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26 March 2017

## Indonesia Materials

Reuters TPIA.JK  
Bloomberg TPIA IJ

### Priced on 23 March 2017

Jakarta Comp @ 5,563.8

**12M hi/lo** Rp23,850/3,550

**12M price target** Rp30,100  
**±% potential** +27%

**Shares in issue** 3,287.0m  
**Free float (est.)** 3.2%

**Market cap** US\$5,853m

**3M average daily volume**  
Rp53.4bn (US\$4.0m)

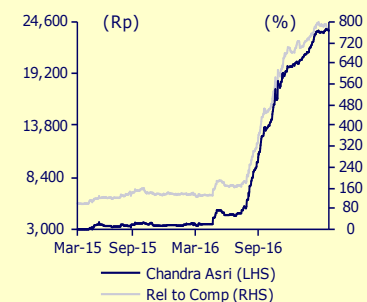
**Foreign s'holding** 38.3%

### Major shareholders

PT Barito Pacific Tbk 45.0%  
Siam Cement PCL 30.6%

### Stock performance (%)

	1M	3M	12M
Absolute	0.9	17.0	568.3
Relative	(2.6)	5.7	483.1
Abs (US\$)	1.0	18.1	560.8



Source: Bloomberg

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## Home field advantage

### Great position to address Indonesia's structural shortage

Chandra Asri (TPIA IJ) is by far Indonesia's largest petrochemical company. While strong spreads magnified its capacity upgrade in 2015, future upgrades will focus on downstream products to improve its overall ASP. Structural shortages in Indonesia also provide a boost as imported polymers are priced at a 10%-25% premium over the global benchmark. Even though the industry is susceptible to spread movements, the company is in the driver's seat to capitalize on the country's long-term shortage. We value the company at a target price of Rp 30,100/share and initiate coverage with a BUY recommendation.

### Better liquidity as strong spreads amplify improved capacity

TPIA's timely capacity upgrade was magnified as high spreads lifted the company's earnings c.11x from 2015 to 2016. The strong growth saw its share price gain 499% last year making it the 12<sup>th</sup> largest market cap company in the country. Previously, liquidity was an issue since only 4% was floated. However, with the company its planning to issue rights for 280m new shares which could dilute existing shareholders by 7.85%; this concern is partly addressed.

### Indonesia is paying a premium for imports due to plant shortages

Indonesia is paying a 10%-25% premium for the Ethylene/Propylene Polymer products it imports. Imports grew 3.4x/4.1x from 10 years ago as domestic capacity has been insufficient to meet strong demand. Over the next three years TPIA will continue to upgrade its downstream product capacity to boost both volume & ASPs, partially offsetting the higher expected naphtha prices.

### Spreads a risk, but Indonesia's structural shortage an opportunity

Similar to every other petrochemical company, TPIA is susceptible to shrinking spreads should naphtha prices rally without corresponding improvements in olefin prices. However, what makes TPIA unique is it is the biggest player in a severely underserved domestic market which could absorb its production even if it grew multiples by its current size.

### Initiating coverage with an Rp 30,100/sh target price and BUY rating

We value the company using a DCF (WACC 6.5%, TG 3%) and FCF model out to 26CL. Over the course of our forecast, we expect its spread to gradually decline toward the average aggregate spread from the previous 10 years. Our implied 18CL EV/Ebitda is 10x and PE 17x. We initiate coverage of the stock with a target price of Rp 30,100/sh and BUY recommendation.

### Financials

Year to 31 December	15A	16A	17CL	18CL	19CL
Revenue (US\$m)	1,378	1,930	2,281	2,396	2,507
Net profit (US\$m)	26	300	315	323	323
EPS (US¢)	0.80	9.13	9.59	9.83	9.84
CL/consensus (1) (EPS%)	-	-	-	-	-
EPS growth (% YoY)	44.4	1,039.1	5.1	2.4	0.1
PE (x)	221.2	19.5	18.2	17.2	17.1
Dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF yield (%)	(1.7)	7.0	3.4	4.7	3.9
PB (x)	6.6	5.2	4.1	3.3	2.8
ROE (%)	3.0	29.8	24.8	20.9	17.8
Net debt/equity (%)	50.8	11.1	(1.7)	(14.2)	(20.9)

Source: CLSA

The only naphtha cracker in the country for polymer

## The biggest in Indonesia

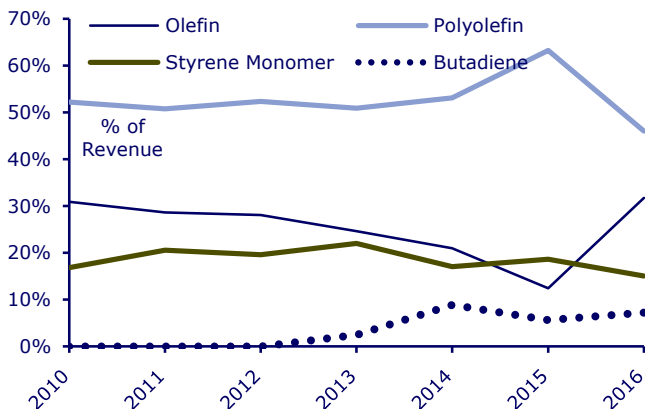
Chandra Asri (TPIA IJ) is Indonesia’s largest Petrochemical producer. In short, it makes different types of intermediate and finished products used to make plastics and polymers. It has significant value add compared to peers because it makes the intermediary products itself thanks to its naphtha cracker.

At the moment it has the only active naphtha cracker used for polymer production in the country. Therefore, it is in the best position to benefit from the shortage of domestic supply which results premium import price. The produces different types of chemicals that could be categorized into four groups;

1. **Olefin** (32% of revenue)
  - o 4 products; Ethylene, Propylene, Pygas and Mixed C4
  - o Need Naphtha as raw material to make Polyolefin
  - o Product is used as raw material to make polyolefin or sold directly to other petrochemical companies
  
2. **Polyolefin** (46% of revenue)
  - o 2 products; Polyethylene and Polypropylene
  - o Need Ethylene and Propylene as a feed to make Polyolefin
  - o Used as raw material to make consumer packaging
  
3. **Styrene Monomer** (15% of revenue)
  - o 2 products; Styrene Monomer and Toluene
  - o Need Ethylene and Benzene to make Styrene Monomer
  - o Used as raw material to make polystyrene and synthetic rubber (along with Butadiene)
  
4. **Butadiene** (7% of revenue)
  - o 2 products; Butadiene and Raffinate
  - o Need Mixed C4
  - o Used as raw material to make synthetic rubber (along with Styrene Monomer)

Figure 1

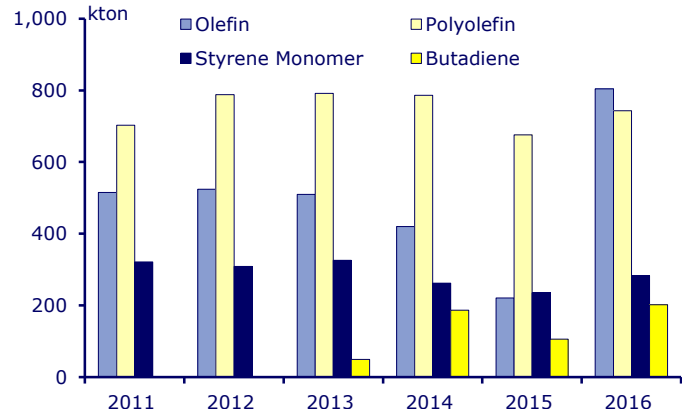
Revenue breakdown by product



Source: CLSA, Chandra Asri

Figure 2

Sales tonnage breakdown by product



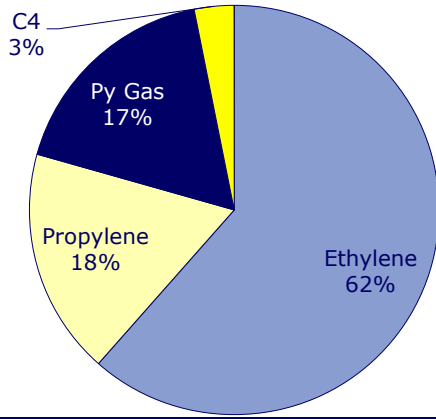
Source: CLSA, Chandra Asri

Within the Olefin products, Ethylene contributes the largest portion of the revenue. The ethylene and propylene sold are the ones in excess of the

volume needed to produce polyethylene and polypropylene. The C4 amount is smaller because the bulk of the C4 is used to make Butadiene.

