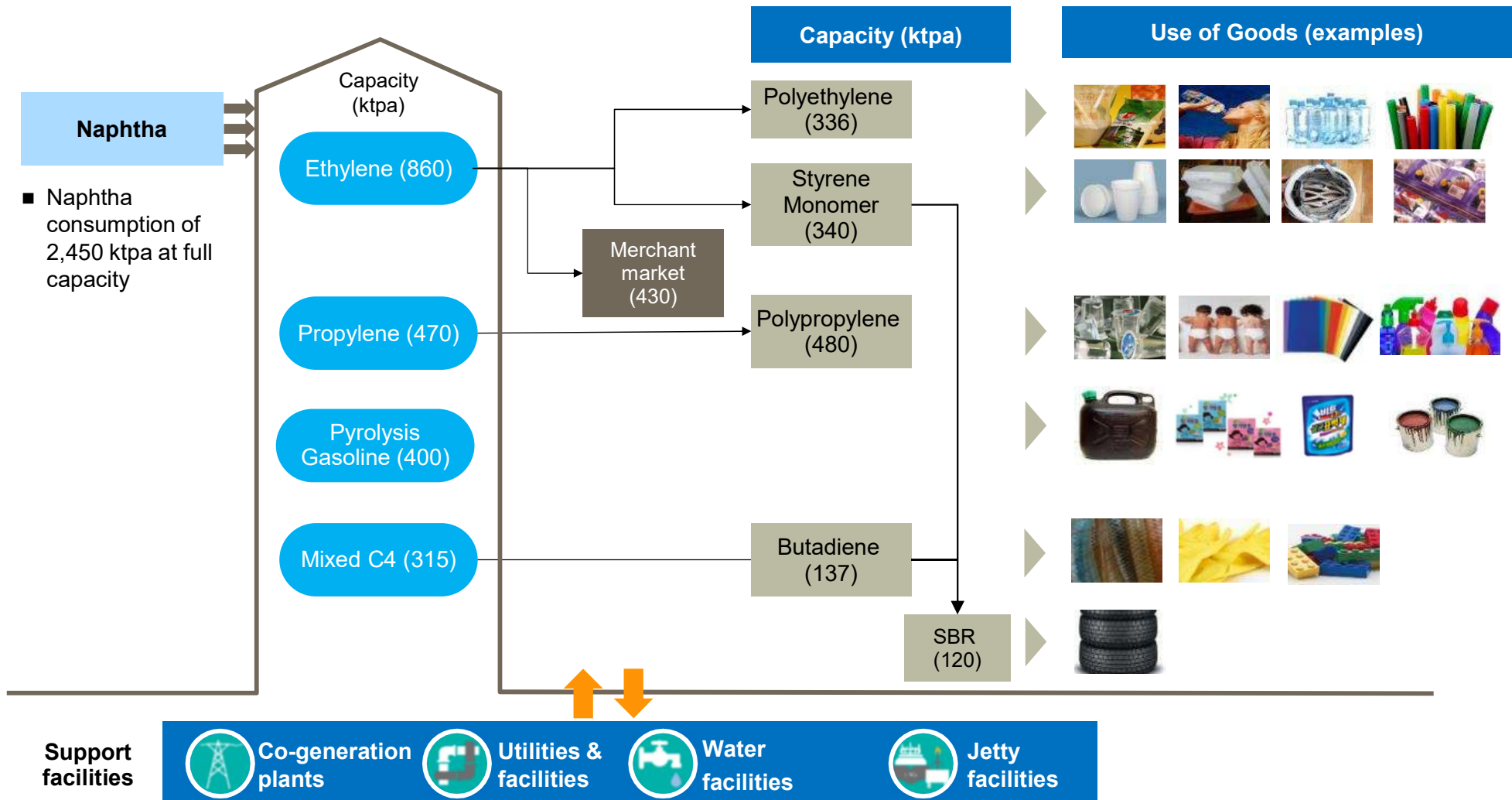
Largest integrated petrochemical producer in Indonesia

- ✓ **Largest integrated petrochemical producer in Indonesia** and operates the country's only naphtha cracker, styrene monomer and butadiene plants. 3.4 mtpa of existing production capacity.
- ✓ **Integration** from upstream cracker to downstream polyolefin products
- ✓ **Market leader** in highly attractive Indonesia and SE Asia petrochemical market
  - Domestic market share (including imports) of approximately 50%, 20% and 27% in olefin, polyethylene and polypropylene, respectively
- ✓ **Strategically located** near key customers with a captive distribution network (via CAP's pipelines)
  - Significant cost efficiencies for CAP and its key customers
- ✓ **Long-standing relationships** with diversified customer base
  - No single customer accounts for more than 8% of consolidated revenue
  - Around 75% of products by revenue were sold to domestic market.
- ✓ **Low production cost base and operating efficiencies**
  - Benefits from scale of feedstock sourcing and stable supplier relationships.
  - Naptha cracker utilization rate >90% in avg.
- ✓ Transformed in 2016 following the **4Q 2015 naphtha cracker expansion**, resulting in significant EBITDA growth, reinforced balance sheet and a more diversified product mix
- ✓ **Support** from Barito Pacific Group and Siam Cement Group ("**SCG**")
  - Barito Pacific's stake in CAP: 46.26%
  - SCG's stake in CAP: 30.57%



*CAP's main integrated manufacturing complex*

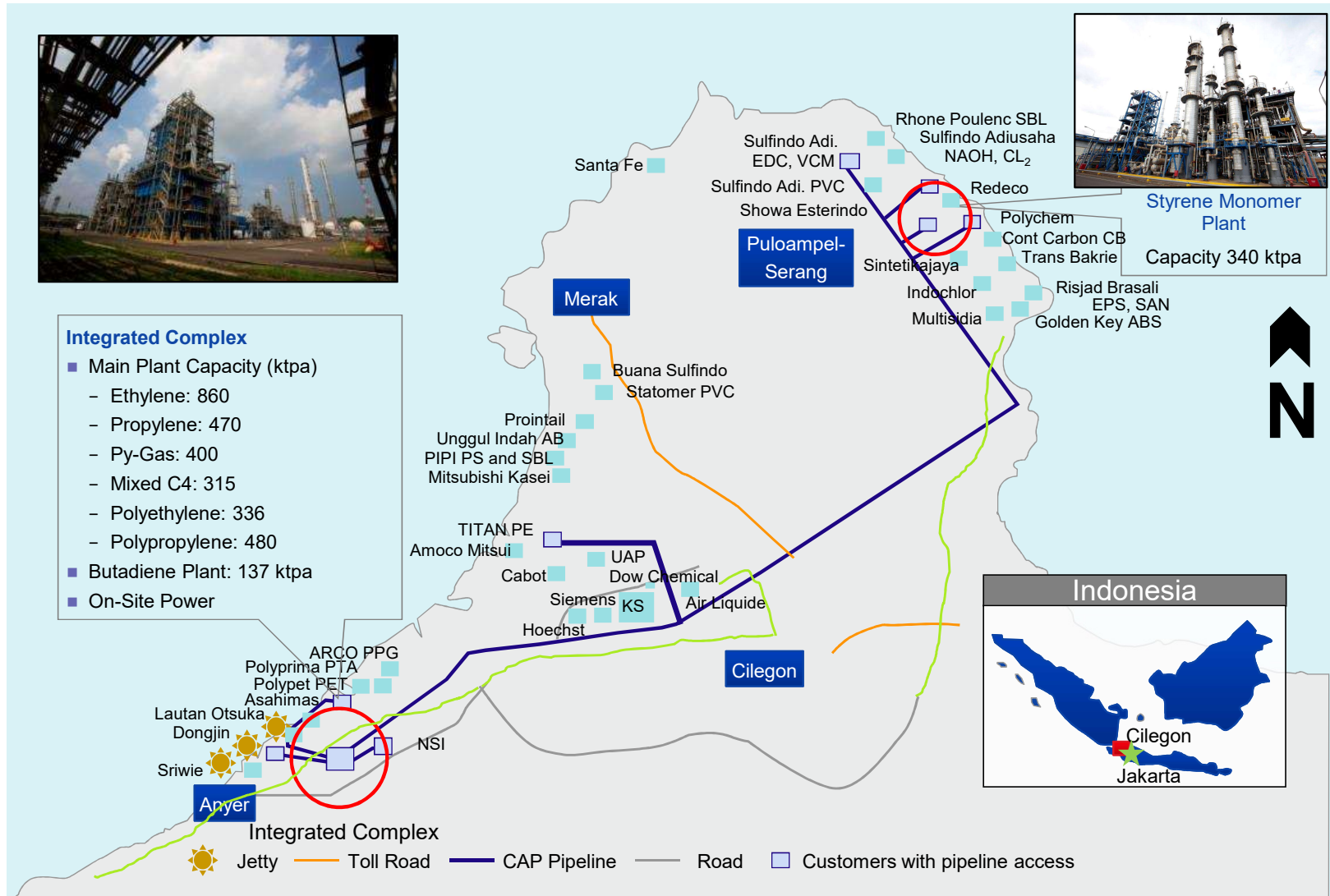
# Integrated Production of Diverse Products



**CAP's products encompass a wide range across the consumer products value-chain, and its leading position and strategic location enhances its competitiveness**

# Strategically Located to Supply Key Customers

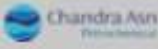





## CAP's Integrated Petrochemical Complexes



Location proximity and well established pipeline ensures excellent connectivity to key customers. This coupled with reliability of supply lead to premium pricing, with integration of facilities creating significant barriers to entry



# CAP is Indonesia's Largest Petrochemical Producer

Capacity ('000 tons per year)	 Chandra Asin Petrochemical	 LOTTE CHEMICAL	 PERTAMINA	Polytama	 ASC Group	 PT SRI SURABAYA	 TPPI	Others	Total
Ethylene	860								860
Propylene	470		608						1,078
LLDPE	200	200							400
HDPE	136	250							386
Polypropylene	480		45	240					765
Ethylene Dichloride					760	370			1,130
Vinyl Chloride Monomer					875	130			1,005
Polyvinyl Chloride					550	95		202	847
Ethylene Oxide								240	240
Ethylene Glycol								220	220
Acrylic Acid								140	140
Butanol								20	20
Ethylhexanol								140	140
Py-Gas	400								400
Crude C4	315								315
Butadiene	137*								137
Benzene			125				400		525
Para-Xylene			298				540		838
Styrene	340								340
Styrene Butadiene Rubber	120*							75	195
<b>Total</b>	<b>3,458</b>	<b>450</b>	<b>1,076</b>	<b>240</b>	<b>2,185</b>	<b>595</b>	<b>940</b>	<b>1,037</b>	<b>9,981</b>

Source: Nexant; and CAP

(1) Butadiene capacity was expanded from 100KTA to 137KTA in mid 2018.

(2) SRI, a joint venture of CAP and Michelin, started up in Q3 2018. Synthetic rubber includes styrene butadiene rubber and polybutadiene rubber

Section 1.B

# ENERGY

## Operating assets

### Wayang Windu



- Bandung Regency, West Java
- 227 MW total installed capacity
  - Unit 1 (Power): 110 MW
  - Unit 2 (Power): 117 MW
- SEGHPL effective ownership: 60.00%
- Tariff increase of US¢3.11/kWh effective April 2016

### Salak



- Sukabumi Regency and Bogor Regency, West Java
- 377 MW total installed capacity
  - Units 1 to 3 (Steam): 3 x 60 MW<sup>(1)</sup>
  - Units 4 to 6 (Power): 3 x 65.6 MW
- SEGHPL effective ownership: 51.95%
- Acquired from Chevron on 31 March 2017

### Darajat



- Garut Regency and Bandung Regency, West Java
- 271 MW total installed capacity
  - Unit 1 (Steam): 55 MW
  - Unit 2 (Power): 95 MW
  - Unit 3 (Power): 121 MW
- SEGHPL effective ownership: 51.95%
- Acquired from Chevron on 31 March 2017 and from PT DGI<sup>(2)</sup> on 27 September 2017

## Exploration projects

- Both PT Star Energy Geothermal South Sekincau and PT Star Energy Geothermal Indonesia have completed the preliminary survey (“PSP”) and have right to match the best tender offer for the license to develop the resource area

**The third largest geothermal IPP globally and the largest in Indonesia<sup>(3)</sup>**

(1) While contractual capacity is 55 MW, Star Energy generally provides steam flow up to 60 MW

(2) PT Darajat Geothermal Indonesia (“PT DGI”)

(3) Based on 2017 installed capacity, according to Frost & Sullivan



**As part of the Barito Pacific group, Star Energy will be ideally placed to enjoy better operating margins via cost synergies and a greater ability to seize expansion opportunities both domestically and internationally**

Section 1.C

# PROPERTY

# Property Business

## Wisma Barito Pacific

- Located in West Jakarta, 2 towers of office space with a total of 23 floors (tower A: 11 floors, tower B: 12 floors)
- Operation started in November 1990
- Land size: 8,674 sqm
- GFA: 38,251 sqm
- NLA: 21,690 sqm
- Occupancy rate: 99% (66% Barito Pacific and subsidiaries)



## Wisma Barito Pacific 2

- Expansion of Wisma Barito Pacific
- Land size: 5,290 sqm
- GFA: 46,530 sqm
- NLA: 26,365 sqm
- Planned for 45% strata sale & 55% owned / leased
- Construction start: 2Q 2018
- Expected completion date: 2Q 2020



## Griya Idola Industrial Park

- Closest industrial park to Jakarta in the west
- Strategically located on the main road of Jl. Raya Serang Km 12, Cikupa, Tangerang
- Total area: 60 ha
- Phase 1: 20 ha (100% sold) completed in 2Q 2018
- Phase 2: over 60% sold; target completion : 4Q 2019
- Phase 3: development started in 1Q 2019



## Hotel Mambruk Anyer

- Location: Cikoneng, near CAP's integrated petrochemical complex
- 97-room resort overlooking the Anyer beach
- Operations started in January 1989
- Land size: 68,800 sqm
- GFA: 13,208 sqm
- Occupancy rate: 51%



Section 2

# KEY BUSINESS HIGHLIGHTS

BaritoPacific

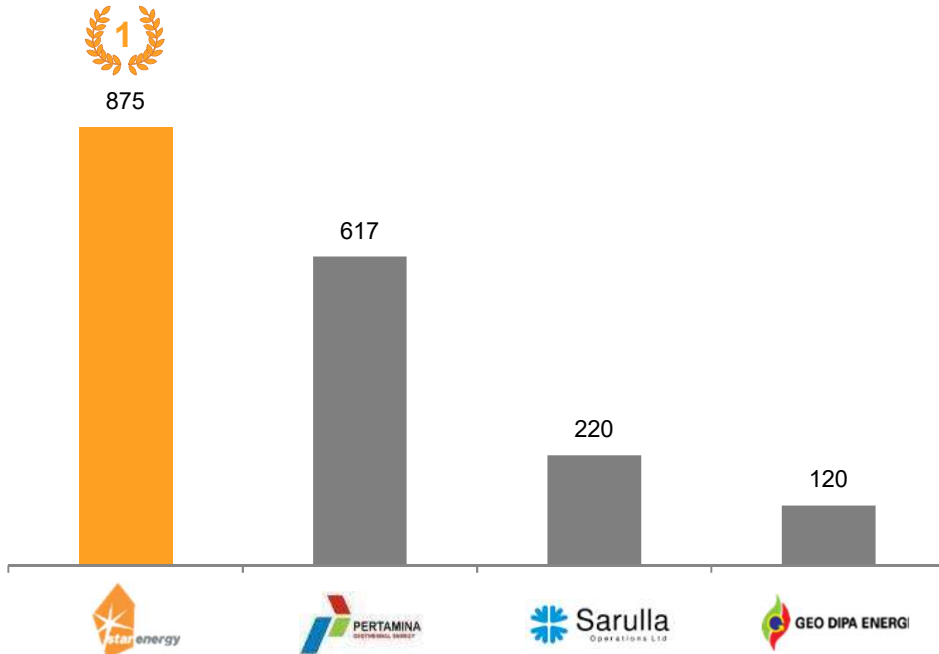


- 1** Market leading positions in Indonesia's petrochemical and energy sector with key assets strategically located in Java
- 2** Strong track record of operational performance
- 3** Predictable and stable cash flows from geothermal power business
- 4** World class partners
- 5** Track record of delivering strategic projects on time and on budget
- 6** Highly visible and tangible pipeline growth
- 7** Well positioned to benefit from Indonesia's growth
- 8** Attractive industry outlook for the power and petrochemicals industries
- 9** Highly experienced management team with proven track record of managing and expanding operations



### Geothermal Energy Producers in Indonesia

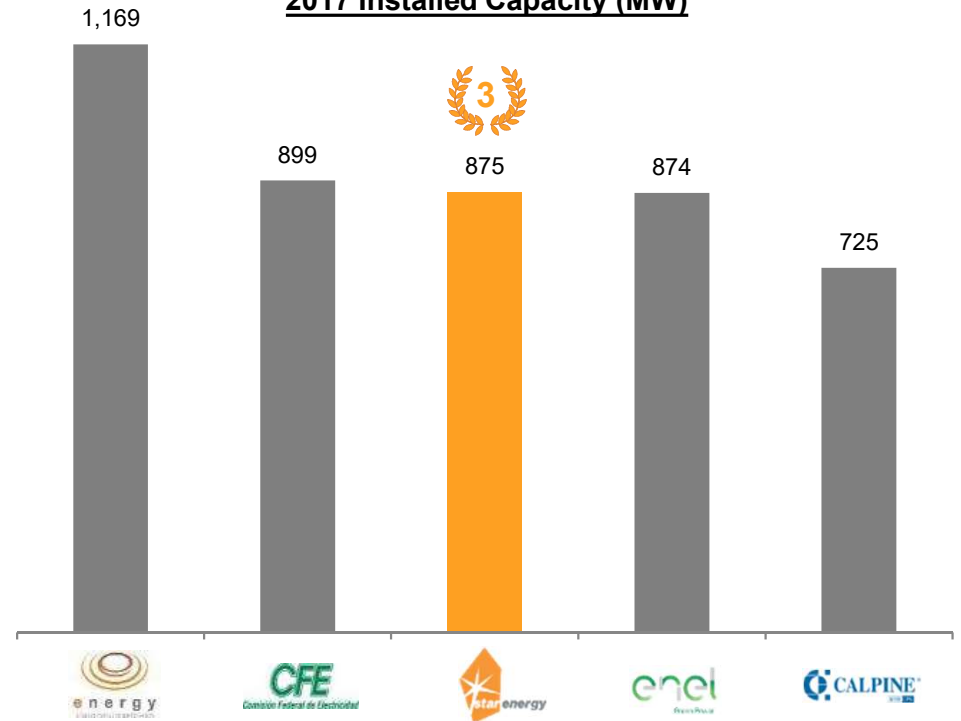
2017 Installed Capacity (MW)



**1** largest geothermal energy producer in Indonesia

### Top Geothermal Energy Producers Globally

2017 Installed Capacity (MW)



**3** largest geothermal energy producer globally

### Listed Southeast Asia IPPs with Geothermal Exposure

**EDC**  
Philippines

**VIVANT**  
Vivant Corp  
Philippines

**PHINMA ENERGY**  
Phinma Energy  
Philippines

**First Gen**  
First Gen  
Philippines

**AboitizPower**  
A Better Future  
Aboitiz Power  
Philippines

**EGCO GROUP**  
EGCO (1)  
Thailand

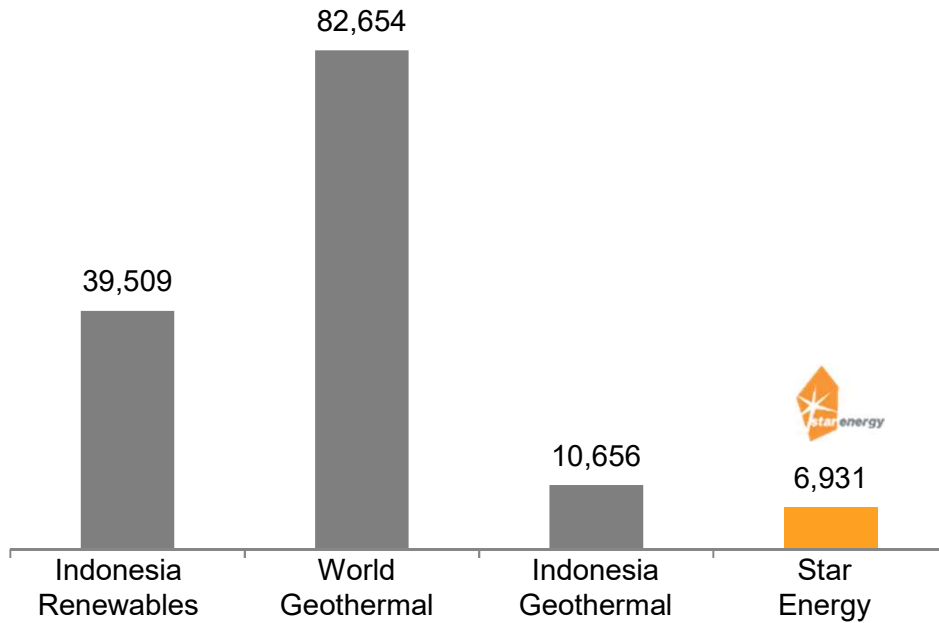
**bcpg**  
BCPG (1)  
Thailand

(1) Indirect exposure through stake in Star Energy

Source: Frost & Sullivan, company websites, company filings

## 2016 Production

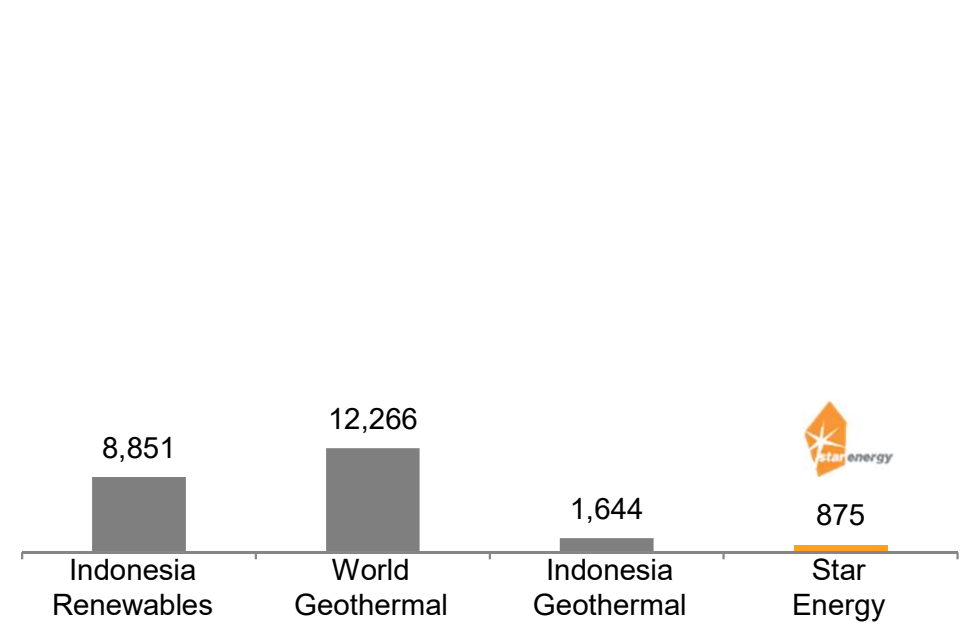
World Renewables 5,885,504 (GWh)



Star Energy % to :	
Indonesia Geothermal	65.04%
Indonesia Renewables	17.54%
World Geothermal	8.39%
World Renewables	0.12%

## 2016 Capacity

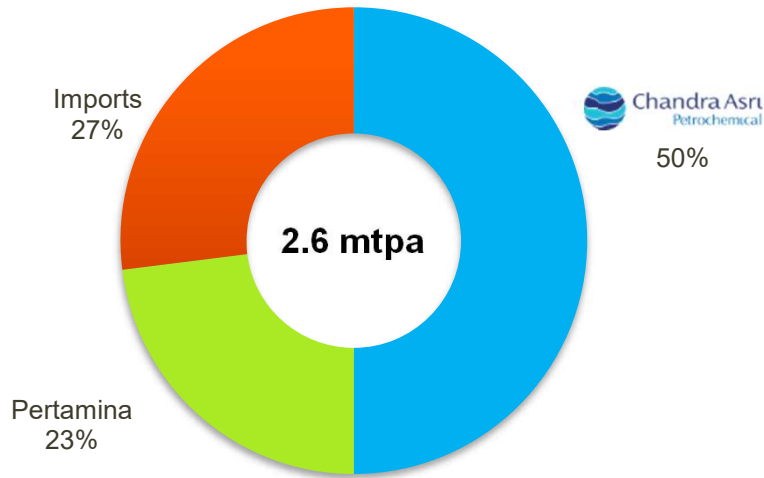
World Renewables 2,011,446 (MW)



Star Energy % to :	
Indonesia Geothermal	53.24%
Indonesia Renewables	9.89%
World Geothermal	7.13%
World Renewables	0.04%

## Olefin producers in Indonesia

2018 Olefin Supply in Indonesia

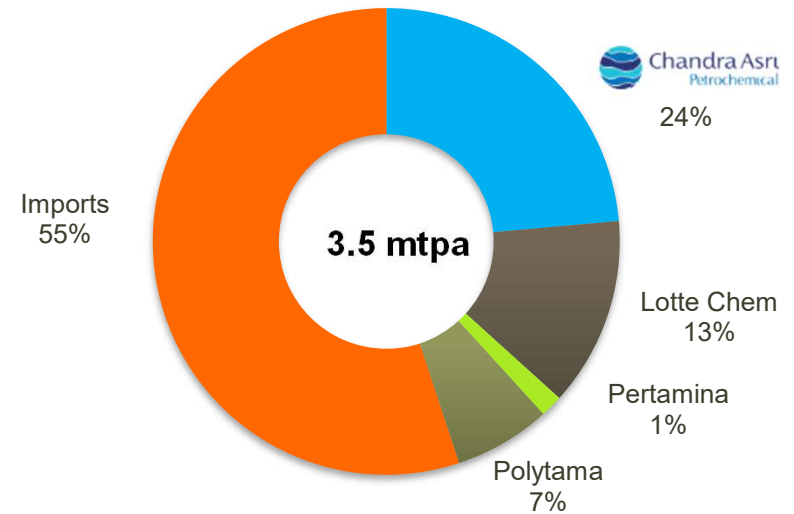


**1** largest Olefin producer in Indonesia

**7** largest Olefin producer in Southeast Asia

## Polyolefin producers in Indonesia <sup>(1)</sup>

2018 Polyolefin Supply in Indonesia



**1** largest Polyolefin producer in Indonesia

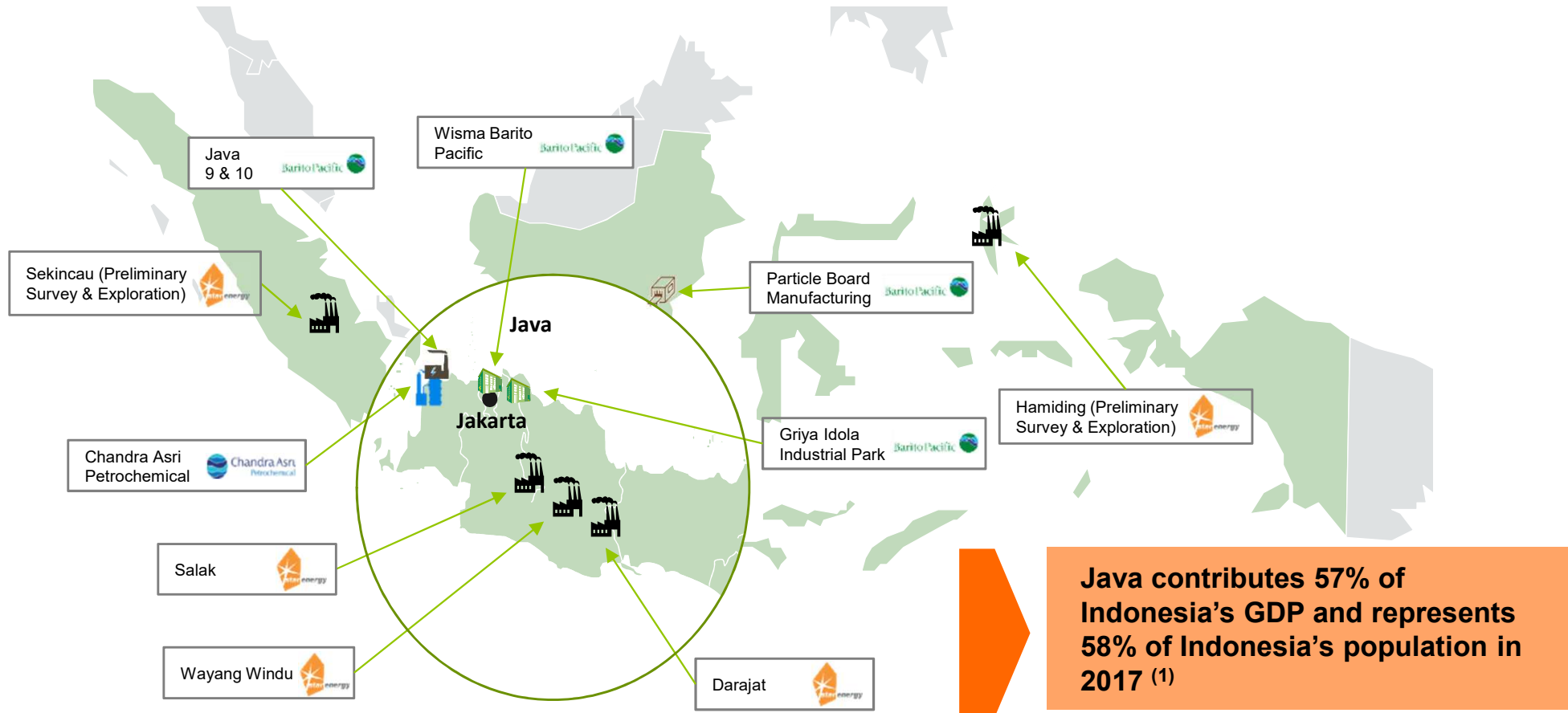
**7** largest Polyolefin producer in Southeast Asia

Source: Nexant

(1) Based on combined figures of polyethylene and polypropylene

# 1 Leading Indonesian Integrated Energy Group

...with the Group's key assets strategically located in Java



**Java contributes 57% of Indonesia's GDP and represents 58% of Indonesia's population in 2017 (1)**

**Salak (Geothermal)**  
377 MW operating capacity

**Darajat (Geothermal)**  
271 MW operating capacity

**Wayang Windu (Geothermal)**  
227 MW operating capacity

**Sekincau (Preliminary Survey & Exploration appointment process)**  
Preliminary survey field work completed in 2015

**Hamiding (Preliminary Survey & Exploration appointment process)**

**Java 9 & 10 (Coal-fired Power Project under development)**  
JV with Indonesia Power. Capacity of 2x1,000 MW. Ultra supercritical technology

**Chandra Asri Petrochemical ("CAP")**  
Evaluating second petrochemical complex. Butadiene, cracker revamping and PE expansion plans achieved FID

**Griya Idola Industrial Park**  
60 ha Integrated industrial park

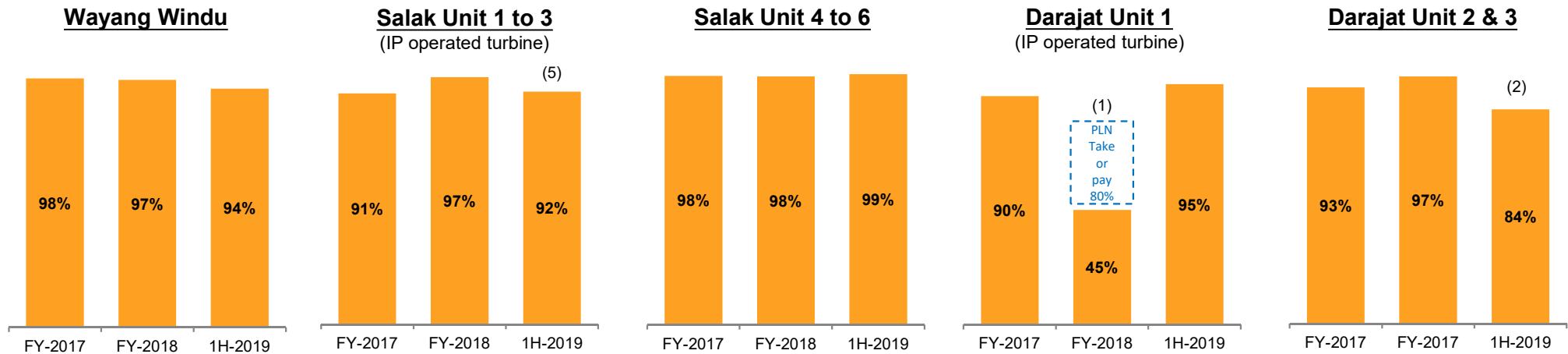
**Wisma Barito Pacific**  
Office complex in West Jakarta with GFA of 38k sqm

**Particle Board Manufacturing**  
Particle board manufacturing plant in South Kalimantan with production capacity of 60,000 m<sup>3</sup> pa

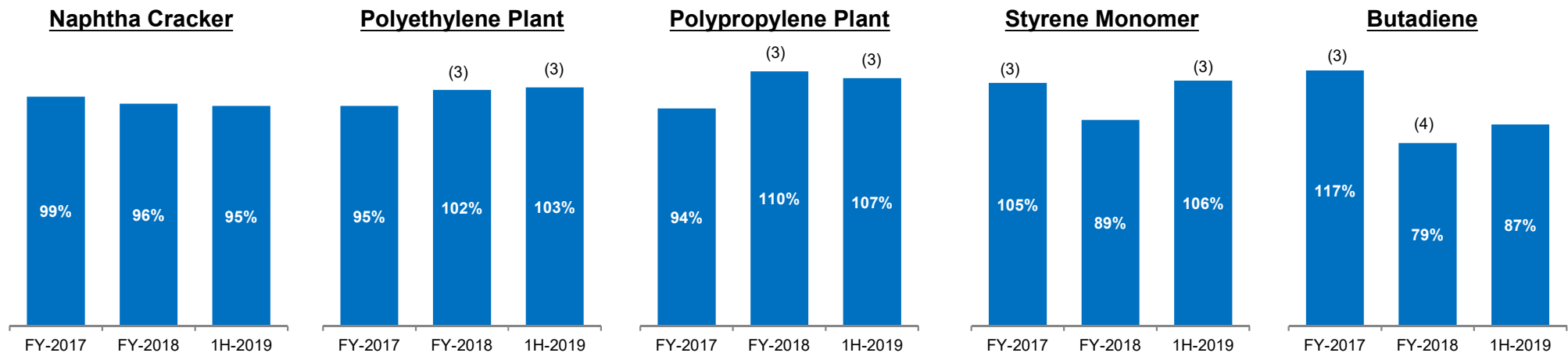
Future Developments

(1) Source: Frost & Sullivan

## Star Energy Operational Geothermal Assets – Average Net Capacity Factor



## Chandra Asri Petrochemical Key Plants – Historical Utilization



- (1) Darajat Unit 1 power plant is operated by PT Indonesia Power, a subsidiary of PLN, Star Energy provides steam on a take-or-pay basis up to 80%. There were 3.5 days unplanned shutdown in Jan 2018. Unit 1 was also shutdown from 18 March 2018 until 30 Sept 2018 due to high vibration on PLN turbine.
- (2) Lower Generation from Darajat 2-3 mainly due to accelerated planned Shutdown and Turn Around Maintenance and unplanned shutdown due to turbine high vibration from 1 June to 18 June 2019.
- (3) Figures >100% denote utilization in excess of nameplate capacity
- (4) Planned shutdown (March-May) for expansion tie-ins. Restarted operations in June 2018 with 37% higher production capacity.
- (5) Salak Units 1-3 lower generation in 2019 mainly due to planned Simple Inspection of Unit 1 totalling 31 days to repair the required solenoid valve and to address higher curtailment and grid problem.