Figure 3

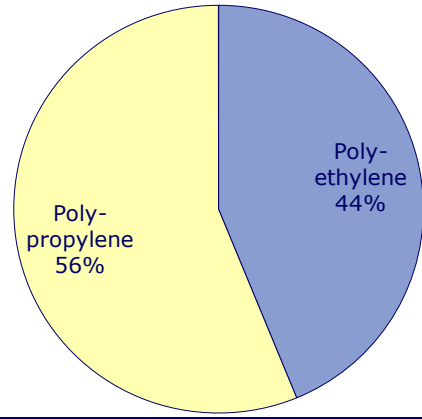
2016 revenue breakdown of olefin by products



Source: CLSA, Chandra Asri

Figure 4

2016 revenue breakdown of polyolefin by products

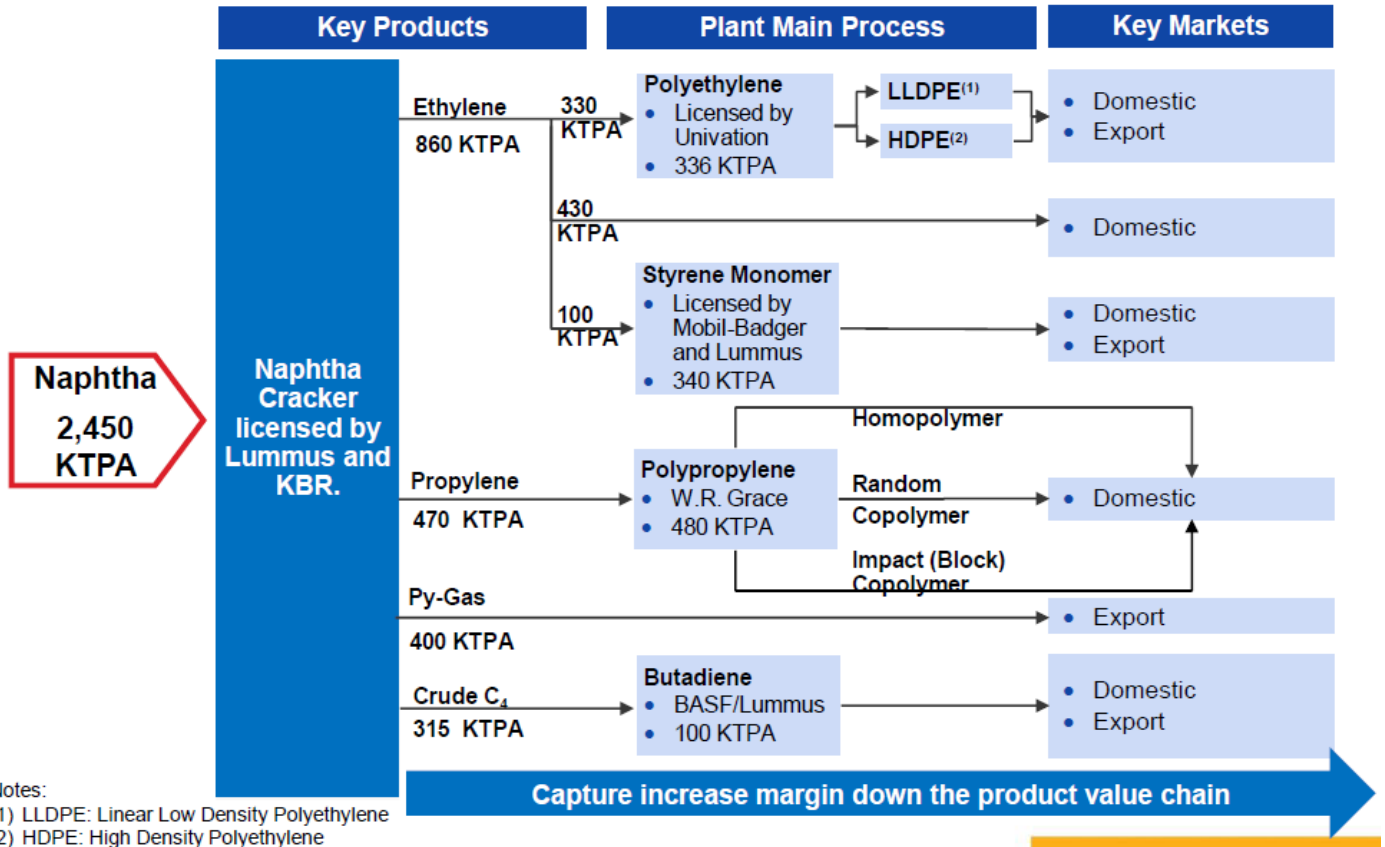


Source: CLSA, Chandra Asri

The ultimate goal for the company is to produce as much downstream products as it can. In the next few years, the company plans to upgrade its Polyethylene (from 336ktpa to 400 ktpa in 20CL) and Polypropylene (from 480 ktpa to 560 ktpa in 18CL) production capacity.

Figure 5

Operational flow, more upgrades in the coming years



Notes:  
 (1) LLDPE: Linear Low Density Polyethylene  
 (2) HDPE: High Density Polyethylene

Source: Chandra Asri

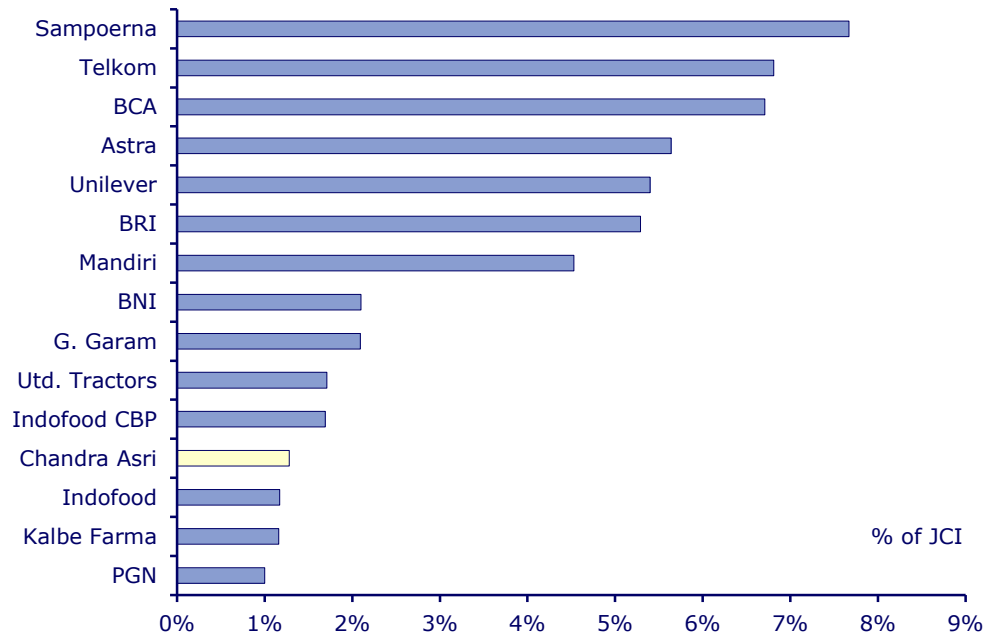
**Strong jump to 12<sup>th</sup> position in a year**

The company surprised the market when it significantly outgrew the JCI Index, (499% vs 15%) for 2016. The rally was partly driven by the capacity upgrade and strong spread expansion due to lower naphtha prices.

Thanks to the strong rally, TPIA is now the number 12 market cap company in the index. It now accounts for 1.3% of the JCI.

Figure 6

**15 largest companies on the JCI by market cap**



Source: Bloomberg

**Rights issue to increase liquidity**

Despite the strong rally market participation was limited because liquidity was low. Only 4.2% of the stock was floated to the market. Barito Pacific (BRPT IJ) and its affiliates own the majority of 65.2%, while SCG Chemical own 30.6%.

SCG Chemical acquired the stake in 2011 from an affiliate of Temasek (22.9%) and Barito Pacific (7.7%) for US\$442m. This was equivalent to Rp 4,088/sh.

Fortunately, the liquidity problem is going to be addressed soon. In a statement released to the public on Friday 24 March, the company intend to issue a maximum of 280,000,000 new shares with Pre-emptive rights. This is equivalent to 7.8% of the new total shares.

In the statement, the company said that it is issuing new shares to fulfil the listing requirement from the exchange that need non-controlling and non-principal shareholders to have at least 7.5% of the total shares.

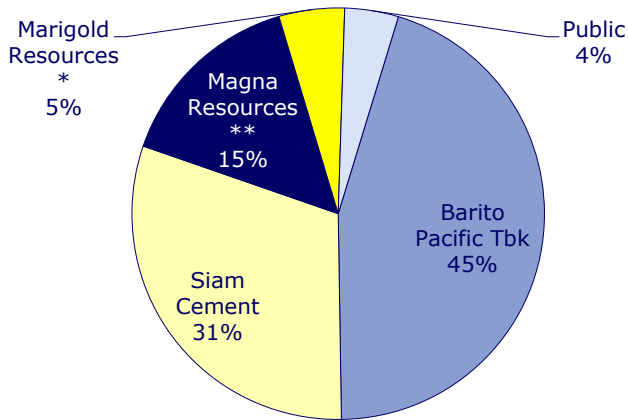
The company also said that proceed from the share issuance will be used for capex. Using the closing price on 24 March of Rp 23,850/sh, the amount to be raised would be Rp 6.68 trillion. This is equivalent to US\$501m, if we used Rp 13,327/USD.