- **Long-term offtake agreements** with state-owned enterprises (PLN and Pertamina)



PLN



PERTAMINA

- **Capacity contracted on take-or-pay basis:**

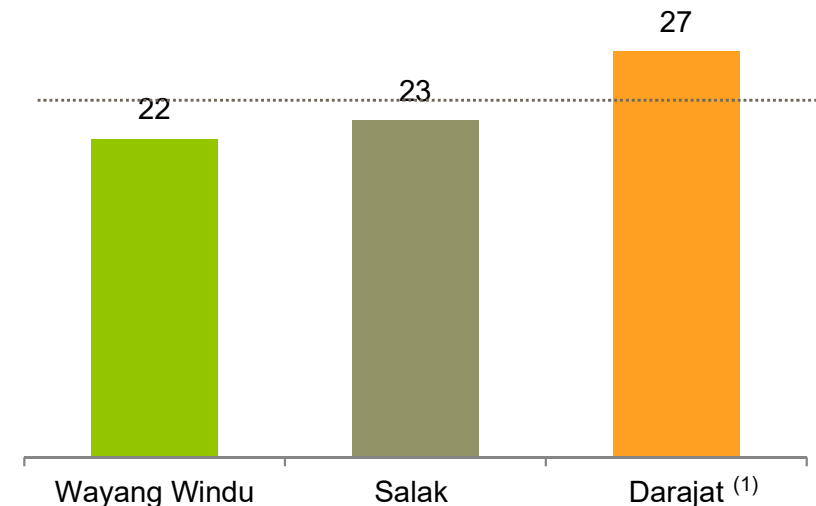
- Wayang Windu: 95.0%
- Darajat: 80.0% (Unit 1); 95.0% (Units 2 and 3)
- Salak: 95.06% (Units 1 to 3); 90.14% (Units 4 to 6)

- **Tariffs protected against macroeconomic risks**

- FX risk: Capacity payment tariffs denominated in USD
- Inflation risk: O&M portion of tariffs adjusted for Indonesia and US inflation
- Cost inflation risk: Tariffs adjusted for machinery and tools inflation

## Remaining Contract Life by Asset (years)

Current contracts have a capacity weighted average remaining term of ~24 years



**Stable cash flows underpinned by long-term take-or-pay offtake agreements from the geothermal business will provide a cushion against the cyclical nature of the petrochemical business**

(1) Capacity-weighted based on Unit 1 and Unit 2 remaining contract life of 24 years and Unit 3 remaining contract life of 30 years



## Power Business

### Partners



- Acquired 33.33% stake in Star Energy for a total consideration of US\$357m in July 2017



- Partnered with Star Energy on the acquisition of Salak and Darajat geothermal assets from Chevron in April 2017
- Acquired 20.00% stake in Wayang Windu in 2012



- Partnered with Star Energy on the acquisition of Salak and Darajat geothermal assets from Chevron in April 2017
- Acquired 20.00% stake in Wayang Windu in 2014



- Partnered with Star Energy on the acquisition of Salak and Darajat geothermal assets from Chevron on 31 March 2017



- Recently partnered with Barito Pacific in the development of Java 9 & 10, a 2 x 1,000 MW ultra supercritical coal-fired power project

### Customers & Counterparts



- PLN has been an offtaker of Star Energy since 1994



- Star Energy's counterpart under the Joint Operation Contract basis to develop geothermal fields in Indonesia



## Petrochemicals Business

### Partners



- Acquired 30% stake in CAP in 2011
- Currently owns a 30.57% stake in CAP
- Sharing of technical and operational expertise
- Access to Thai financial institutions



- Partner to CAP in the Synthetic Rubber JV (45% held by CAP<sup>(1)</sup> and 55% held by Michelin)

### Reputable Suppliers & Customers



- Largest supplier of naphtha feedstock to CAP, accounting for 23.1% of total supply in 2017



- Key supplier of naphtha feedstock to CAP, accounting for 15% of total supply in 2018



- Key customer / offtaker of ethylene from CAP



- Key customers of CAP

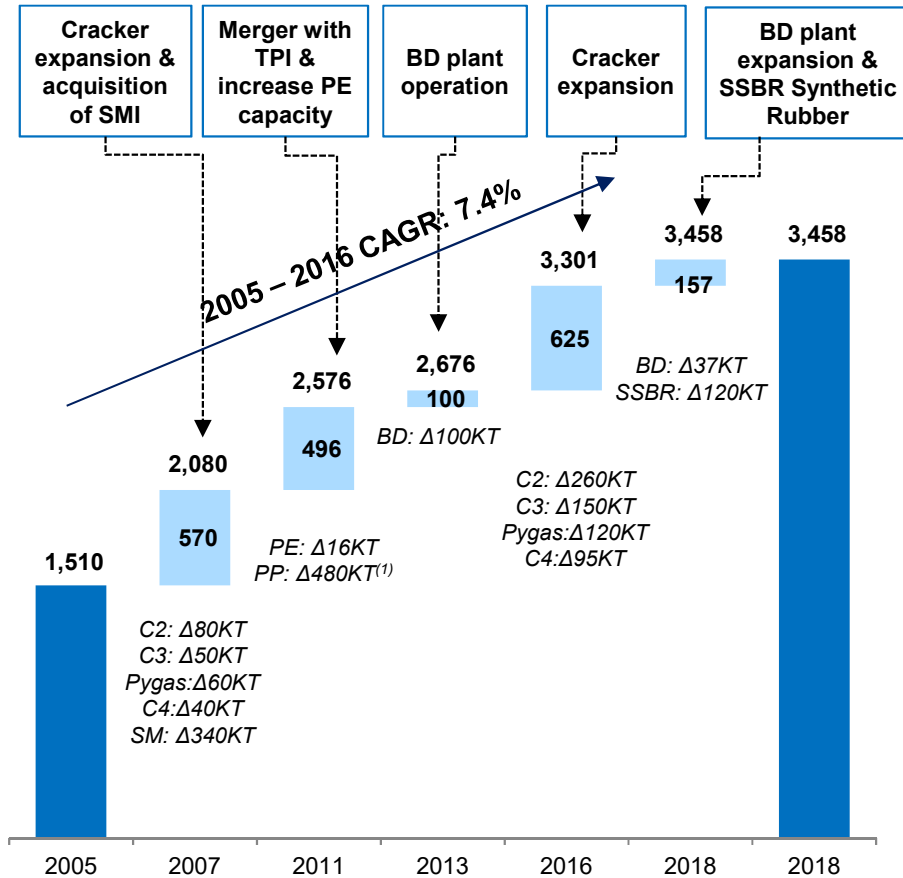
**Strong support from world class partners is a testament to the quality of Barito Pacific's assets**

(1) Indirectly held, through wholly-owned subsidiary PT Styrimo Mono Indonesia

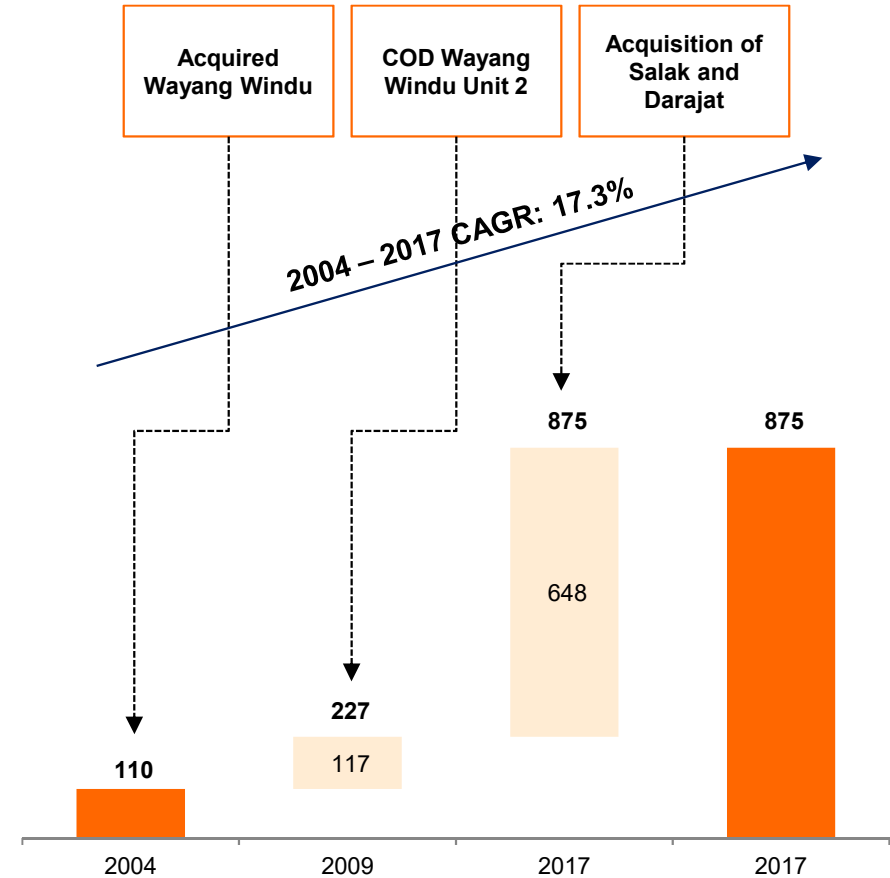
# Track Record of Delivering Strategic Projects on Time and on Budget



## CAP Historical Expansions (in ktpa)



## Star Energy Historical Expansions (in MW)



**Strong history of achieving operational and structured growth**

(1) Represents addition to capacity due to merger with TPI that had installed propylene capacity of 480 ktpa at the time of merger



### Growth Factors



- Low electricity consumption per capita in Indonesia as compared to other ASEAN countries; headroom for rapid growth
- Government development plan to increase electrification ratio
- Significant growth in coal power and geothermal power capacity required, of which majority is allocated to IPPs

### Development Opportunities

- Star Energy will focus on renewable energy opportunities
  - Further expansion of existing operational geothermal projects.
  - Development of current exploration assets in Indonesia – Hamiding & South Sekincau.
  - Greenfield or brownfield renewable energy opportunities in Indonesia and outside.
- Diversification into coal-fired power generation
  - Indonesia only
  - 2 x 1,000 MW ultra supercritical coal-fired power plant (Java 9 & 10) in partnership with Indonesia Power, a subsidiary of PLN

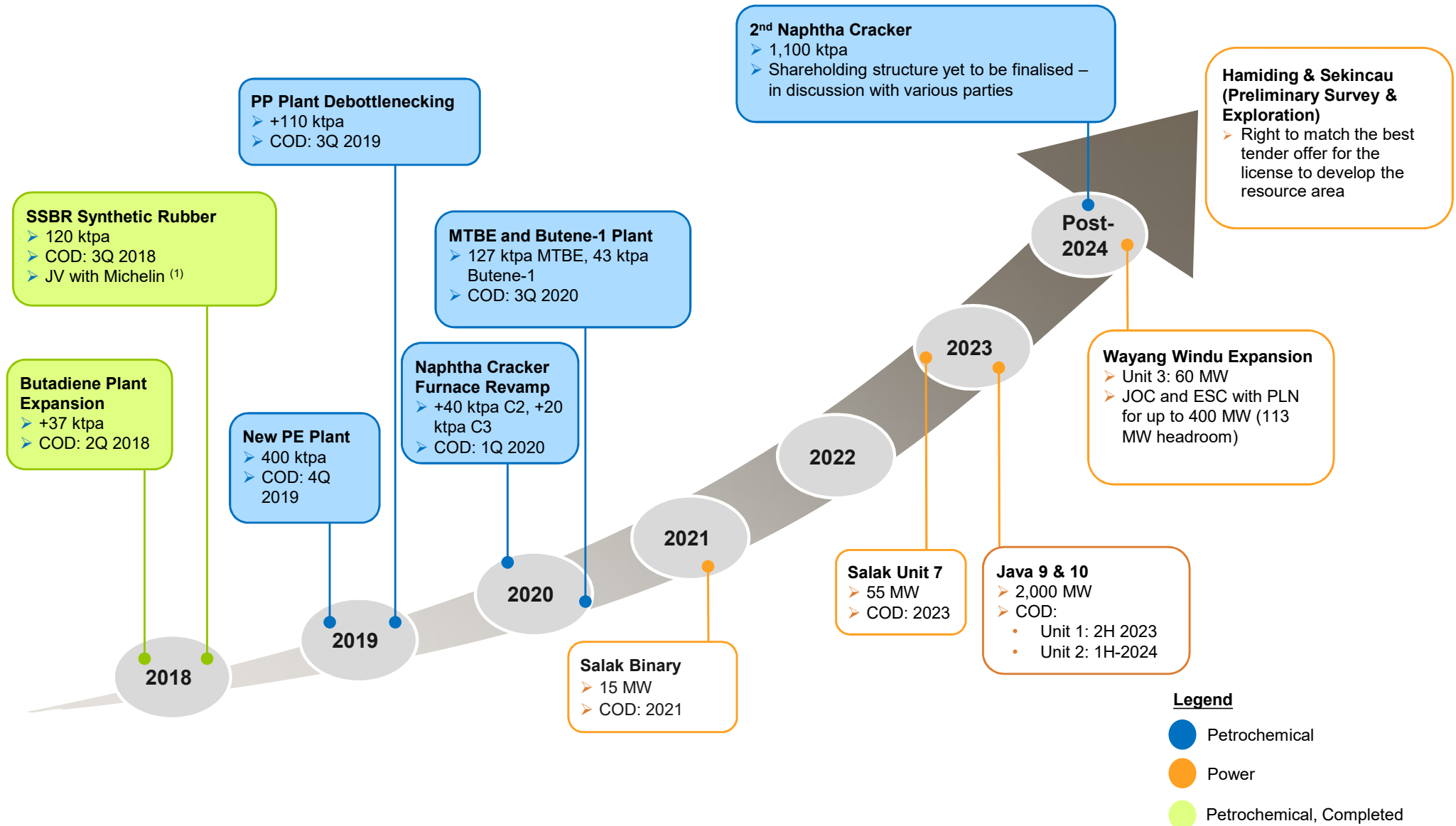


- Rising population and median incomes to drive consumer spending and GDP growth in Indonesia
- Strong domestic demand for petrochemical products and basic chemicals

- Increase production capacity, expand product offering and further optimize integration
- Improve operational efficiency

# Sizeable and Tangible Pipeline Growth (cont'd)

High quality organic growth pipeline paving the way for successful expansion



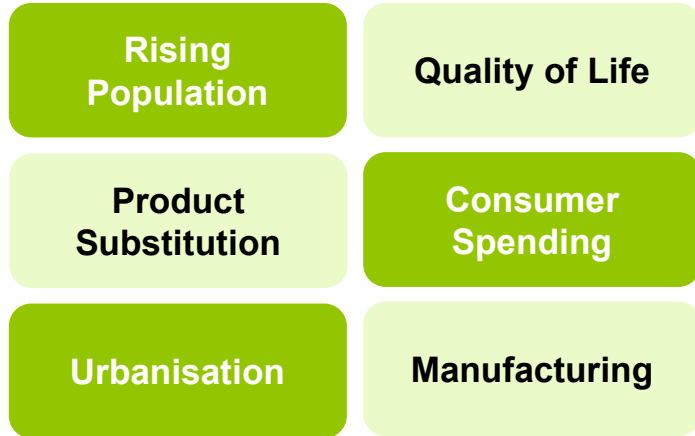
Note: Final investment decision (“FID”) projects are shaded

(1) 55% held by Michelin and 45% held by CAP (indirectly, through wholly-owned subsidiary PT Styrimdo Mono Indonesia)

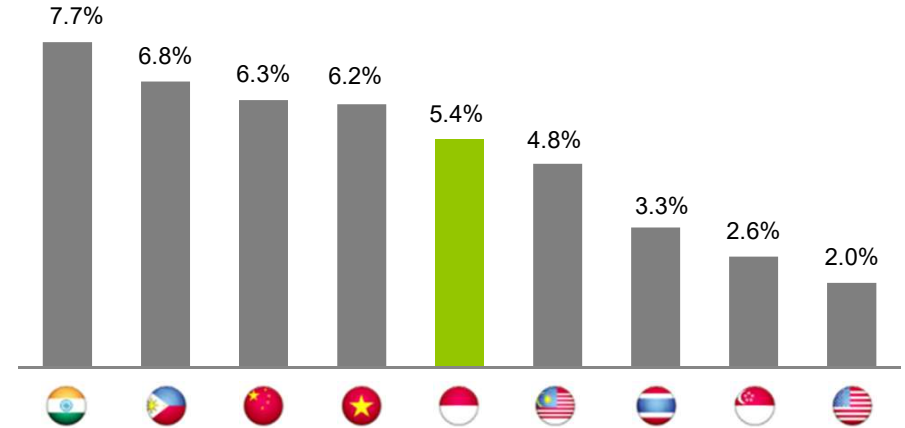
# Well Positioned to Benefit from Indonesia's Growth

Operates in key industries with strong underlying growth prospects...

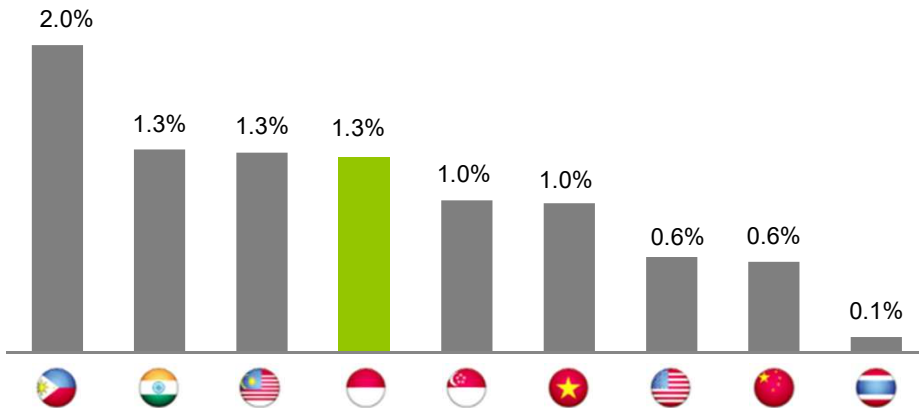
## Key Growth Drivers in Indonesia



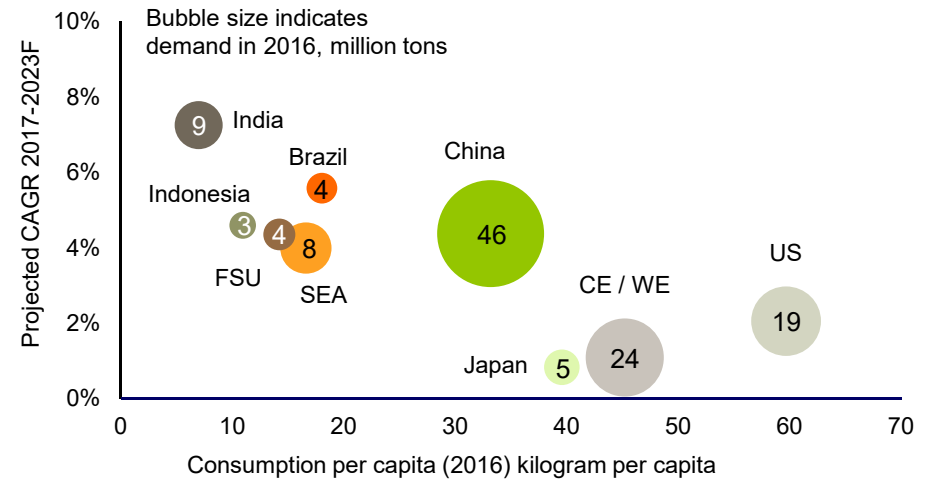
## GDP Growth CAGR (2017-2020E)



## Population Growth CAGR (2017-2020E)



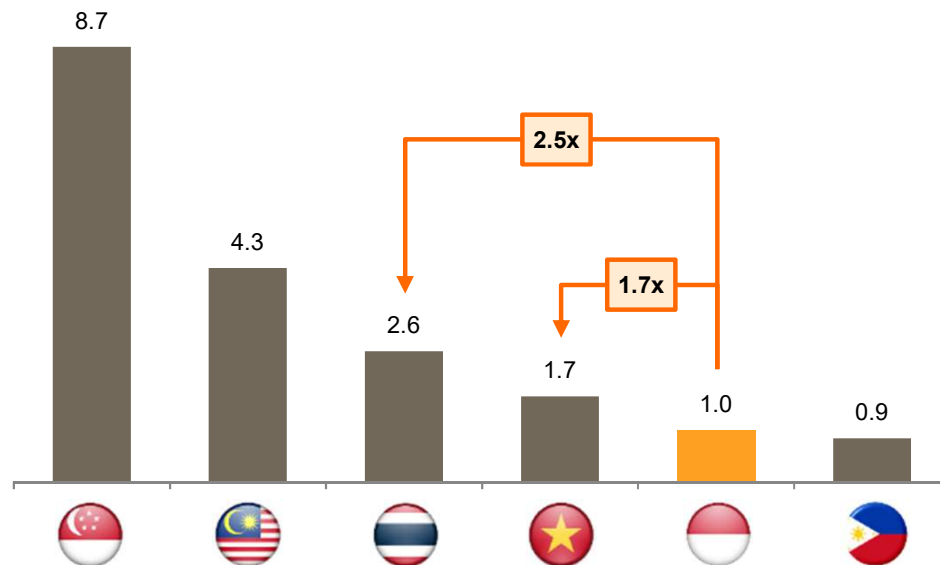
## Polyolefins Consumption per Capita<sup>(1)(2)(3)</sup>



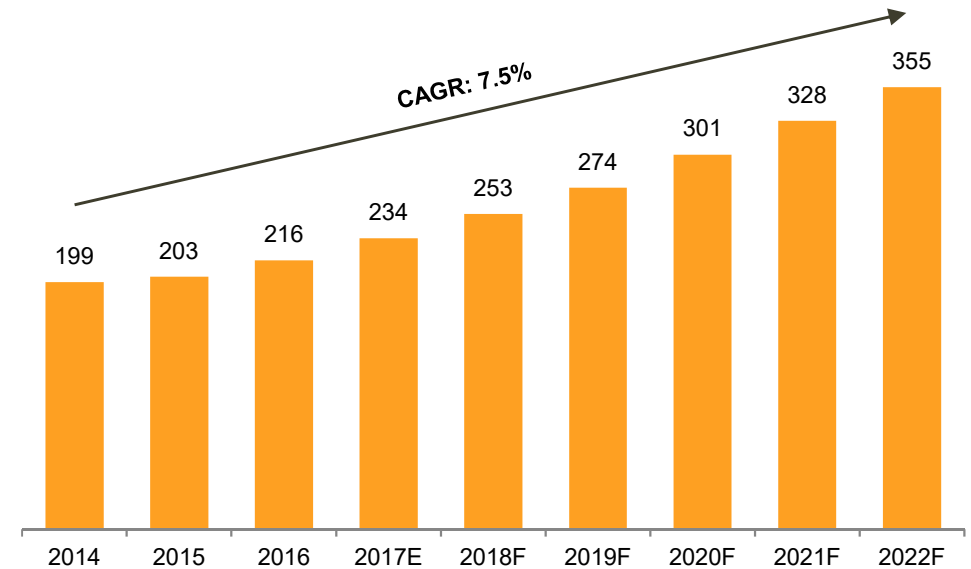
Source: Frost & Sullivan, Nexant Industry Report, IMF, BKPM  
 (1) SEA excludes Indonesia  
 (2) Polyolefins include HDPE, LLDPE, LDPE and PP  
 (3) FSU: Former Soviet Union; CE: Central Europe; WE: Western Europe

- The 2026 Electricity Supply Business Plan (Rencana Umum Penyediaan Tenaga Listrik – “**RUPTL**”), lays out the government’s electricity development plan from 2017 to 2026
- The RUPTL aims to achieve an electrification ratio for Indonesia of 100.0% by 2024, by developing an additional 80.5 GW of power generation capacity
- Geothermal power generation and output are projected to increase significantly due to the large undeveloped geothermal resources in Indonesia

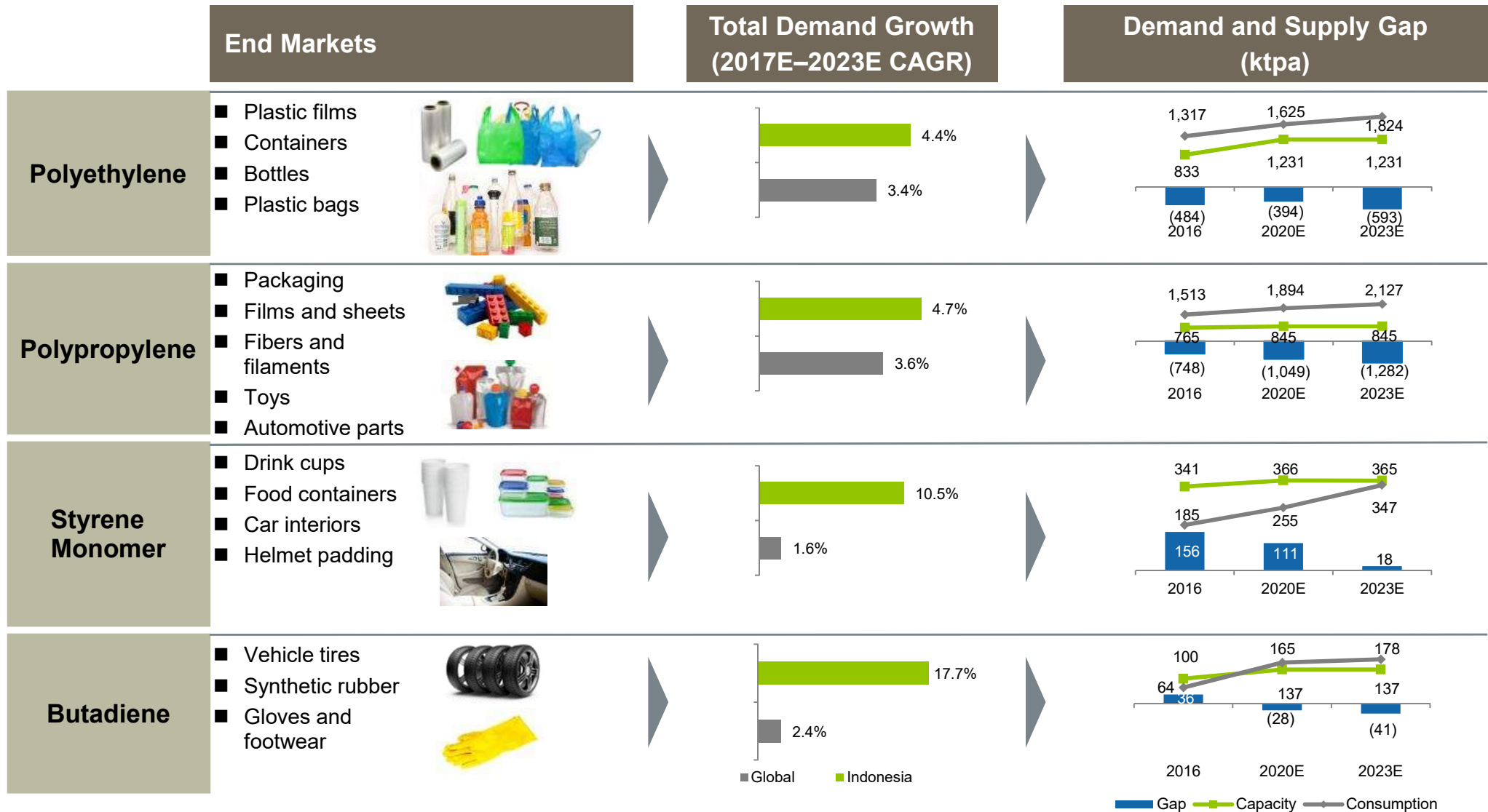
### 2016 Electricity Consumption per capita (MWh)



### Electricity Demand (TWh)



**Significant headroom for electricity demand growth**



**Indonesia is expected to remain in deficit and dependent on imports**

## Barito Pacific



**Prajogo Pangestu**  
*President Commissioner*  
50 years in industry  
26 years with Barito Pacific



**Henky Susanto**  
*Independent Commissioner*  
27 years in industry  
Appointed on 15 May 2019



**Lim Chong Thian**  
*Commissioner*  
39 years in industry  
Appointed on 15 May 2019



**Salwati Agustina**  
*Independent Commissioner*  
30 years in industry  
Appointed on 15 May 2019



**Agus Salim Pangestu**  
*President Director*  
23 years in industry  
22 years with Barito Pacific



**Rudy Suparman**  
*Vice President Director*  
31 years in industry  
2 years with Barito Pacific



**Andry Setiawan**  
*Director*  
15 years in industry  
1 year with Barito Pacific



**David Kosasih**  
*Independent Director*  
7 years in industry  
1 year with Barito Pacific

## Chandra Asri Petrochemical



**Agus Salim Pangestu**  
*Commissioner*  
12 years in industry  
12 years with CAP



**Ho Hon Cheong**  
*Commissioner / Independent Commissioner*  
3 years in industry  
3 years with CAP



**Tan Ek Kia**  
*Vice President Commissioner / Independent Commissioner*  
45 years in industry  
7 years with CAP



**Djoko Suyanto**  
*President Commissioner / Independent Commissioner*  
3 years in industry  
3 years with CAP



**Lim Chong Thian**  
*Commissioner*  
38 years in industry  
13 years with CAP



**Cholanat Yanaranop**  
*Commissioner*  
31 years in industry  
6 years with CAP



**Thammasak Sethaudom**  
*Commissioner*  
27 years in industry  
Appointed in Sep 2018



**Erwin Ciputra**  
*President Director*  
14 years in industry  
14 years with CAP



**Chatri Eamsobhana**  
*VP Director of Operations*  
22 years in industry  
<1 year with CAP



**Baritono Prajogo Pangestu**  
*VP Director of Polymer Commercial*  
13 years in industry  
13 years with CAP



**Andre Khor**  
*Director of Finance*  
14 years in industry  
<1 year with CAP



**Fransiskus Ruly Aryawan**  
*Director of Monomer Commercial*  
16 years in industry  
16 years with CAP



**Somkoun Sriwattagaphong**  
*Director of Manufacturing*  
21 years in industry  
Appointed in Sep 2018



**Suryandi**  
*Director of Human Resources & Corporate Affairs*  
28 years in industry  
28 years with CAP

## Star Energy – Board of Directors



**Tan Ek Kia**  
Chairman, SEGHPL  
45 years in industry  
6 years with Star Energy



**Agus Salim Pangestu**  
Director, SEGHPL  
24 years in industry  
9 years with Star Energy



**Rudy Suparman**  
Director, SEGHPL  
32 years in industry  
15 years with Star Energy



**Hendra Soetjipto Tan**  
Director, SEGHPL  
21 years in industry  
15 years with Star Energy



**Bundit Sapianchai**  
Director, SEGHPL  
31 years in industry  
2 years with Star Energy



**Chaiwat Kovavisarach**  
Director, SEGHPL  
10 years in industry  
2 years with Star Energy



**Kentaro Matsumura**  
Director, SEGPL  
1<sup>st</sup> year with Star Energy



**Danuja Simasathien**  
Director, SEGPL, SEGSD  
1<sup>st</sup> year with Star Energy



**Patrice R. Clausse**  
Director, SEGSD  
9 years in industry  
2 years with Star Energy

## Star Energy – Officers



**Rudy Suparman**  
Director, SEG Wayang Windu  
32 years in industry  
15 years with Star Energy



**Hendra Soetjipto Tan**  
CEO, SEG Wayang Windu, SEG Salak-Darajat  
21 years in industry  
15 years with Star Energy



**Heribertus Dwiudha**  
VP Operations  
SEG Wayang Windu  
21 years in industry  
15 years with Star Energy



**Boyke A. Bratakusuma**  
VP Subsurface & Well Testing  
SEG Wayang Windu  
21 years in industry  
7 years with Star Energy



**Asrizal Masri**  
Principal Technical Advisor  
SEG Wayang Windu  
27 years in industry  
7 years with Star Energy



**Peter Wijaya**  
VP Commercial & Business Development  
SEG Wayang Windu  
23 years in industry  
11 years with Star Energy



**Evy Susanty**  
VP Finance & IT  
SEG Wayang Windu  
19 years in industry  
10 years with Star Energy



**Suharsono Darmono**  
VP Operations  
SEG Salak-Darajat  
32 years in industry  
2 years with Star Energy



**Merly**  
VP Finance, Planning & IT  
SEG Salak-Darajat  
21 years in industry  
11 years with Star Energy



**Kenneth L. Riedel**  
GM Asset Development  
SEG Salak-Darajat  
34 years in industry  
2 year with Star Energy

Section 3

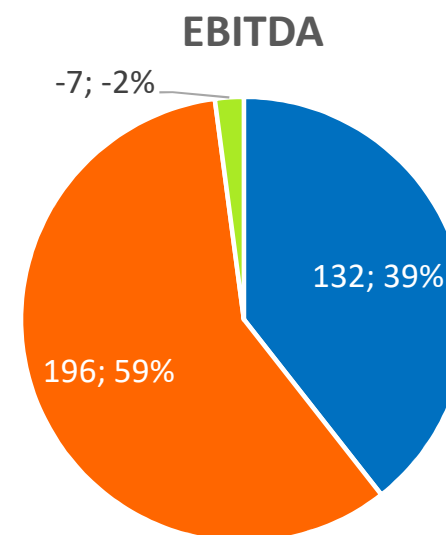
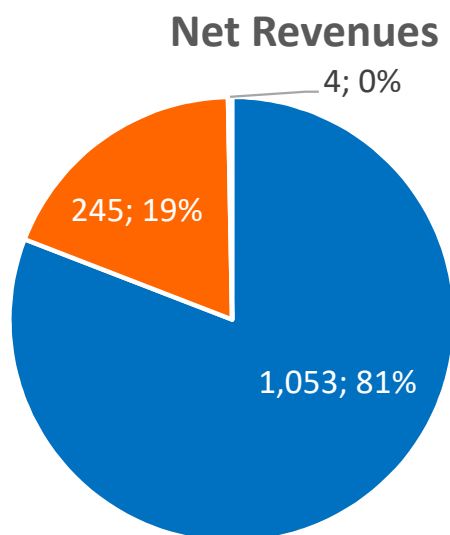
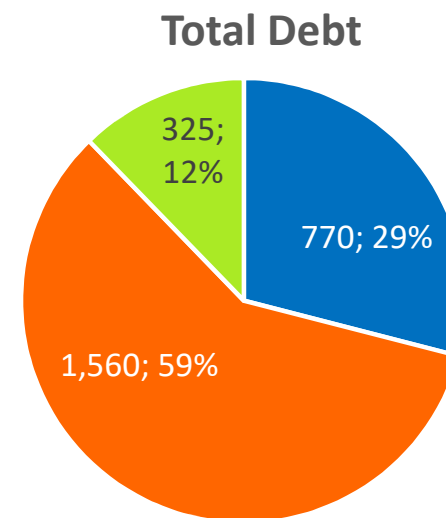
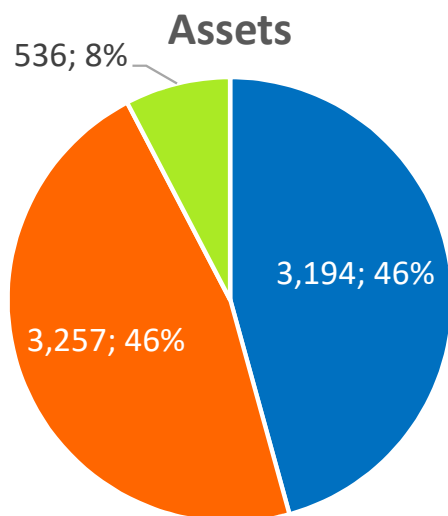
# 1H-2019 RESULTS



- **PT Barito Pacific Tbk**
  - Achieved consolidated EBITDA of US\$159m for 2Q-2019, bringing 1H-2019 EBITDA to US\$321m with healthy EBITDA margin of 24.6%, an 11.5% decrease on a year-on-year basis
  - Successfully refinanced US\$250m term loan (Bangkok Bank - due Sept 2019) with 36 months syndicated term loan facility of US\$200m in January 2019.
- **PT Chandra Asri Petrochemical Tbk**
  - Continued focus on delivering capacity growth, sustaining financial flexibility throughout the cycle and maintained operational excellence.
  - CAP's new 400KTA Polyethylene plant is on track for a start up later this year, together with the debottlenecking of the Polypropylene plant (110KTA additional capacity).
  - Maintained high operating rates for all plants >90% (except Butadiene : 87%).
  - Fully repaid the outstanding loan principal of US\$23.7m related to its US\$220m term loan.
  - Drawdown US\$150m from its US\$191m credit facility with Japan Bank for International Cooperation, Nippon Export and Investment Insurance and BNP Paribas.
  - CAP obtains tax holiday <sup>(1)</sup> on its new Polyethylene Plant, which is on tracked to start commercial operation later this year.