**Possible 7.85% dilution through the proposed rights issue**

**Improve liquidity and pay for Capex**

Figure 7

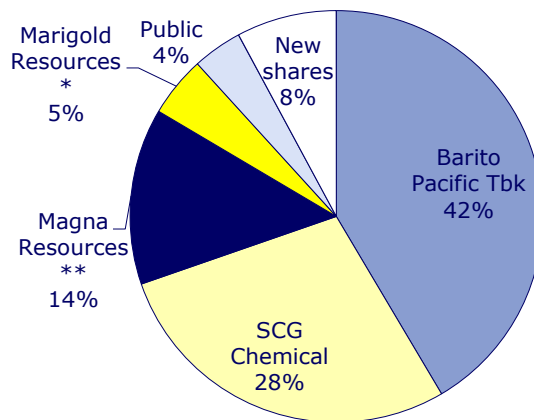
**Shareholders breakdown: before rights issue**



Source: Chandra Asri, \* Marigold Resources is subsidiary of Barito Pacific, \*\* Magna Resources is a shareholder of Barito Pacific,

Figure 8

**Shareholders breakdown: post-rights issue**



Source: Chandra Asri. \* Marigold Resources is subsidiary of Barito Pacific, \*\* Magna Resources is a shareholder of Barito Pacific,

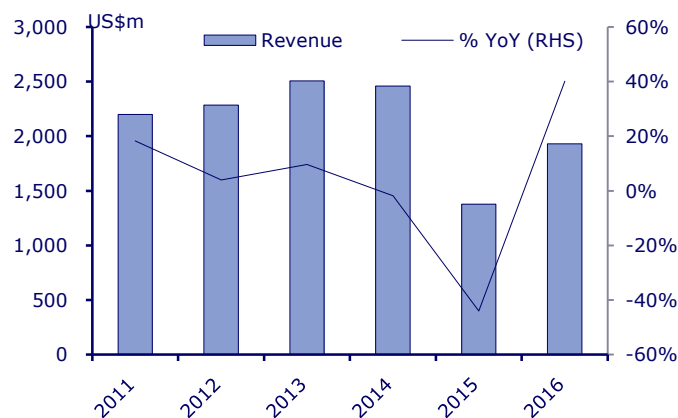
**Overview of operation in 2016**

Looking beyond liquidity, the company had a strong 2016. Considering the fairly technical nature of the business, we will explain in broad strokes first before going into detail.

In 2016, Revenue grew 40% YoY as cracker shutdown in parts of 2015 lead to lower base effect. The cracker was shutdown to allow cracker and ethylene upgrade to take place. As the upgrade was complete, sales tonnage increased by 23% compared 2014, the year prior the shutdown.

Figure 9

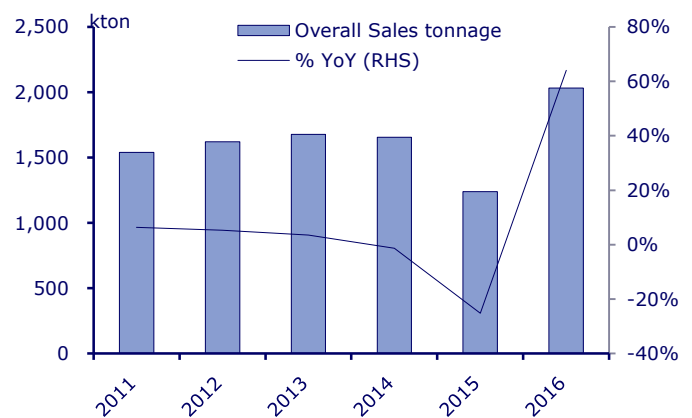
**Revenue: up 40% YoY due to low base in 2015**



Source: CLSA, Chandra Asri

Figure 10

**Overall sales tonnage: up 63% YoY on lower base in 2015 due to shutdown**



Source: CLSA, Chandra Asri

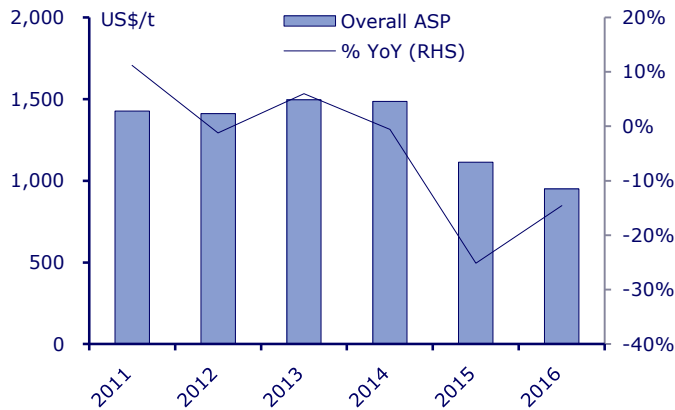
The strong volume offset the decline in overall ASP (-17% YoY) for the company. Much like other oil derived products, prices of petrochemical products that the company produced were also dragged lower as crude prices fell. Therefore, even though revenue grew 40% YoY, it was still -22% below the revenue in 2014.

But in petrochemical, the shift in spread means more than the price than makes a big difference. Lower crude prices also dragged the price of naphtha, the main raw material used in production.

Plus, the completion of the ethylene capacity upgrade means the company no longer need to buy as much ethylene to feed into its polyethylene plant. As a result, the average cost of raw material and finished product per ton came down -30% YoY.

Figure 11

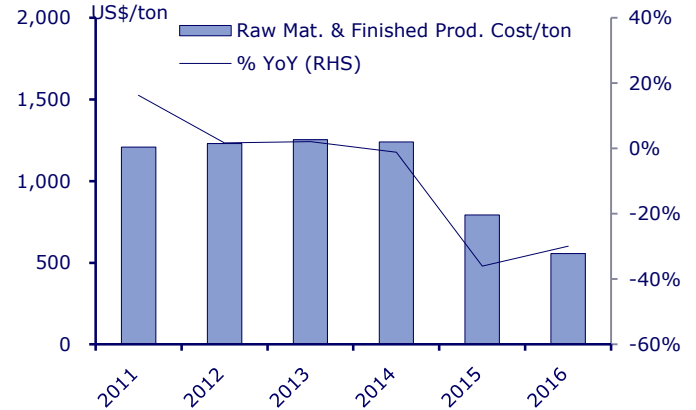
**Overall ASP: Decline in products prices as crude dropped**



Source: CLSA, Chandra Asri

Figure 12

**Cost per ton: Lower naphtha price and ethylene purchase volume**



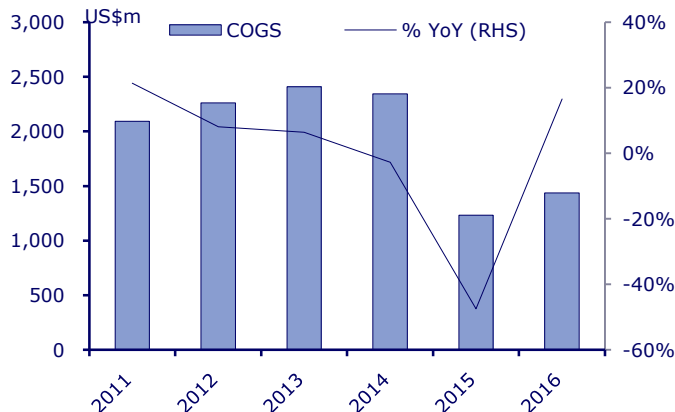
Source: CLSA, Chandra Asri

Raw material and movement in finished products account for 71% and 8% of the company's COGS. So, even though manufacturing cost (19% of COGS) grew 26% YoY, overall COGS decline 17% YoY.

Within raw material, naphtha account for 85% of raw material cost even though prices of naphtha fell. Benzene is used to produce Styrene Monomer which is later used to produce synthetic rubber (Styrene Butadiene).

Figure 13

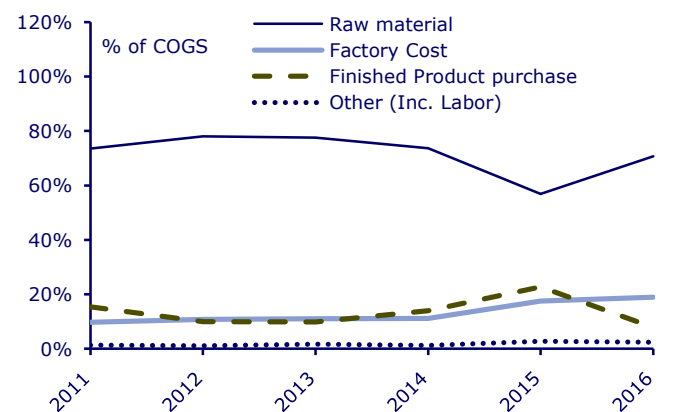
**Cogs: Only up by 17% YoY due to lower naphtha price**



Source: CLSA, Chandra Asri

Figure 14

**Average spread: significant expansion**



Source: CLSA, Chandra Asri

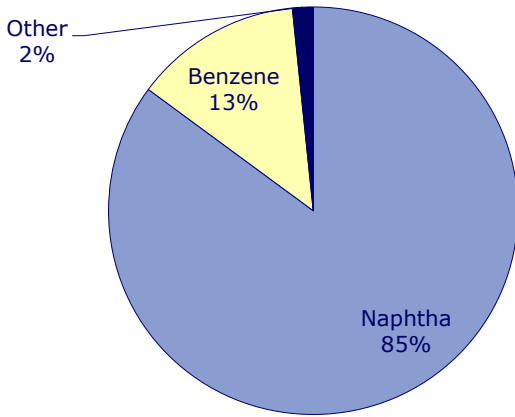
Given its weight, the cost is most sensitive to naphtha prices. Which means the overall spread is also dependent on naphtha prices. Naphtha is a refined petroleum product which is derived from crude after it went through refining. Since most producers in the region have to import its naphtha supply, the impact of naphtha prices is similar across producers.

The key here is despite the decline in ASP, the decline in cost was even faster. Because of that spread expanded by 23% YoY in 2016. Spread has

consistently improved thanks to widening ethylene-naphtha and polyethylene-naphtha spread and a series of capacity upgrades.

Figure 15

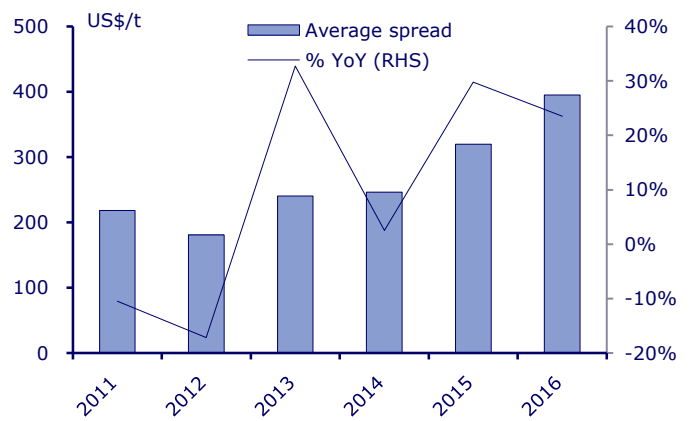
**Breakdown of raw material costs**



Source: CLSA, Chandra Asri

Figure 16

**Average spread: significant expansion**



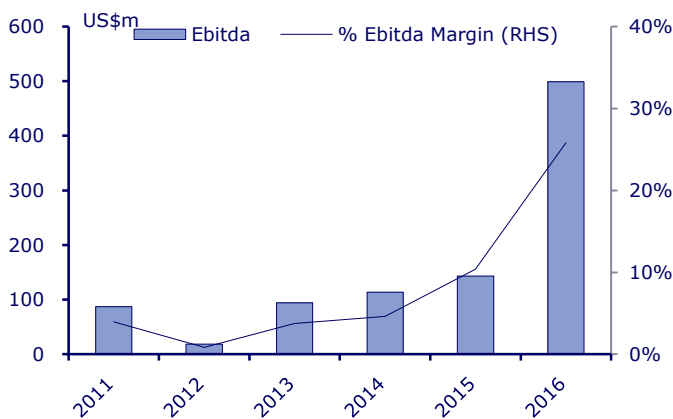
Source: CLSA, Chandra Asri

As a result of the widening spread and operating leverage, Ebitda grew 249% YoY as Ebitda margin increased from 10% to 26%. Meanwhile, NPAT grew c.11x YoY as net margin improved from 2% to 16%.

We may see slight spread expansion in 17CL as production of polyolefin products increases. The company managed to get premium price for polyolefin in Indonesia given the lack of supply.

Figure 17

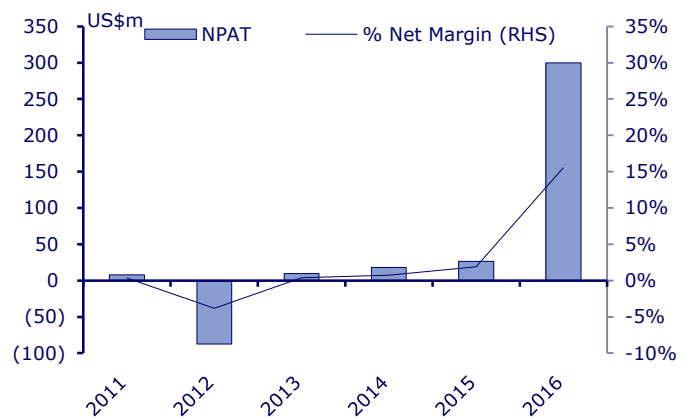
**Ebitda: 249% YoY growth on widening spread**



Source: CLSA, Chandra Asri

Figure 18

**Npat: 11x growth from a very low base**



Source: CLSA, Chandra Asri

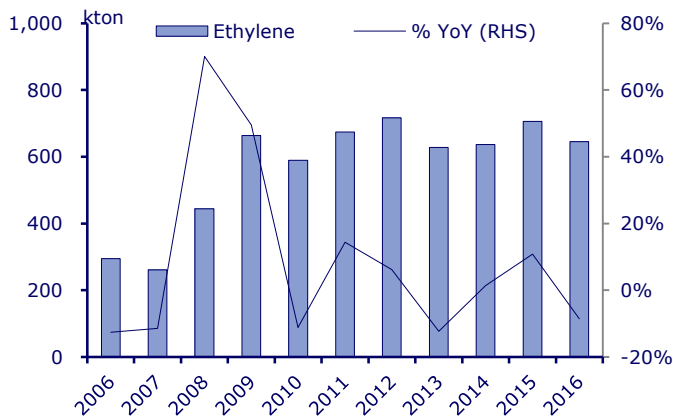
## Shortage means premium pricing

Indonesia is a net importer of crude which is the raw material for naphtha. The country also lacks enough refineries and has to import refined petroleum including naphtha. Therefore, it comes as no surprise that the country is also a net importer of olefins and its derivatives.

Over the past 10 years, imports of both ethylene and propylene have been somewhat stable. This is because the consumption of these intermediate chemical is dependent on the production capacity to convert these product into other more usable products. The flat growth means there has not been an increase in the production capacity for these products.

Figure 19

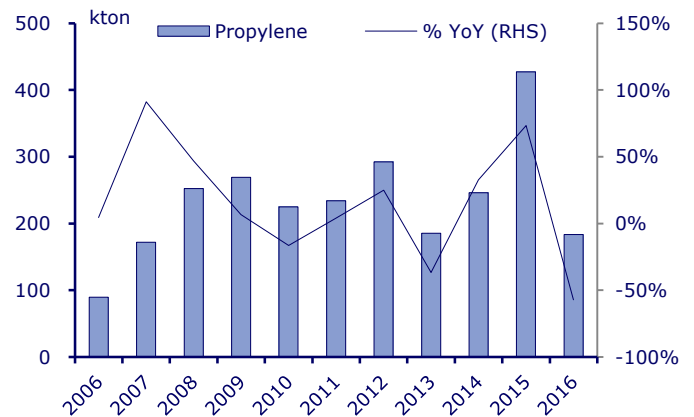
**Indonesia ethylene imports are related to PE producer capacity which has not grown much**



Source: CLSA, government of Indonesia

Figure 20

**Indonesia propylene are related to PP producer capacity which has not grown much**

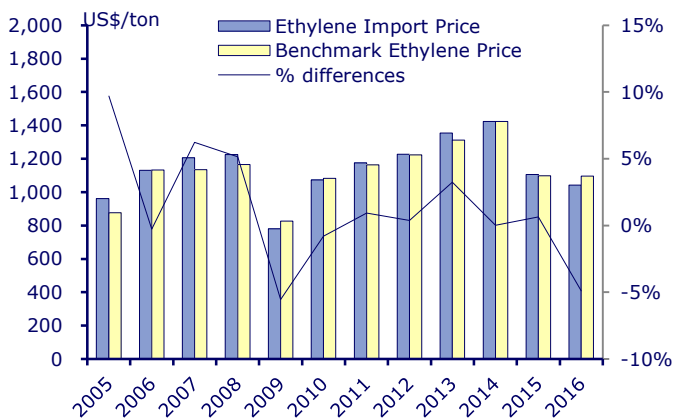


Source: CLSA, government of Indonesia

Because of the stable consumption and significant supply from domestic and neighbouring countries, the average import prices for ethylene and propylene have kept track with the benchmark prices.

Figure 21

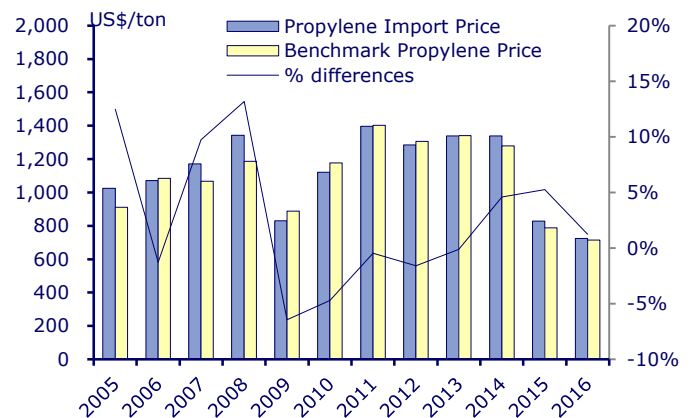
**Ethylene import price is near the benchmark**



Source: CLSA, government of Indonesia

Figure 22

**Propylene import price is near the benchmark**



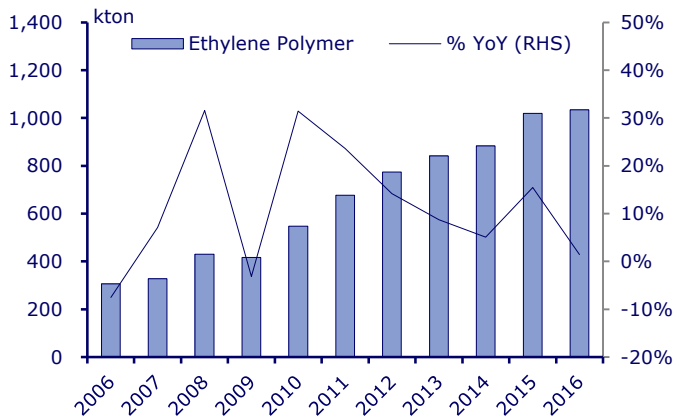
Source: CLSA, government of Indonesia

However, if look at consumption in polymer derivatives of ethylene and propylene, imports have grown 3.4x and 4.1x over the past 10 years. Demand increase as real consumption increase, and because domestic production could not keep up, so would import.