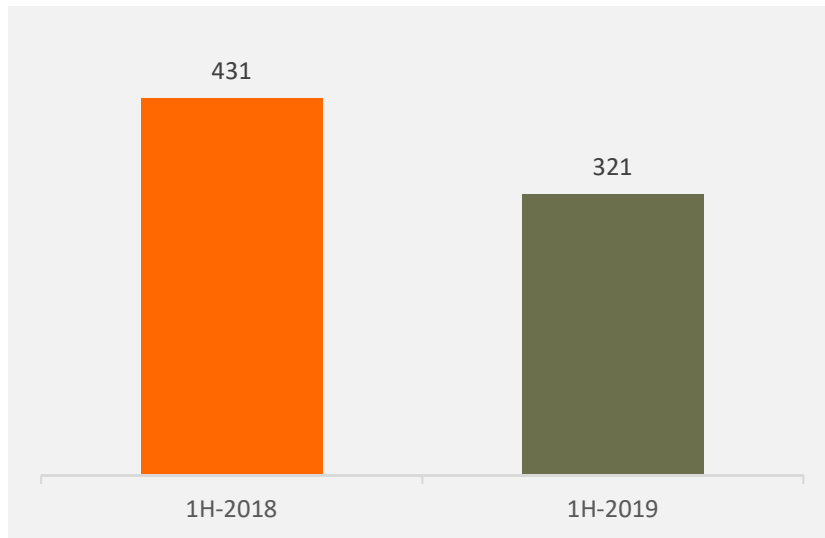
(1) The Tax Holiday facility for CAP's new Polyethylene Plant consists of a 100% reduction of corporate income tax for the first 10 years after the start of commercial production, followed by a 50% reduction for the following 2 years. Additionally, CAP had been granted exemption from withholding tax by third parties for 10 years period.

- **PT Chandra Asri Petrochemical Tbk**
  - CAP partners with Total to install solar panels to power its laboratory, warehouse and office building in Cilegon to generate renewable energy and affirms its commitment to sustainability
  - S&P Global Ratings upgraded CAP credit rating to BB- with a stable outlook.
- **Star Energy**
  - Maintained high capacity factor for all units >90%.
  - Repaid amortizing loan principal of Salak and Darajat (Safari Loan) totalling US\$35.25m and SEGWW Green bond of US\$14.5m in 1H-2019. Star's total debt at end of June 30, 2019 amounted to US\$1.56b.

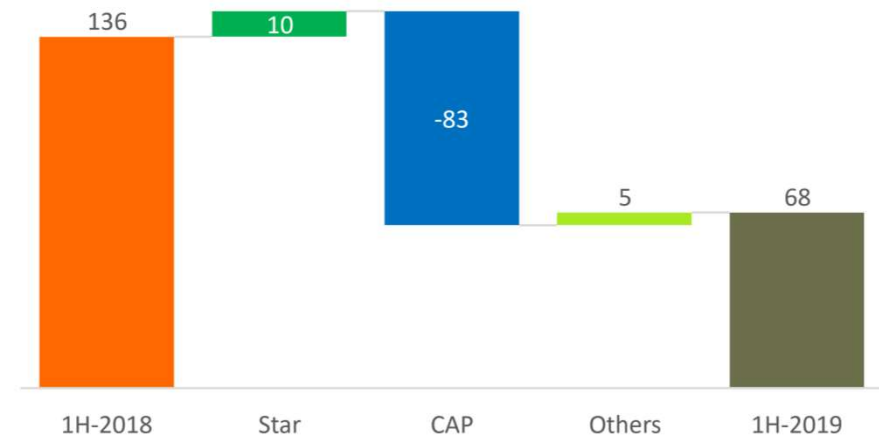
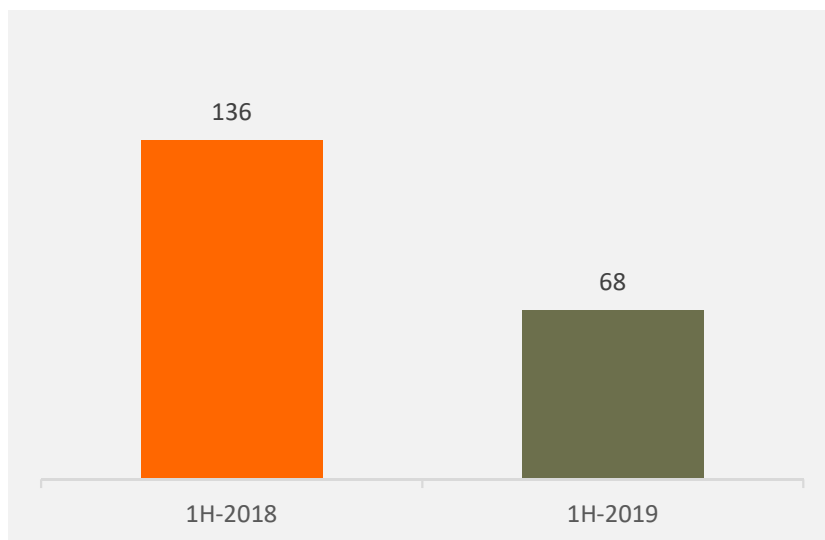


■ CAP ■ Star Energy ■ Barito & Others

## Consolidated EBITDA (US\$ Million)



## Consolidated Net Income (US\$ Million)



## Profit & Loss (US\$m)

Component	1H-2019	1H-2018	YoY Δ%
Net Revenues	1,302	1,550	(16.0%)
Cost of Revenues	(973)	(1,105)	(11.9%)
Gross Profit	329	445	(26.1%)
Finance Cost	(99)	(114)	(13.2%)
Net Income	68	136	(50.0%)
NI to Parent	11	42	(73.8%)
EBITDA	321	431	(25.5%)

## Balance Sheet (US\$m)

Component	1H-2019	FY-2018	YoY Δ%
Cash and Eqv	720	801	(10.1%)
Fixed Assets	2,756	2,682	2.8%
Total Assets	6,987	7,042	(0.8%)
Total Debt	2,655	2,654	(0.0%)
Total Liabilities	4,250	4,340	(2.1%)
Equity	2,737	2,702	1.3%

## Ratios

Component	1H-2019	1H-2018	YoY Δ%
Gross Profit Margin	25.3%	28.7%	(340bps)
EBITDA Margin	24.6%	27.8%	(320bps)
Net Income Margin	5.2%	8.8%	(360bps)
Debt to EBITDA (LTM for 2019; FY for 2018)	3.8X	2.8X	35.7%
Net Debt to EBITDA (LTM for 2019; FY for 2018)	2.8X	1.8X	55.6%

## Net Debt as of 1H - 2019

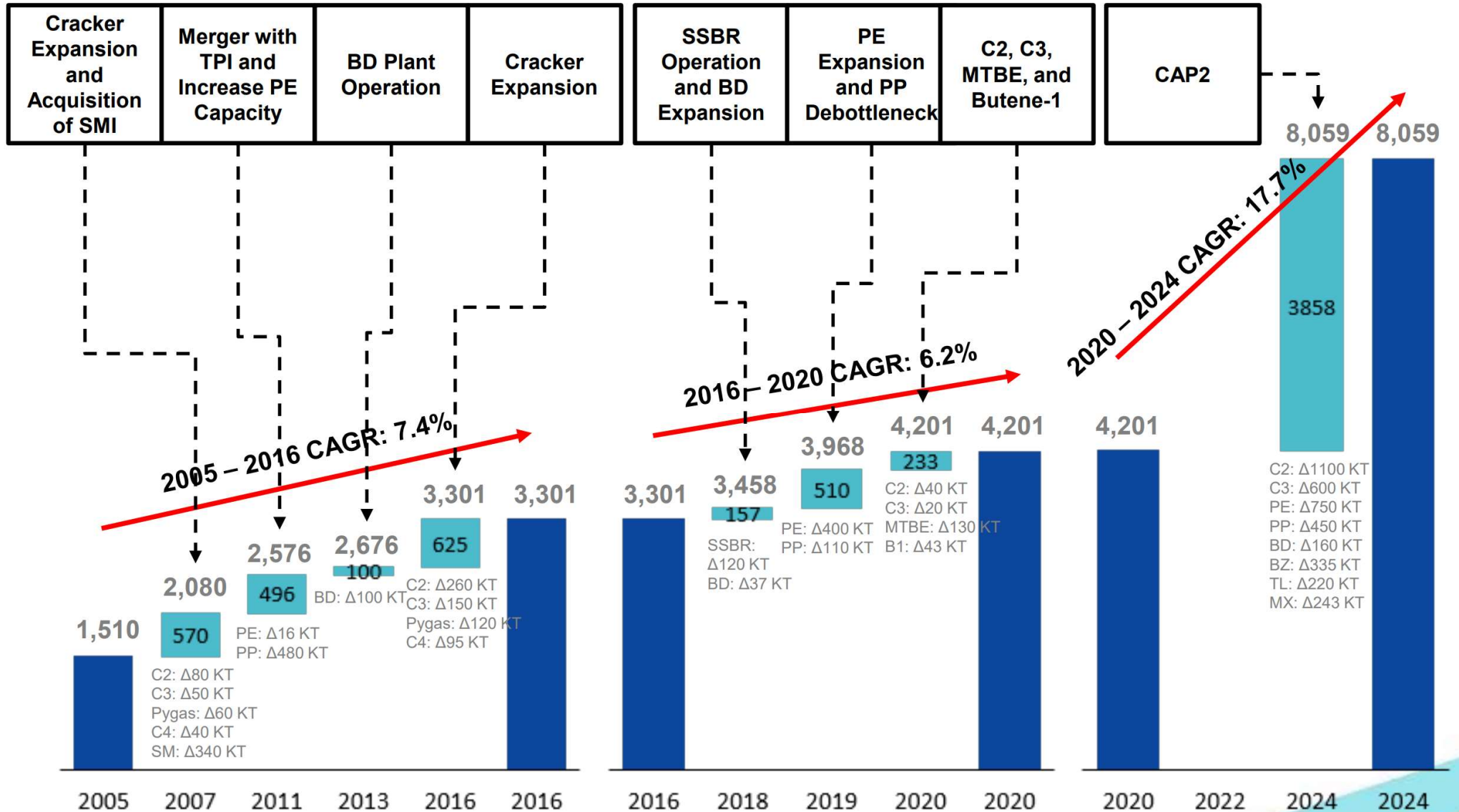
Component	Cash	Debt	Net Debt
Barito and other subsidiaries	41	325	284
CAP	649	770	121
Star Energy	30	1,560	1,530
<b>Barito - Consol</b>	<b>720</b>	<b>2,655</b>	<b>1,935</b>

Section 4

# **GROWTH STRATEGY**

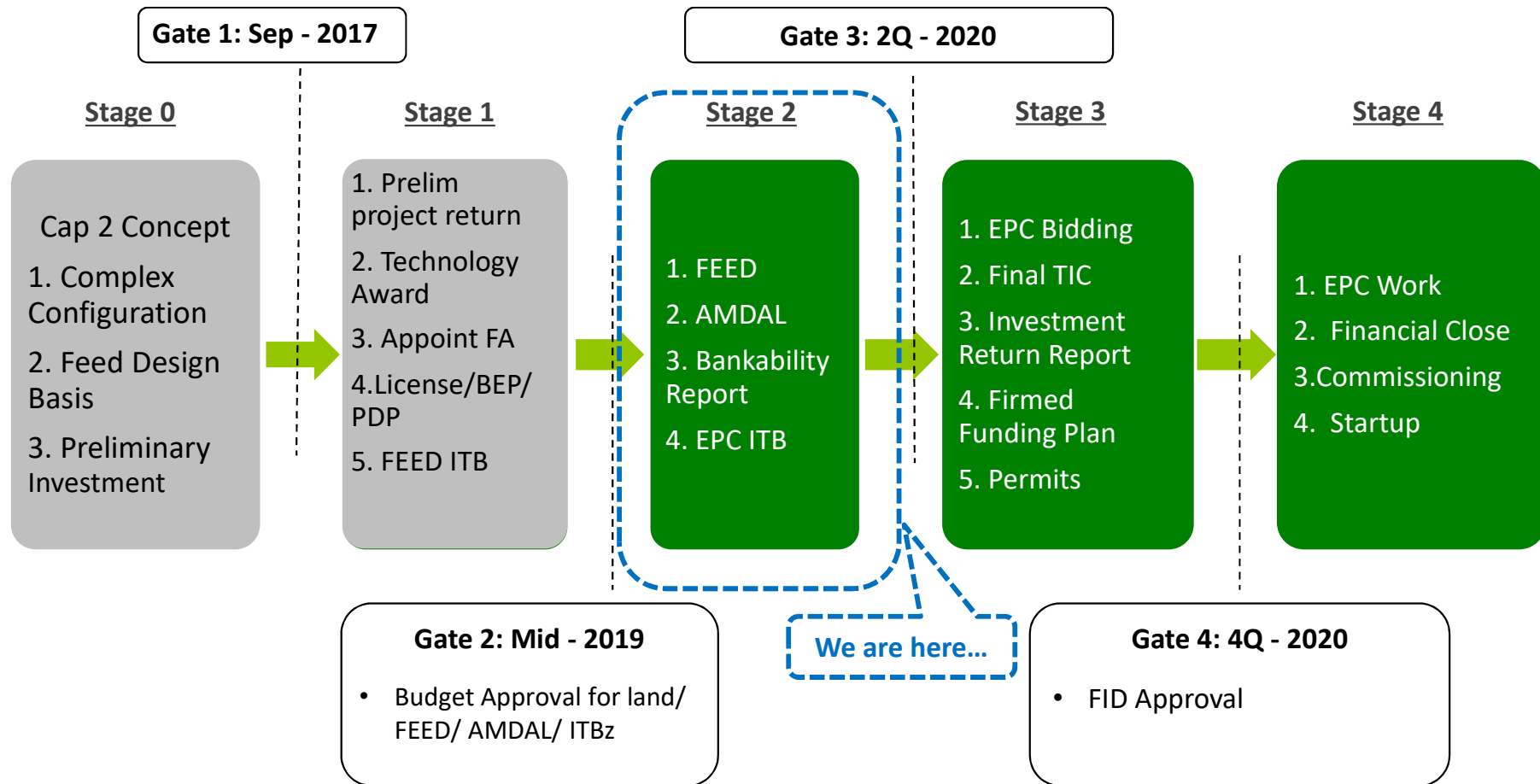
# Growth Strategy Chandra Asri Petrochemical

CAP 2 will deliver the next phase growth for Chandra Asri



After doubling the size of production capacity over historical 10 years, the expected further growth in the following years will come from several expansion & debottlenecking initiatives and construction of 2<sup>nd</sup> cracker complex

Note:  
 SSBR – Solution Styrene Butadiene Rubber      PE - Polyethylene      MTBE - Methyl tert-butyl ether  
 BD Expansion - Butadiene Plant Expansion      PP – Polypropylene      C2 / C3 – Refers to furnace revamp





# Geothermal Development Projects

## Salak Expansion

### Salak Binary

- Proposed Start-up: 2021
- 15 MW capacity
- Development stage: feasibility studies