Figure 23

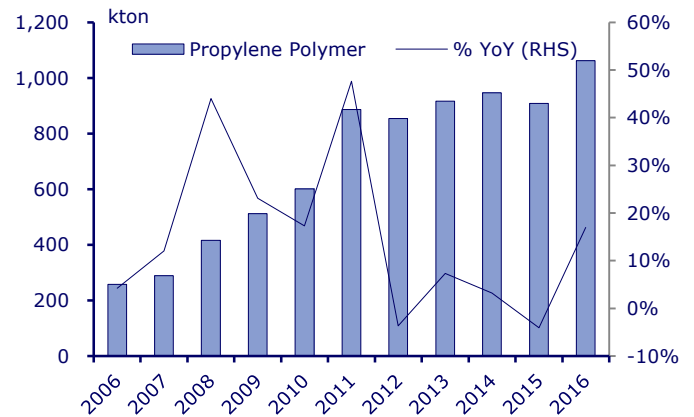
**Indonesia ethylene polymer: 13% Cagr since 2006**



Source: CLSA, government of Indonesia

Figure 24

**Indonesia propylene polymer: 15% Cagr since 2006**

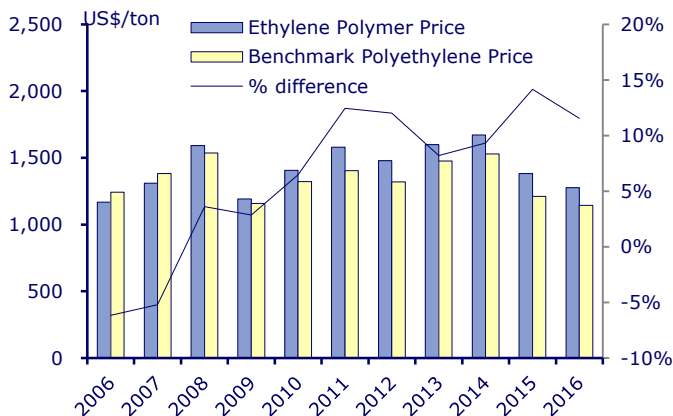


Source: CLSA, government of Indonesia

Not surprisingly, judging by the strong growth and lack of domestic supply to address the demand, import premium over benchmark prices have escalated. We saw similar trend in the company's result which implied premium prices relative to benchmark for both polyolefin.

Figure 25

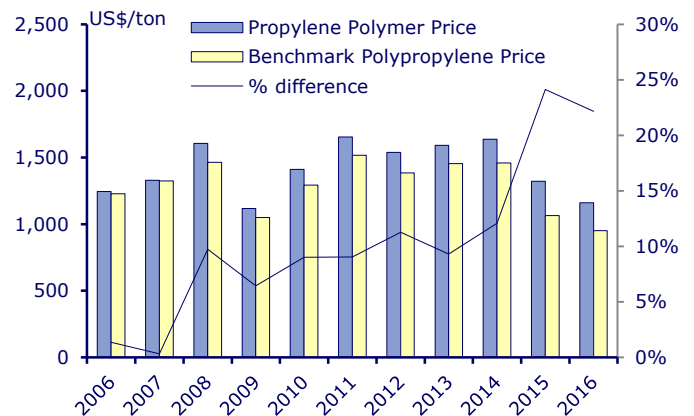
**Ethylene polymer price: expanding premium**



Source: CLSA, government of Indonesia

Figure 26

**Polypropylene polymer price: expanding premium**



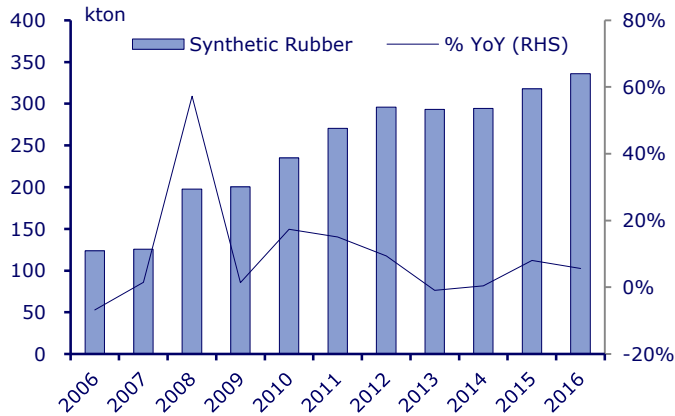
Source: CLSA, government of Indonesia

The same trend can be seen with other chemical products that requires more processing. One of those products is Synthetic Rubber. There are many types of synthetic rubber products. In the past 10 years, demand grew 1.7x.

The prices of synthetic rubber have fallen for the past 5 years due as weak rubber prices highlight substitution risk. But despite the falling rubber prices and availability of rubber in Indonesia, premium to import price remains.

Figure 27

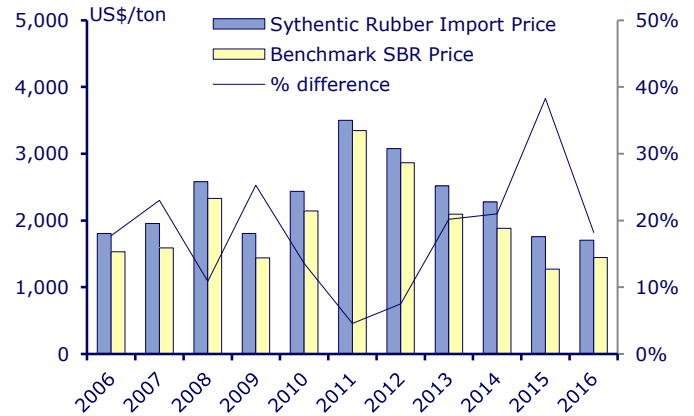
**Indonesia syn. rubber import – 10% Cagr since 2006**



Source: CLSA, government of Indonesia

Figure 28

**Syn. rubber import price – premium remains, despite decline**



Source: CLSA, government of Indonesia

Looking at the domestic Petrochemical landscape, Chandra Asri has the prime position to profit from this structural shortage. The shortage is significant enough that multiples of Chandra Asri is needed in the country in the next 10 years.

Its closest competitor, Lotte Chemical Titan (FPNI IJ), is planning to build a naphtha cracker with the accompanying olefin and its derivatives facilities next year, the construction is likely to take 4-5 years. The country is likely to remain in shortage even after this construction is complete.

Figure 29

**Indonesia petrochemical production capacity – Chandra Asri is the largest by far**

**Capacities of Petrochemical Producers in Indonesia (Annual) – FY2015**

Products (KT)	Chandra Asri	Lotte Chemical		Asahimas Chemical	Sulfindo	Nippon Shokubai	Petro-Oxo Nusantara	Polychem Indonesia	TPPI	TOTAL	
		Titan	Pertamina								
Ethylene	860									860	
LLDPE	200	200								400	
HDPE	136	250								386	
Polypropylene	480		45	386						911	
Styrene Monomer	340									340	
Vinyl Chloride Monomer				712	130					530	
Ethylene Oxide								216		216	
Propylene	470		430							900	
Acrylic Acid						140				140	
Butanol								20		20	
Ethylhexanol								100		100	
Py-gas	400									400	
Crude C4	315									315	
Benzene									400	400	
ParaXylene									550	550	
Butadiene	100									100	
<b>Total Capacity of Producer</b>	<b>3,301</b>	<b>450</b>	<b>475</b>	<b>386</b>	<b>712</b>	<b>130</b>	<b>140</b>	<b>120</b>	<b>216</b>	<b>950</b>	<b>6,880</b>

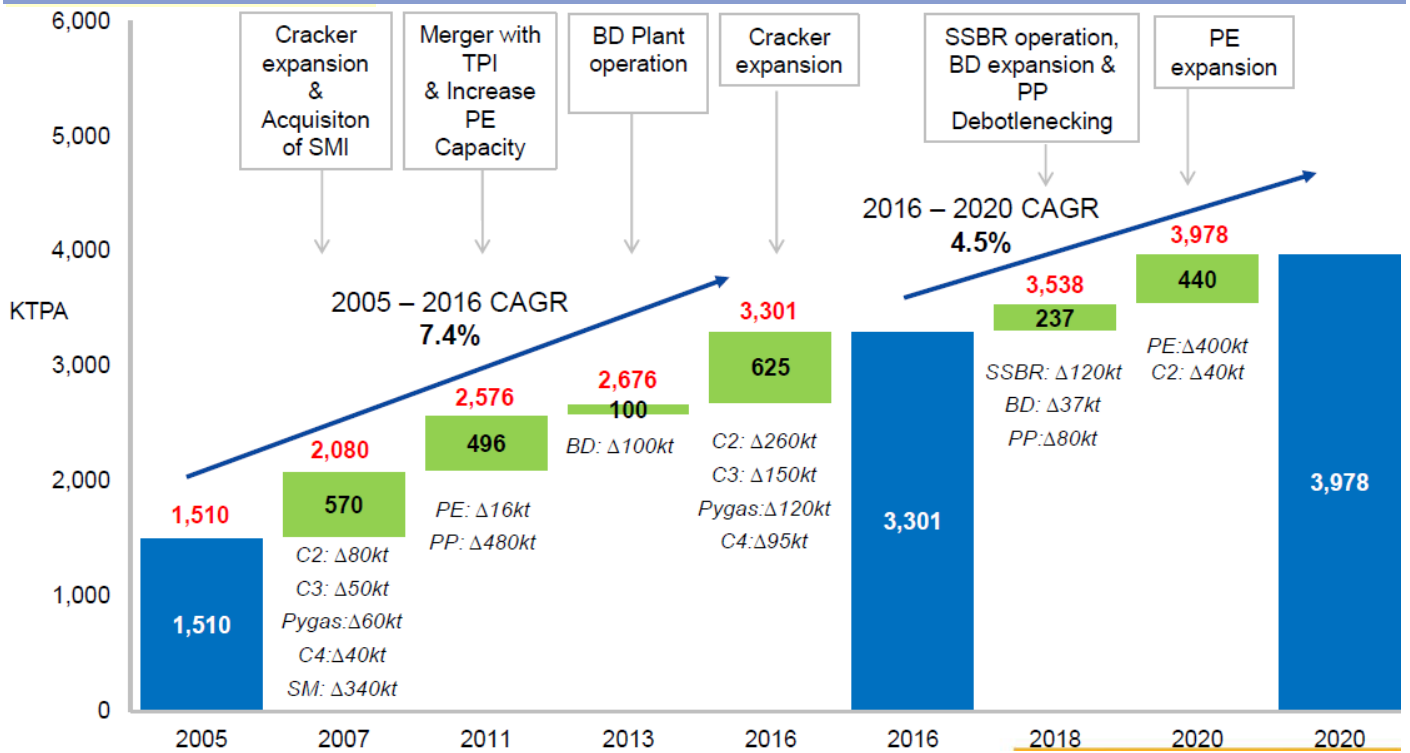
Source: Chandra Asri

From 2016 to 2020, the company plans to increase its downstream capacity to fully monetize the cracker expansion it did at the end of 2015. This includes the SBR joint venture with Michelin (45:55, TPIA:Michelin), and Butadiene and Polypropylene upgrade in 2018.

Over a longer time frame, the company may increase its overall production facility. The company informed us that it was still too early to share such plan.

Figure 30

**Chandra Asri capacity improvement plans till 2020**

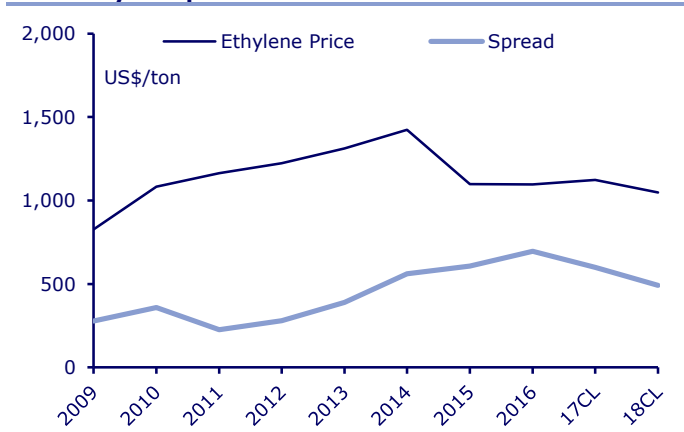


Source: Chandra Asri

As for price, CLSA price forecast for a slight decline in Ethylene and Polyethylene spread, and flat for propylene and polypropylene.

Figure 31

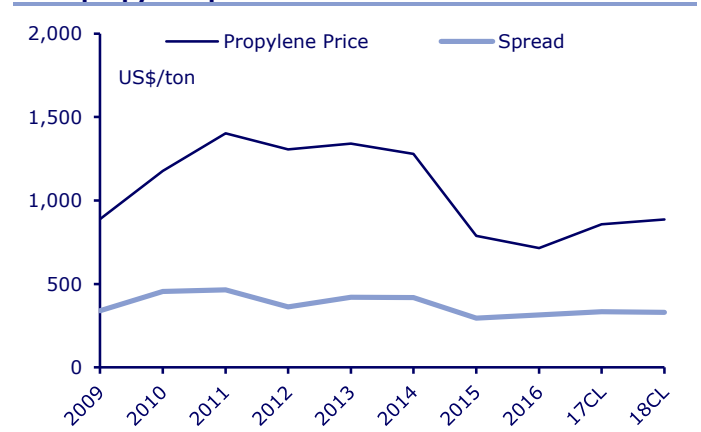
**CLSA ethylene price forecast**



Source: CLSA

Figure 32

**CLSA propylene price forecast**

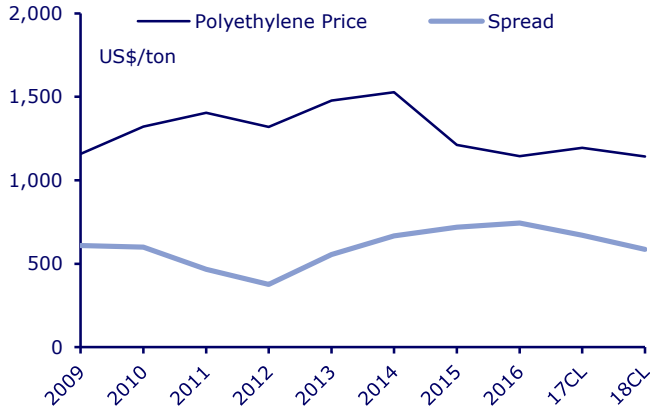


Source: CLSA

The narrowing spread is largely due to increase cost of naphtha as we expect crude prices to stabilize higher. The price forecast is made based on expected global capacity addition in the next two years.

Figure 33

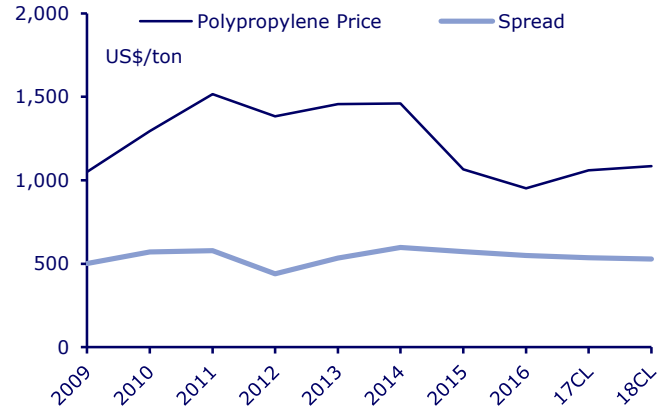
**CLSA polyethylene price forecast**



Source: CLSA

Figure 34

**CLSA polypropylene price forecast**



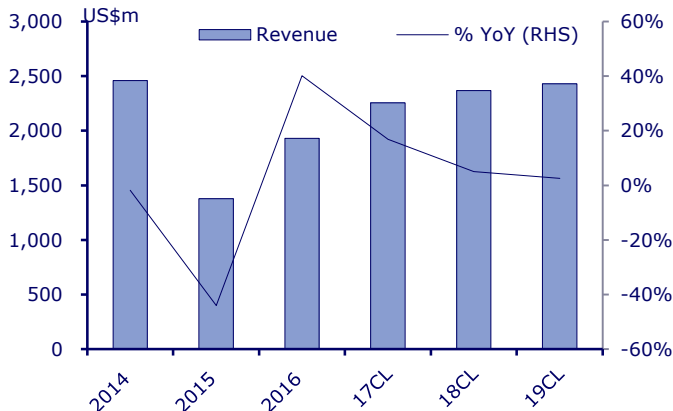
Source: CLSA

But one thing to remember is the overall revenue for the company depends on the portfolio of products it has, the premium it could get on each of those products and the volume of production.

We forecast revenue to grow 18%/5% for 17/18CL driven largely by price movement as we forecast sales tonnage to grow 0/5% for the same period.