### Salak Unit 7

- Proposed Start-up: 2023
- 55 MW power generation capacity
- Development stage: feasibility studies



## Geothermal Exploration

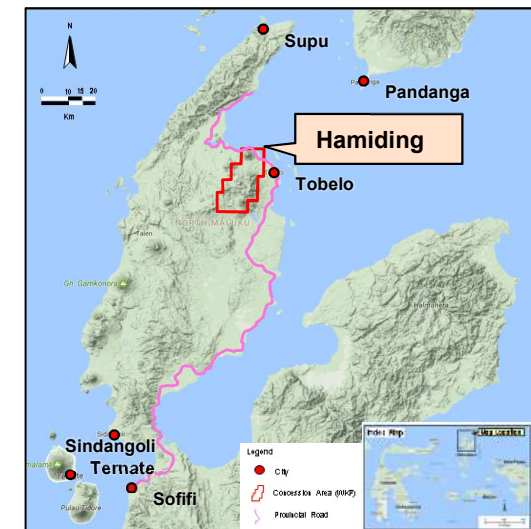
### Sekincau

- Located in West Lampung, Sumatera
- Right to match the best tender offer for the license to develop the resource area
- Development stage: preliminary survey & exploration



### Hamiding

- Located in North Halmahera, Maluku
- Right to match the best tender offer for the license to develop the resource area
- Development stage: preliminary survey & exploration



- ✓ Potential for Unit 3, scaling up gross power generation by up to 60 MW
- ✓ Expansion aimed at enhancing competitiveness, given growing demand, cost competitiveness and underutilized offtake agreement
- ✓ Star Energy has extensive experience and efficient business processes to identify optimal growth strategy and maximize upside while limiting capex
- ✓ Decision on Unit 3 to depend on the outcome of initial exploration drilling programs and returns generated from the capex

## Significant upside from Resource Availability

- GeothermEx estimates Wayang Windu geothermal energy reserves going forward are sufficient to sustain current generation of Unit 1 & 2 at or near 227 MW gross, with sufficient reserves to support output at 280 MW for 30 years and at 390 MW for 20 years
- Potential to add up to 60 MW through Unit 3, increasing installed capacity to up to 287 MW
- Capital expenditure could be in excess of US\$120m, and depends on outcome of drilling program in 2018 – 2021
- Star Energy already has the exclusive rights to the geothermal development of the land that contains the resources

## Strong Past Track Record provides Confidence for Future Expansion

- Have past experience of over 2 decades of dealing with the regulators and local communities
- Experience in successfully drilling wells for Units 1 and 2
- Timely completion of drilling programs with Unit 2 having started operations 14 days ahead of schedule
- Star Energy employs reputed and experienced drilling contractors and consultants
- Star Energy employs experienced suppliers and contractors for the plant construction

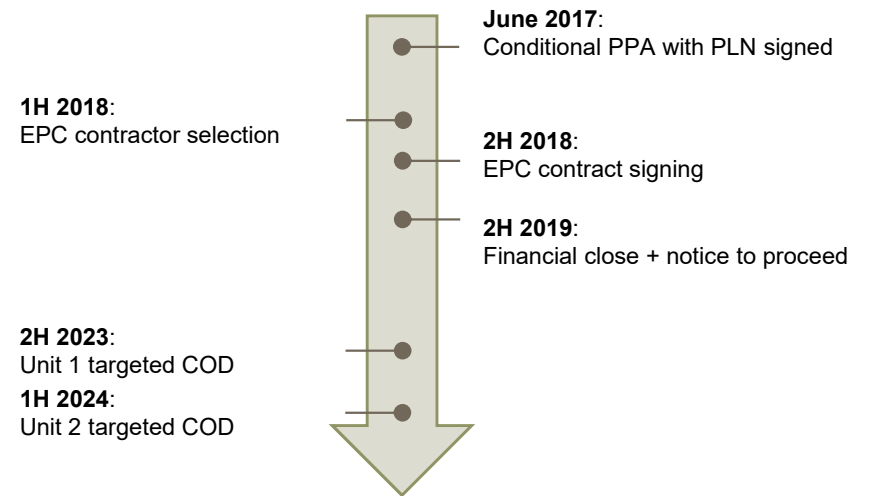
**Star Energy will utilize a third party geothermal consultant of international standing to confirm the existence of sufficient geothermal resources in the Wayang Windu area to support any expanded generation capacity for a period of no less than 20 years before incurring any capital expenditures for new geothermal units.**

# Java 9 & 10 Power Project

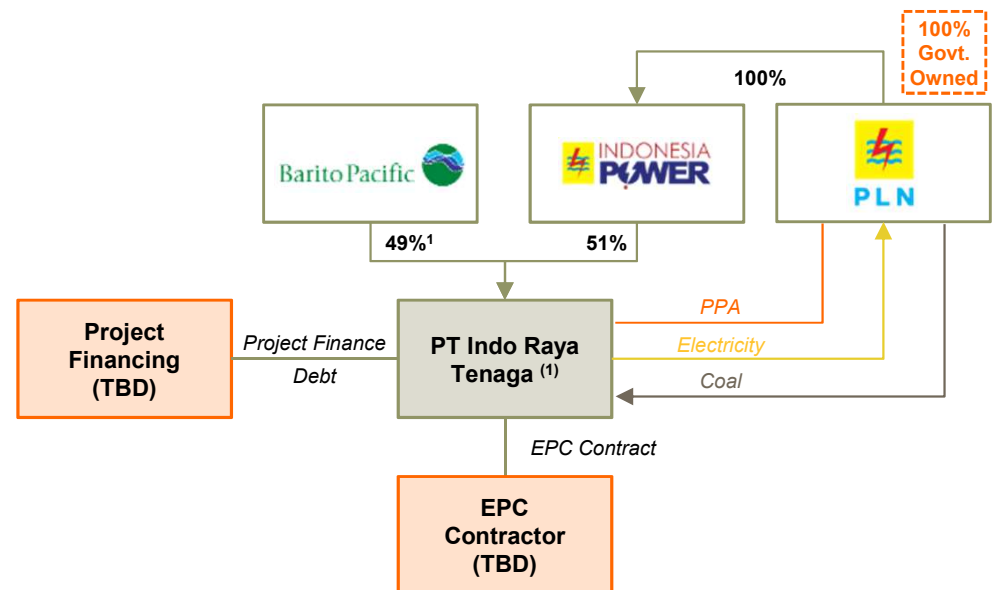
## Description

- 2,000 MW (2 x 1,000 MW) ultra supercritical coal-fired power project developed under a BOOT scheme
- Located in Suralaya, Banten province
  - The site is located in close proximity to CAP's integrated petrochemical complex in Cilegon
  - Land for the project has already been secured and currently undergoing initial site preparations
- The project, which is targeted to commence operations in 2023, is at an advanced development stage
- Conditional PPA with PLN signed in June 2017
  - Under the Java 9 & 10 PPA, the project is contracted to PLN for 25 years
  - PLN takes fuel supply risk with relation to the project
  - Furthermore, PLN purchases the project power capacity on a take-or-pay basis, such that the project bears no dispatch risk
- Project sponsors intend to enter into a turnkey fixed price EPC contract with a reputable, experienced EPC contractor
- Total project cost budgeted at US\$3.2 billion
- The Java 9 & 10 project will be financed by a competitive long-term limited recourse project financing on a 80:20 debt-to-equity ratio basis, in line with precedent Indonesian power projects
  - Financial close targeted for 2H 2019

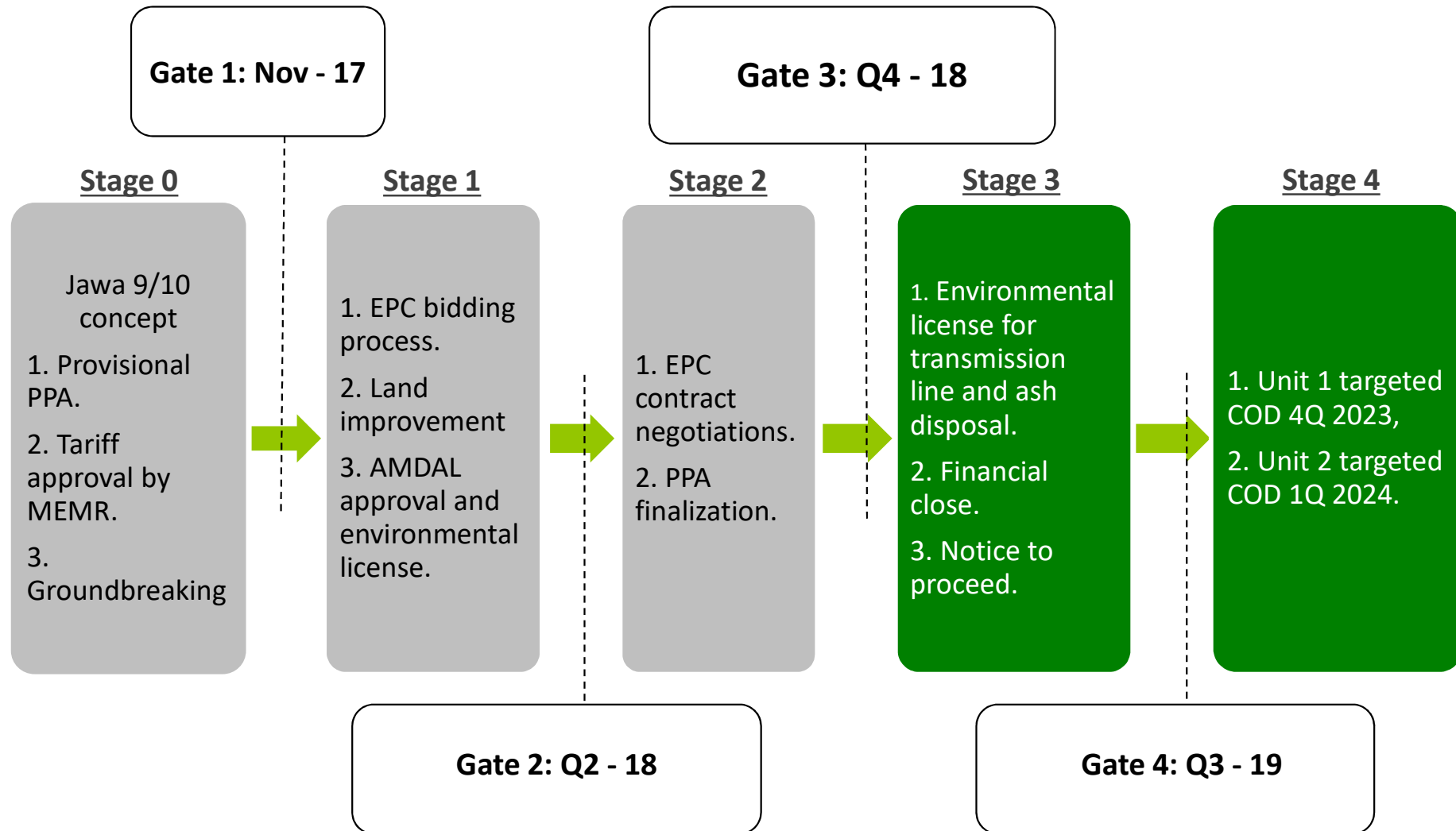
## Project Timeline



## Project Ownership



(1) Held indirectly through PT Barito Wahana Lestari  
 (2) Java 9 & 10 project company



**THANK YOU**



Appendix

# DEBT PROFILE

# Enlarged Barito Pacific Debt Analysis (as of 30 June 2019)

Borrowing entity	Initial Principal	Recourse	Repayment Profile	Maturity	Net carrying amount (US\$m)	Key Covenants	Use of Proceeds
PT Barito Pacific Tbk	US\$250m <sup>(1)</sup>	NA	Amortizing	2019	-	<ul style="list-style-type: none"> <li>Net Debt / EBITDA ≤ 3</li> <li>Security Cover (Daily) Ratio above 2:1</li> </ul>	Used as an advance for the acquisition of Star Energy Group by PT Barito Pacific Tbk (including repayment of previous term-loan of US\$60m).
PT Barito Pacific Tbk	US\$200m	NA	Bullet	2021	198	<ul style="list-style-type: none"> <li>Net Debt / EBITDA ≤ 4.5</li> <li>Security Cover (Daily) Ratio above 2:1</li> </ul>	Used to refinance the US\$250 term-loan.
PT Chandra Asri Petrochemical Tbk	US\$199.8m	NA	Amortizing	2023	147	<ul style="list-style-type: none"> <li>ISCR &gt; 1.75x</li> <li>Debt to Capitalization Ratio ≤ 50%</li> </ul>	Refinancing of US\$265m Term Loan
PT Chandra Asri Petrochemical Tbk	US\$191m	NA	Amortizing	2026	146	<ul style="list-style-type: none"> <li>ISCR &gt; 1.75x</li> <li>Debt to Capitalization Ratio ≤ 50%</li> </ul>	Finance ongoing construction of New Polyethylene Plant with production capacity of 400 KTA.
PT Chandra Asri Petrochemical Tbk	US\$300m	NA	Bullet	2024	285 <sup>(2)</sup>	<ul style="list-style-type: none"> <li>Fixed Charge Coverage Ratio ≥ 2.5</li> </ul>	Capital expenditures, including but not limited to BD expansion, new PE plant, naphtha cracker furnace revamp, PP debottlenecking, new MTBE and Butene-1 plants and feasibility studies for second cracker
PT Chandra Asri Petrochemical Tbk	IDR500,000m Phase I (Series A: IDR150,000m Series B: IDR120,250m Series C: IDR229,750m)	NA	Bullet	2020 / 2022 / 2024	35	<ul style="list-style-type: none"> <li>Ratio of consolidated bearing liabilities and Equity shall not exceed 1:1</li> <li>Ratio of cash flow from operating activities to financial charges &gt; 1.75</li> </ul>	Partial refinancing of outstanding long-term loans
PT Chandra Asri Petrochemical Tbk	IDR500,000m Phase II (Series A: IDR100,000m Series B: IDR100,000m Series C: IDR300,000m)	NA	Bullet	2021 / 2023 / 2025	35	<ul style="list-style-type: none"> <li>Ratio of consolidated bearing liabilities and Equity shall not exceed 1:1</li> <li>Ratio of cash flow from operating activities to financial charges &gt; 1.75</li> </ul>	Partial refinancing of outstanding long-term loans
PT Chandra Asri Petrochemical Tbk	IDR750,000m Phase II	NA	Bullet	2022	53	<ul style="list-style-type: none"> <li>Ratio of consolidated bearing liabilities and Equity shall not exceed 1:1</li> <li>Ratio of cash flow from operating activities to financial charges &gt; 1.75</li> </ul>	Partial refinancing of outstanding long-term loans and capital expenditures

(1) Loan has been fully repaid in January 2019 and obtain new loan of US\$200m

(2) Net of US\$7.4 bonds repurchased by BRPT

# Enlarged Barito Pacific Debt Analysis (cont'd) (as of 30 June 2019)

Borrowing entity	Initial Principal	Recourse	Repayment Profile	Maturity	Net carrying amount (US\$m)	Key Covenants	Use of Proceeds
PT Chandra Asri Petrochemical Tbk	IDR500,000m	NA	Bullet	2021	35	<ul style="list-style-type: none"> <li>Ratio of consolidated bearing liabilities and Equity shall not exceed 1:1</li> <li>Ratio of cash flow from operating activities to financial charges &gt; 1.75</li> </ul>	Partial refinancing of outstanding long-term loans and capital expenditures
PT Chandra Asri Petrochemical Tbk	IDR500,000m (Series A: IDR361,400m Series B: IDR138,600m)	NA	Bullet	2019 / 2021	35	<ul style="list-style-type: none"> <li>Ratio of consolidated bearing liabilities and Equity shall not exceed 1:1</li> <li>Ratio of cash flow from operating activities to financial charges &gt; 1.75</li> </ul>	Partial refinancing of outstanding long-term loans
Star Energy Geothermal Darajat II Ltd, Star Energy Geothermal Salak Ltd	US\$1,250m (Tranche A)	Limited recourse to project company	Balloon	2021	1,014	<ul style="list-style-type: none"> <li>Leverage ratio <math>\leq 6x^{(1)}</math></li> <li>DSCR <math>\geq 1.2x</math></li> <li>Senior Interest Cover <math>\geq 3x</math></li> <li>Debt:Equity <math>\leq 70:30^{(2)}</math></li> </ul>	Utilized in 2017: Tranche A (US\$1,250m) to fund the acquisition of Chevron's GPO business and to fund the reserve accounts  Can be utilized in 2021: Tranche B (US\$700m) to refinance Tranche A and to fund the reserve accounts
Star Energy Geothermal (Wayang Windu) Ltd	US\$580m	Limited recourse to project company	Amortizing	2033	546	<ul style="list-style-type: none"> <li>DSCR <math>\geq 1.1x</math></li> </ul>	Repay all outstanding bank loan and fund Debt Service Account and the Major Maintenance and Construction Reserve Account.
Barito Wahana Lestari	US\$125m	NA	Amortizing	2021	125	<ul style="list-style-type: none"> <li>Current ratio <math>\geq 1.0x</math> after BWL commercial operation</li> <li>Max Debt Equity ratio: 2.5x</li> <li>Min Debt Service Coverage of 100% after BWL commercial operation</li> </ul>	Capital expenditure financing related to the construction of Java 9 and 10 Steam Power Plant

**CAP's credit ratings: Ba3 / BB- / BB- / AA- (Moody's / Fitch / S&P / Pefindo)**

**Star Energy's credit ratings: Ba3 / BB- (Moody's / Fitch)**

(1) Leverage ratio  $\leq 6x$  from the initial testing date until the testing date falling immediately after the first anniversary; leverage ratio  $\leq 5.5x$  after the first anniversary until the testing date falling immediately after the third anniversary; leverage ratio  $\leq 4.5x$  thereafter  
(2) Debt : Equity  $\leq 70:30$ , after the final Tranche A repayment date 50:50