Figure 35

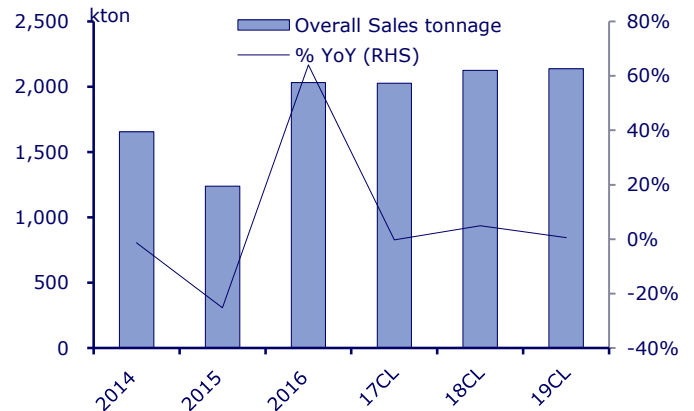
**Revenue forecast – growth driven by higher prices and slightly higher volume from 18CL onwards**



Source: CLSA, Chandra Asri

Figure 36

**Sales tonnage forecast – ramp up in 18CL does not require facility shutdowns**



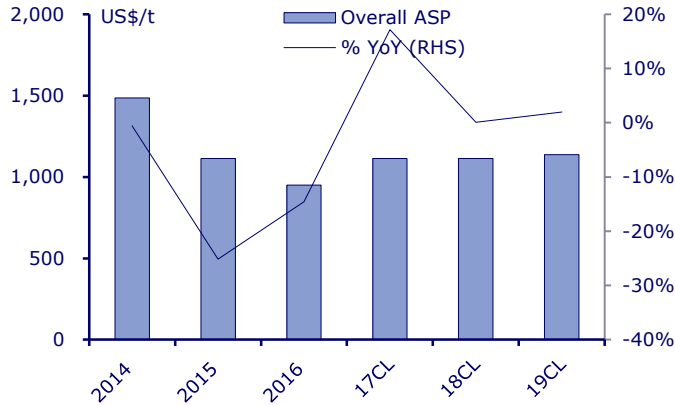
Source: CLSA, Chandra Asri

In addition to higher olefin price forecast, we also forecast for an increase in downstream product. This also contributed to higher revenue even though the overall sales tonnage from 2016 to 17CL is similar.

We forecast ASP to remain flat for 18CL as price growth in some products would offset decline in others. Since the company is focusing more on upgrading its downstream facility, we expect revenue percentage from olefin to decline over time.

Figure 37

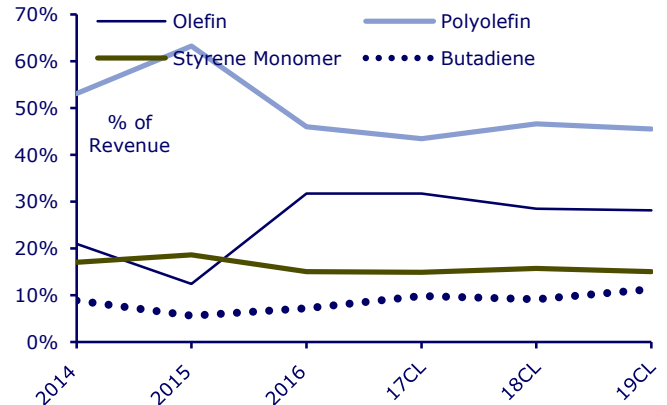
**Overall ASP – main driver to revenue growth**



Source: CLSA, Chandra Asri

Figure 38

**Revenue breakdown – growing non-olefin portion as the company focus on downstream**

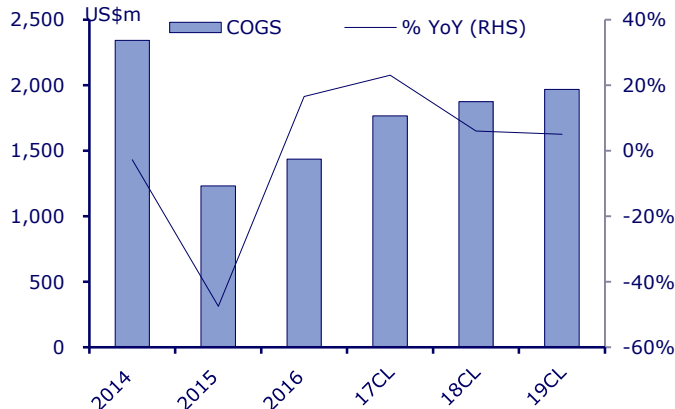


Source: CLSA, Chandra Asri

Given that we forecast Naphtha prices to increase 31% in 17CL, this was the biggest drive to our COGS growth. Our COGS growth was much smaller at 23% because we expect volume of purchased propylene would decline.

Figure 39

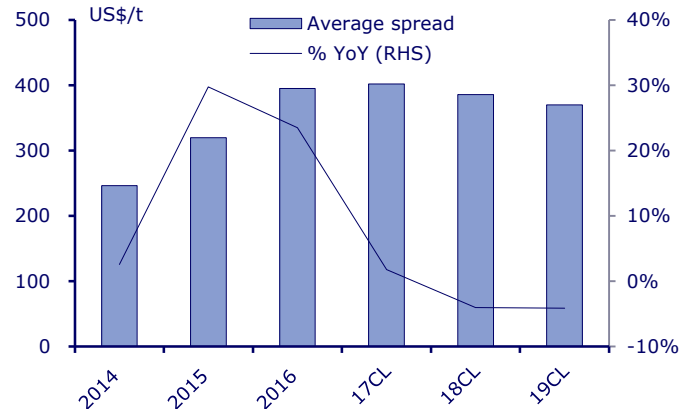
**Cogs forecast – increase as we forecast increasing naphtha prices**



Source: CLSA, Chandra Asri

Figure 40

**Spread forecast – decline on stronger naphtha**



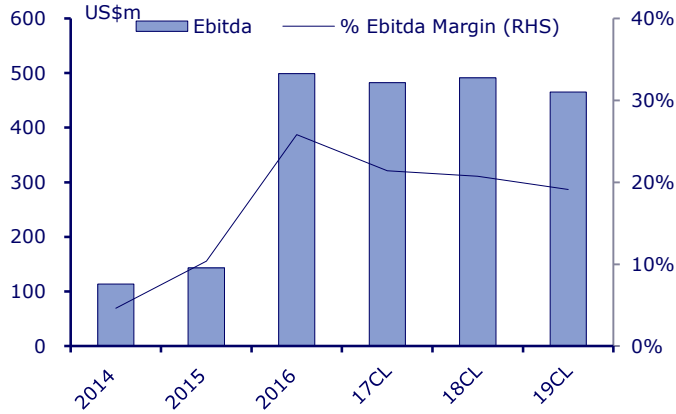
Source: CLSA, Chandra Asri

Because of our lower spread, we forecast Ebitda margin to decline from 26% in 2016 to 22% in 17/18CL. Absolute Ebitda remain fairly close as increase in sales volume negate some of the effect of narrower spread.

As a result, our NPAT forecast also remain fairly stable over the next 3 years ranging from US\$315m to US\$323m.

Figure 41

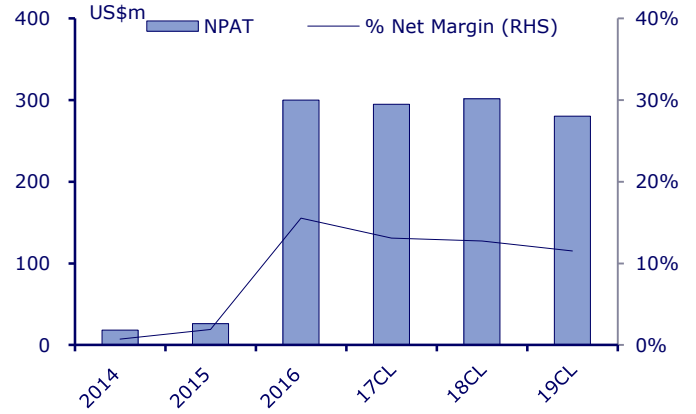
**Ebitda forecast – slight decline over time driven by spread**



Source: CLSA, Chandra Asri

Figure 42

**Earnings forecast – similarly impacted by Ebitda**



Source: CLSA, Chandra Asri



## Spread risk versus long opportunity

Petrochemical is a cyclical business. Profitability depends on spread which is a function of crude prices that determined naphtha prices, and competition amongst producers that could create over supply or shortage.

Not surprisingly, our forecast is most sensitive to changes to naphtha prices. Under normal circumstances the prices of olefins and its derivatives would also move along with Naphtha prices. In our sensitivity, assuming a 10% increase in Naphtha prices while all else remains equal, means a spread decline by -12%.

Figure 43

**Sensitivity – 10% increase in naphtha but spread decline by 12%**

	Volume	10% increase from forecast value					
		Naphtha	Ethylene	Poly Ethylene	Poly Propylene	Styrene Monomer	Butadiene
Revenue	10%	1%	2%	2%	2%	2%	1%
Ebitda	9%	(21%)	9%	8%	10%	7%	4%
NPAT	10%	(25%)	10%	10%	13%	8%	5%

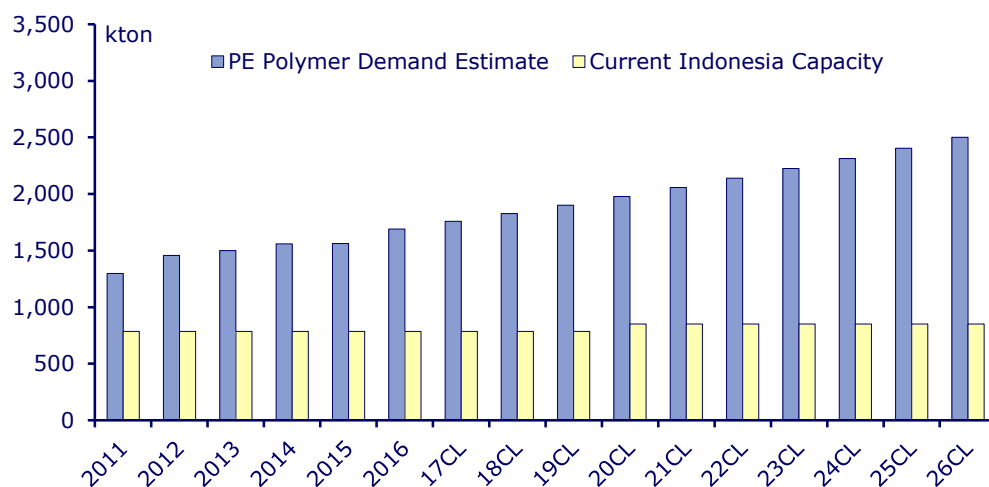
Source: CLSA

Even though, over the next 10 years, the spread may go through its peak and trough again, we believe consumption only has no way to go but up. Assuming that overall demand for Ethylene polymer to increase by 4% (lower end of real growth rate), the overall consumption would grow to 2,500 ktpa in 26CL.