Appendix

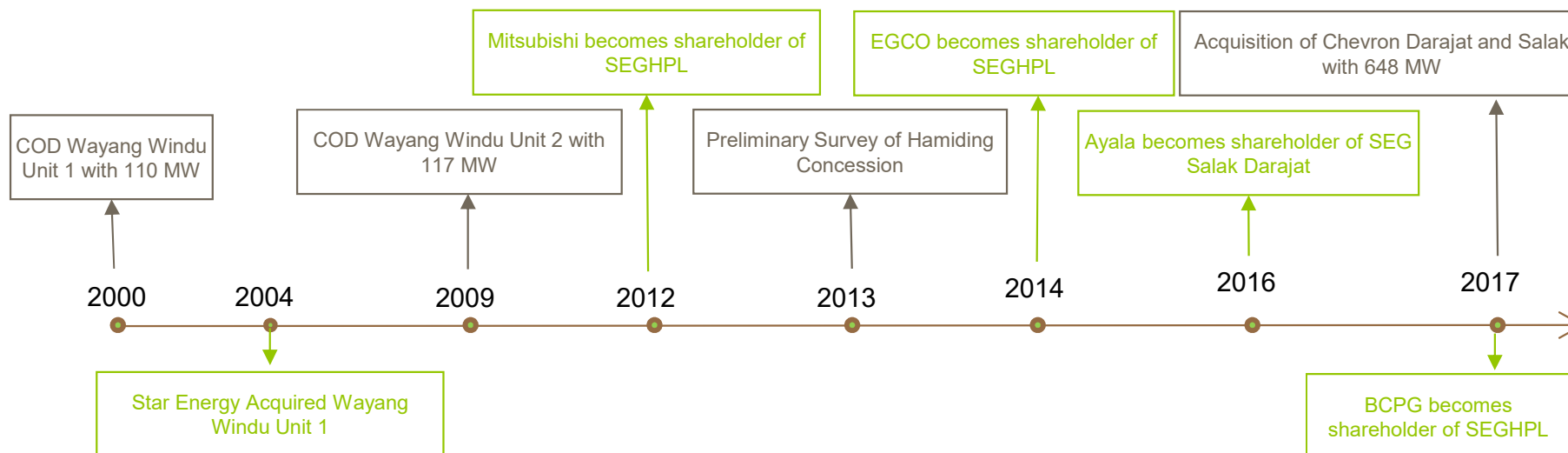
# ACQUISITION OF STAR ENERGY

- ✓ Consolidate leadership positions in the Indonesian energy market
- ✓ Transform Barito Pacific into an integrated energy group with full operational capabilities
- ✓ Secure long-term contracted cash flows from energy assets
- ✓ Diversification of sources of earnings
- ✓ Gain exposure to geothermal assets at an attractive valuation
- ✓ Gain proven operational experience and development track record through Star Energy management team
- ✓ Increase ability to attract and retain key talent by offering broader career development opportunities across the Group
- ✓ Strengthen and diversify growth opportunities pipeline



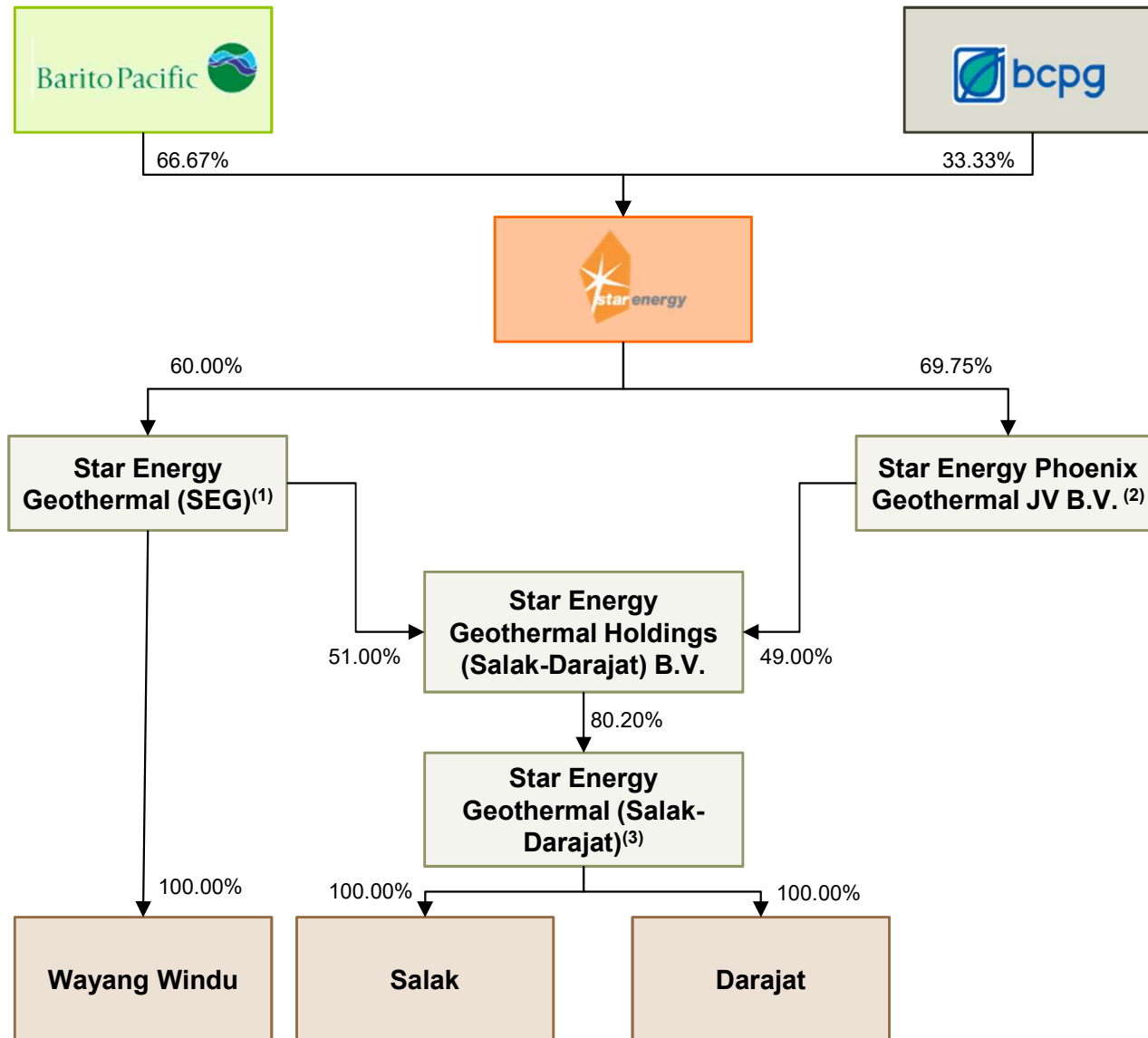
**A strategic combination to create the largest integrated energy player in Indonesia and drive shareholder value**

# Star Energy Group Milestone



Project	Location	COD	Capacity	Category	Expiry
Darajat U1	Garut, West Java	1994	55 MW	Steam	2041
Darajat U2	Garut, West Java	2000	95 MW	Integrated Power Generation	2041
Darajat U3	Garut, West Java	2007	121 MW	Integrated Power Generation	2047
Salak U1 & U2	Gunung Salak, West Java	1994	2 x 60 MW	Steam	2040
Salak U3	Gunung Salak, West Java	1997	60 MW	Steam	2040
Salak U4 - U6	Gunung Salak, West Java	1997	3 x 65.6 MW	Integrated Power Generation	2040
Wayang Windu U1	Bandung, West Java	2000	110 MW	Integrated Power Generation	2039
Wayang Windu U2	Bandung, West Java	2009	117 MW	Integrated Power Generation	2039
Sekincau	West Lampung, Sumatera			Preliminary Survey & Exploration	
Hamiding	North Halmahera, Maluku			Preliminary Survey & Exploration	

# Effective Shareholdings in Star Energy



## Barito Pacific's Effective Interests

### Star Energy's effective shareholding in:

Wayang Windu 60.00% x 100.00% = **60.00%**

Salak 60.00% x 40.90% x 100.00% +

Darajat 27.41% x 100.00% = **51.95%**

### Barito Pacific's effective shareholding in:

Wayang Windu 60.00% **40.00%**

Salak 51.95% x 66.67% = **34.64%**

Darajat 51.95% **34.64%**

### Barito Pacific's net capacity:

Asset	100% Capacity	Net Capacity
Wayang Windu	227 MW x 40.00% =	<b>91 MW</b>
Salak	377 MW x 34.64% =	<b>131 MW</b>
Darajat	271 MW	<b>94 MW</b>
<b>Total</b>		<b>316 MW</b>

(1) EGCO and Mitsubishi Corp each holds 20.00% stake

(2) EGCO holds 30.25% stake

(3) AC Energy holds 19.80% stake

# Acquisition of a 66.67% stake in Star Energy

## Financial impacts of the transaction

- Total Purchase Consideration of US\$755 <sup>(1)</sup> million
  - US\$3.2bn Implied Enterprise Value <sup>(2)</sup>
  - 9.1x 2017 EBITDA <sup>(3), (4)</sup>
  
- Expected synergies
  - Lower corporate development costs and retain talent: cross-leverage on management talent pool and experienced executive professionals to develop existing and new businesses while providing individuals with opportunities for career development
  - Lower capex costs: best practice sharing in capex and project management
  - Lower cost of funding:
    - Stable cash flows from Star Energy to reduce volatility in expected leverage ratios of the Group
    - Enlarged market capitalization of the Group to improve stock liquidity and credit rating of the parent entity

FYE 31 December 2017 (US\$m)	EBITDA <sup>(4), (5)</sup>	Net Income	Net Debt <sup>(6)</sup> / (Net Cash)	Net Debt <sup>(6)</sup> / EBITDA
Barito Pacific	550	280	32	0.1x
<i>Attributable to Barito Pacific Shareholders</i>	-	118	-	-
SEGHPL	350 <sup>(3)</sup>	91 <sup>(3)</sup>	1,691	4.8x <sup>(3)</sup>
<i>Attributable to SEGHPL Shareholders</i>	-	50	-	-
<i>Attributable to Barito Pacific Shareholders</i>	-	33	-	-
<b>Pro-forma Consolidated</b>	<b>900</b>	<b>370</b>	<b>1,723</b>	<b>1.9x</b>
<i>Attributable to Barito Pacific Shareholders</i>	-	151	-	-

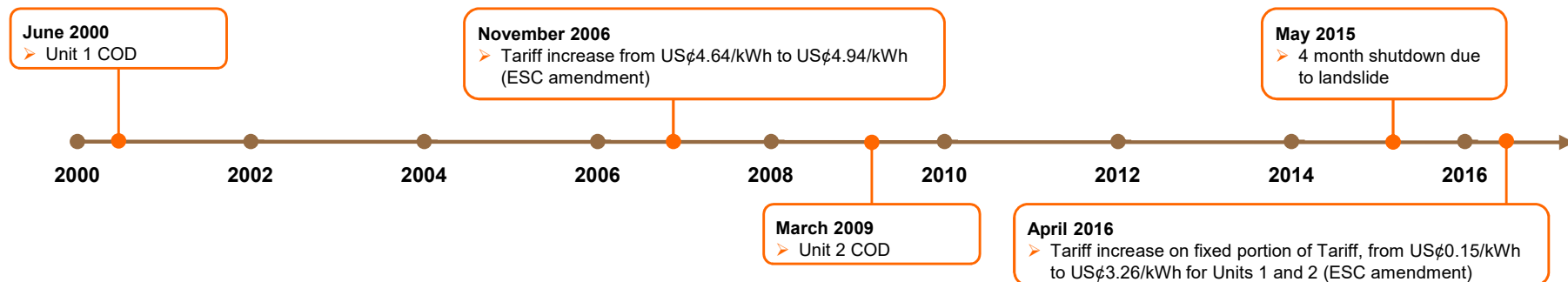
**Star Energy's 2017 contribution on a pro forma basis to the consolidated group was 39% of EBITDA <sup>(3)</sup> and 24% of Net Income <sup>(3)</sup>**

(1) Prior to any price adjustment  
 (2) Enterprise Value is the sum of Equity Value of US\$1,133m (calculated as acquisition price of US\$755m divided by stake acquired of 66.67%), Net Debt of US\$1,691m and Non-controlling Interests of US\$342m  
 (3) SEGHPL completed the acquisition of Salak and Darajat from Chevron on 31 March 2017; hence for the period 1 January 2017 to 31 December 2017, the EBITDA and Net Income contribution from Salak and Darajat was effective only from 1 April 2017 to 31 December 2017; excludes discontinued operations  
 (4) EBITDA of Star Energy is defined as profit/(loss) for the period from continuing operations plus (i) income tax expense, (ii) finance costs, (iii) depreciation and amortization, (iv) foreign exchange loss, net, (v) loss on redemption of senior secured notes, (vi) write-off of pre-operating cost and (vii) write-off of property on operating lease, less interest income and foreign exchange gain, net  
 (5) EBITDA of Barito Pacific is defined as net profit for the period before finance costs – net of interest income, income tax expense - net, depreciation and amortization, adjusted for unrealized foreign exchange loss/(gain) - net, loss/(gain) on derivative financial instruments, and share in loss of an associate and joint venture - net  
 (6) Net debt is total debt minus cash and cash equivalents (excluding restricted cash). Total debt includes bank loans and bonds payable

Appendix

# STAR ENERGY OPERATIONS

- The Wayang Windu geothermal power project is situated near the town of Pangalengan in West Java, Indonesia
- The 12,950 ha contract area contains plantations and protected forest reserves. Wayang Windu project above-ground structures only utilize 128 ha
- Shareholders of Wayang Windu include
  - EGCO (20% stake acquired in November 2014 for US\$215m)
  - Mitsubishi (20% stake acquired in October 2012 for US\$210m)
- ESC amendment to increase the energy tariff earned by Units 1 and 2 by US¢3.11/kWh, effective April 2016
- The most recent geothermal reservoir modeling of Wayang Windu (performed in December 2016 by an independent geothermal resources consultant, GeothermEx, and confirmed by GeothermEx in February 2018), indicates that Wayang Windu energy reserves going forward are sufficient to support generation of Unit 1 and Unit 2 at or near 227 MW gross, with sufficient geothermal energy reserves to support output at 280 MW for 30 years and 390 MW for 20 years



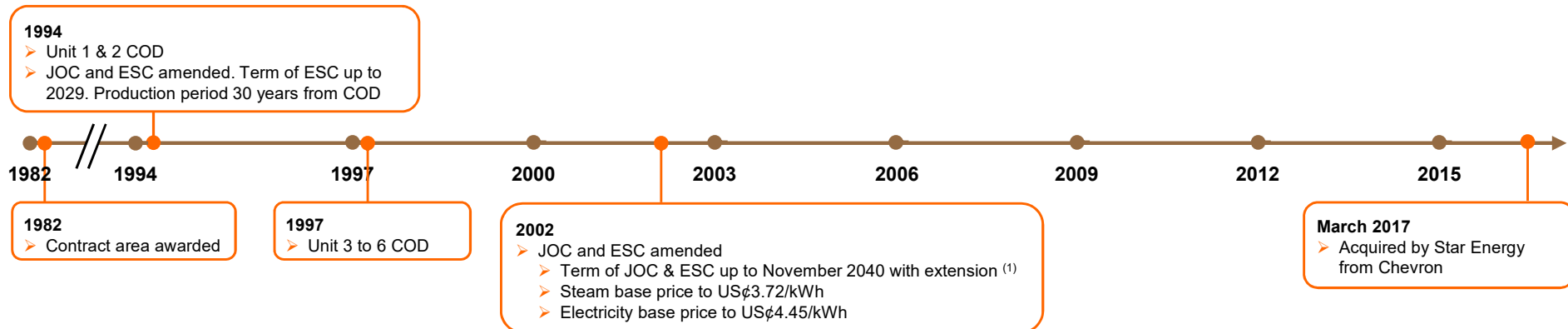
Key Facility Metrics	Unit 1	Unit 2
Installed Capacity (MW)	110	117
Turbine / Generator Manufacturer	Fuji Electric	Fuji Electric
COD	June 2000	March 2009
Production Wells	27	
Injection Wells	5	
Abandoned Wells	6	
Monitoring Wells	13	
Slimhole Wells	5	



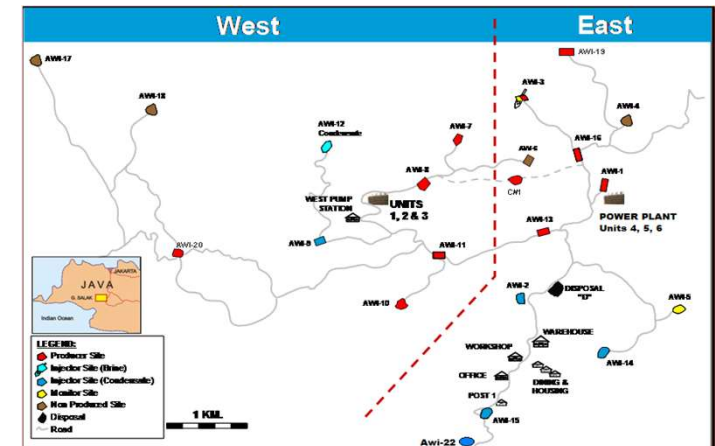
# Salak

## Asset overview

- The Salak geothermal power project is situated near Sukabumi regency and Bogor regency in West Java, Indonesia
- The 10,000 ha contract area contains a nature reserve and protected forest reserves. Above-ground structures only utilize 236 ha
- The Salak project is Indonesia's largest geothermal field with installed capacity of 377 MW
  - Unit 1 to 3: Star Energy operates 3 x 60 MW of steam production capacity (the steam is utilized by PLN who owns and operates the Gunung Salak Power Plant)
  - Unit 4 to 6: Star Energy operates 3 x 65.6 MW of integrated geothermal power generation
- In 2016, an independent geothermal resources consultant carried out a technical due-diligence evaluation of the Salak geothermal asset, in support of the acquisition by Star Energy
- The most recent independent evaluation of the Salak geothermal resource and well field, and their expected performance (undertaken by an independent geothermal resources consultant, GeothermEx, in 2016) concluded that the Salak project can be maintained at its current level of generation through 2040 and for some time thereafter, with an appropriate program of drilling make-up wells to offset well productivity decline



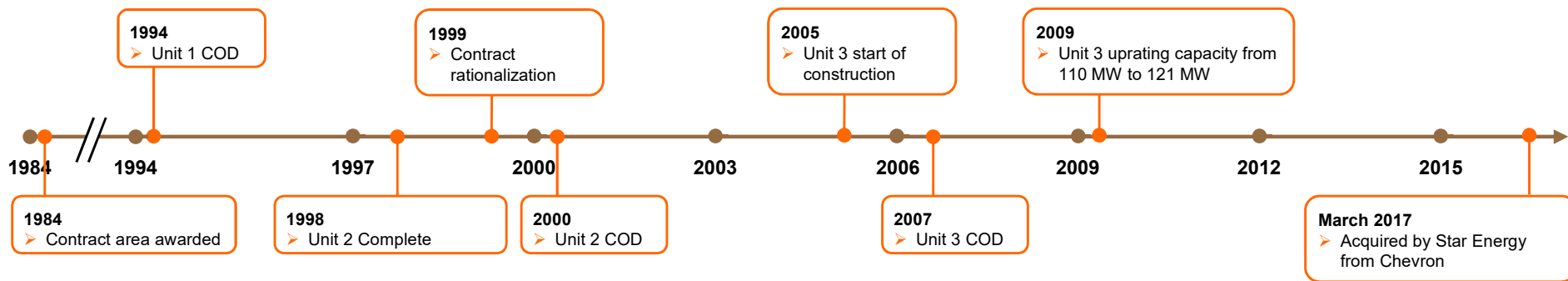
Key Facility Metrics	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Installed Capacity (MW)	60	60	60	65.6	65.6	65.6
Turbine / Generator Manufacturer				Fuji Electric	Fuji Electric	Fuji Electric
COD	March 1994	June 1994	July 1997	October 1997	November 1997	November 1997
Production Wells				45		
Inactive Wells				28		
Abandoned Wells				12		
Monitoring Wells				6		
Slimhole Wells				19		



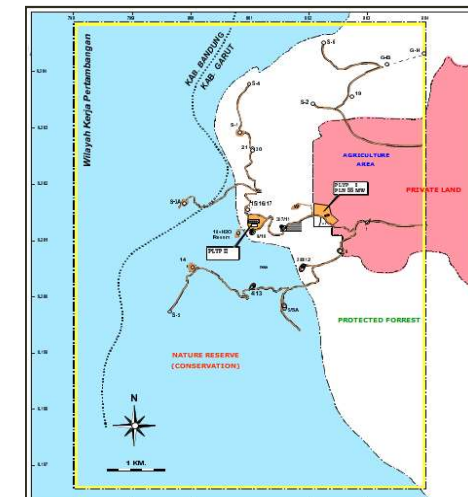
(1) The 10-year extension is an option by delivering a notice to each other Party and no consent from any Party is required



- The Darajat geothermal power project is situated near Garut regency and Bandung regency in West Java, Indonesia
- The 5,000 ha contract area contains a nature recreational park, protected forest and private land. Above-ground structures only utilize 85.7 ha
- The Darajat project is Indonesia's second largest geothermal field with installed capacity of 271 MW and one of the world's largest vapor dominated reservoirs
  - Unit 1: Star Energy operates 55 MW of steam generation capacity (the steam is utilized by PLN for its neighbouring power plant)
  - Unit 2 & 3: Star Energy operates 216 MW of integrated geothermal power generation
- The most recent independent evaluation of the Darajat geothermal resource and well field, and their expected performance (undertaken by an independent geothermal resources consultant, GeothermEx, in 2016) concluded that the Darajat project can be maintained at its current level of generation through 2041 (the term of the ESC for Unit 1 and Unit 2), with an appropriate program of drilling make-up wells to offset well productivity decline. After 2041 it is projected that steam supply will be adequate to maintain the current generation level of Unit 3 through 2047 (the term of the ESC for Unit 3)

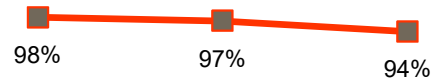


Key Facility Metrics	Unit 1	Unit 2	Unit 3
Installed Capacity (MW)	55	95	121
Turbine / Generator Manufacturer		Mitsubishi / Fuji	Mitsubishi / Fuji
COD	October 1994	June 2000	May 2007
Production Wells		30	
Abandoned Wells		10	
Monitoring Wells		5	
Injection Wells		4	



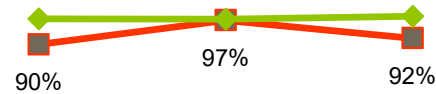
## Average Net Capacity Factor (1)

### Wayang Windu



FY-2017 FY-2018 1H-2019

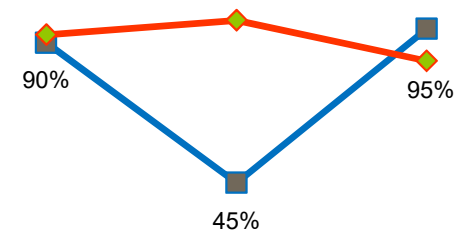
### Salak (2)



FY-2017 FY-2018 1H-2019

■ Units 1-3 ◆ Units 4-6

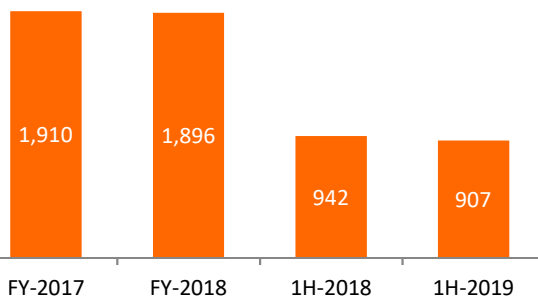
### Darajat (3)



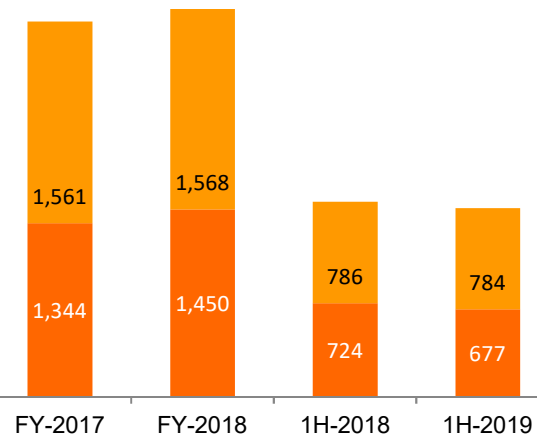
FY-2017 FY-2018 1H-2019

■ Unit 1 ◆ Units 2-3

## Net Dispatch (GWh)

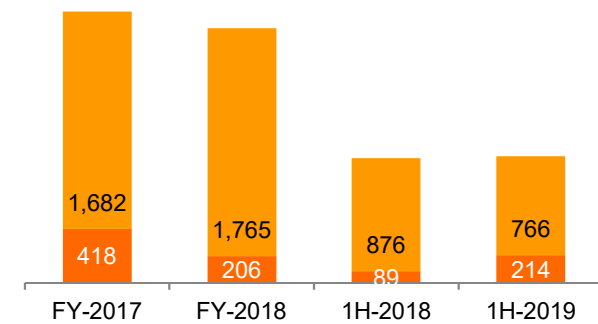


FY-2017 FY-2018 1H-2018 1H-2019



FY-2017 FY-2018 1H-2018 1H-2019

■ Units 1-3 ■ Units 4-6



FY-2017 FY-2018 1H-2018 1H-2019

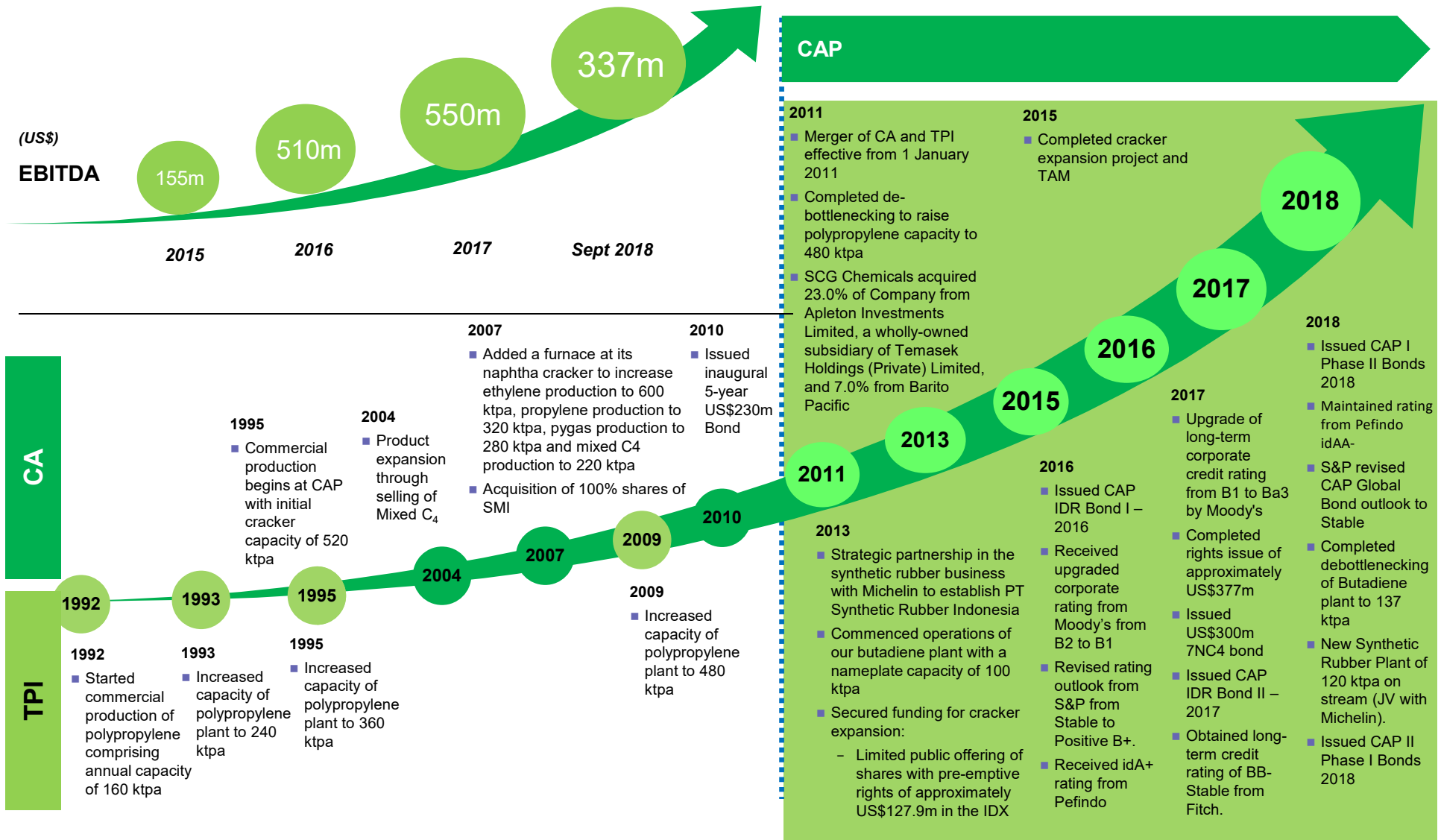
■ Unit 1 ■ Units 2-3

- (1) Net capacity factor means the ratio of the actual output of the relevant geothermal turbine-generator unit to the theoretical output assuming full capacity usage (excluding planned maintenance)
- (2) Salak Units 1-3 lower generation in 2019 mainly due to planned Simple Inspection of Unit 1 totalling 31 days to repair the required solenoid valve and to address higher curtailment and grid problem.
- (3) Darajat Unit 1 power plant is operated by PT Indonesia Power, a subsidiary of PLN, Star Energy provides steam on a take-or-pay basis up to 80%. There were 3.5 days unplanned shutdown in Jan 2018. The plant was also shutdown from 18 March 2018 up to 30 Sept 2018 due to high vibration.

Appendix

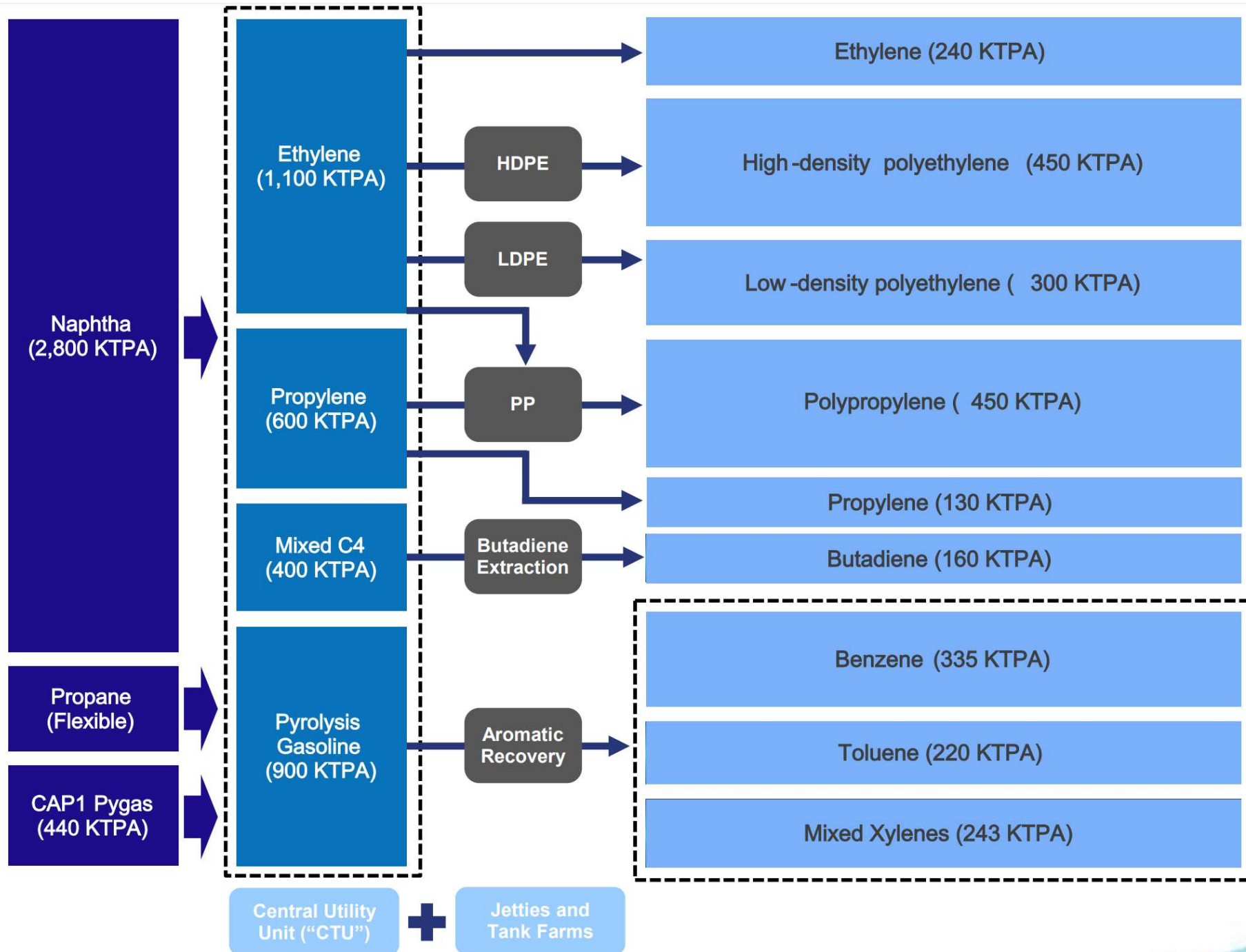
# **CHANDRA ASRI PETROCHEMICAL OPERATIONS**

# Track Record of Successful Growth



Track record of achieving operational and structured growth

# CAP 2 Product Flows and Production Capacities



# Growth Strategy Chandra Asri Petrochemical (continued)

## Strategic Growth via Expansion and Debottlenecking (Exclude CAP 2)

Project Description	Schedule		CAPEX (US\$m)	Funding Status	Capacity Increase	Cumulative Capacity
	Start	Proposed Start up				
<b>Current Production Capacity</b>						<b>3,458 KT/A</b>
PP Debottlenecking	4Q - 17	3Q – 2019	39.5	Fully Funded	110 KT/A	110 KT/A
New Polyethylene Plant	1Q – 2018	4Q – 2019	380.0	Fully Funded	400 KT/A	400 KT/A
<b>Production Capacity at the end of 2019</b>						<b>3,968 KT/A</b>
Furnace Revamp	3Q – 2018	1Q – 2020	48.0	Fully Funded	40 KT/A C2; 20 KT/A C3	60 KT/A
MTBE and Butene – 1 Plant	Not yet started	3Q – 2020	114.0	Fully Funded	127 KT/A MTBE; 43 KT/A B1	173 KT/A
<b>Production Capacity at the end of 2020</b>						<b>4,201 KT/A</b>