This is nearly 3x the total capacity in the entire country to address the shortage. Or the company could grow its polyethylene plant capacity 5x its current level, assuming competitors capacity remain flat. The growth opportunity is tremendous.

Figure 44

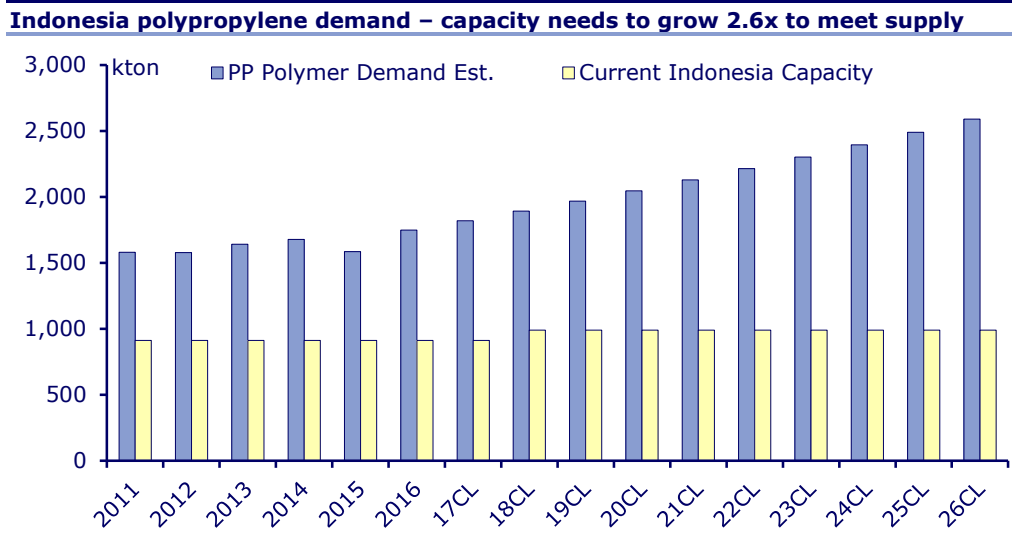
**Indonesia polyethylene demand – capacity needs to grow 3x to meet supply**



Source: CLSA, Chandra Asri, government of Indonesia

The shortage is just as significant in Propylene Polymer. Assuming similar demand growth, the nation’s capacity could grow 2.6x its current level. Or the company could grow its capacity 3x to meet the shortage, assuming competitors capacity remains the same.

Figure 45



Source: CLSA, Chandra Asri, Govt of Indonesia

To keep production low, that means the country is going to need significant investment in the sector. To maximize return, companies need to consider building a naphtha cracker facilities complete with the downstream production.

Chandra Asri is in a prime position to capitalize on this opportunity. It is the largest and the most integrated petrochemical company in Indonesia. With some investment, it is likely to remain so for many years to come.

**Initiating with a BUY rating and target price of Rp 30,100**

Chandra Asri benefited in 2016 as strong spread magnified the operational upgrade it undertook in 2015. But that upgrade was part of a multiyear improvement plan meant to focus downstream production and increase the overall ASP and sales volume.

The company also stands to benefit as the structural shortage for polymers in Indonesia become more pronounce as demand is likely to continue growing. Spread risk is similar to other petrochemical companies but the domestic opportunity in Indonesia gives Chandra Asri an edge. We initiate with a target price of Rp 30,100/sh and BUY rating.

Figure 46

**Valuation DCF – declining FCF due to declining spread**

Y/E Dec 31	17CL	18CL	19CL	20CL	21CL	22CL	23CL	24CL	25CL	26CL
(US\$m)										
<b>Revenue</b>	<b>2,281</b>	<b>2,396</b>	<b>2,507</b>	<b>2,622</b>	<b>2,670</b>	<b>2,722</b>	<b>2,775</b>	<b>2,825</b>	<b>2,877</b>	<b>2,928</b>
<b>Operating Ebit</b>	<b>434</b>	<b>438</b>	<b>432</b>	<b>442</b>	<b>430</b>	<b>421</b>	<b>414</b>	<b>404</b>	<b>396</b>	<b>387</b>
Less: Cash Tax	(105)	(108)	(108)	(111)	(110)	(110)	(109)	(109)	(107)	(106)
<b>NOPLAT</b>	<b>329</b>	<b>331</b>	<b>324</b>	<b>330</b>	<b>320</b>	<b>312</b>	<b>304</b>	<b>295</b>	<b>288</b>	<b>281</b>
Add: Depreciation	75	83	91	97	96	95	93	92	91	90
Less: Change Working Capital	7	2	3	2	2	2	2	2	2	2
Less: Capex	(201)	(233)	(199)	(72)	(72)	(72)	(72)	(72)	(72)	(72)
<b>Op Free Cash Flow</b>	<b>210</b>	<b>182</b>	<b>219</b>	<b>358</b>	<b>346</b>	<b>336</b>	<b>327</b>	<b>317</b>	<b>309</b>	<b>300</b>
<b>Discounted FCF</b>	<b>210</b>	<b>171</b>	<b>193</b>	<b>296</b>	<b>269</b>	<b>245</b>	<b>224</b>	<b>204</b>	<b>186</b>	<b>170</b>

Source: CLSA

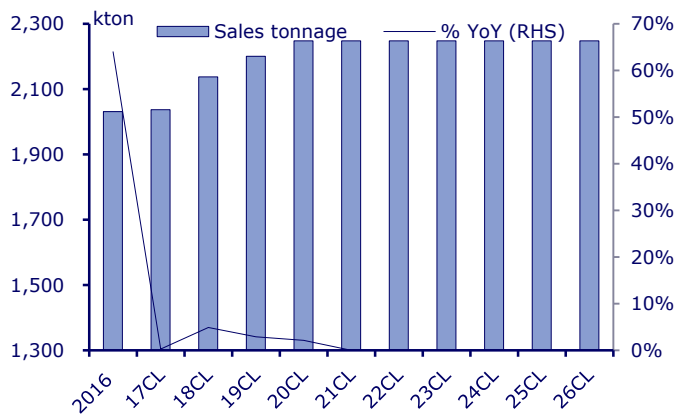


We forecast our cash flow for the next 10 years, with an assumption that the spread would gradually decline to the average level from the previous 10 years.

Admittedly, forecasting commodity prices over long term could lead to differences. But to value the company using multiple means under valuing the growth beyond the next 2 years.

Figure 47

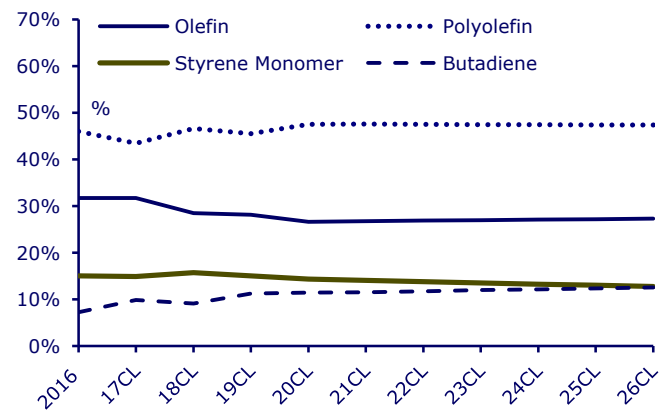
**Sales tonnage forecast – only plans already made public**



Source: CLSA, Chandra Asri

Figure 48

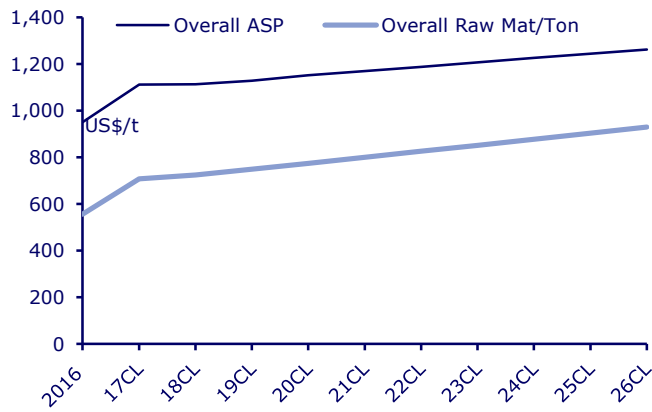
**Split forecast – each product is moving to pass its 10 year average**



Source: CLSA, Chandra Asri

Figure 49

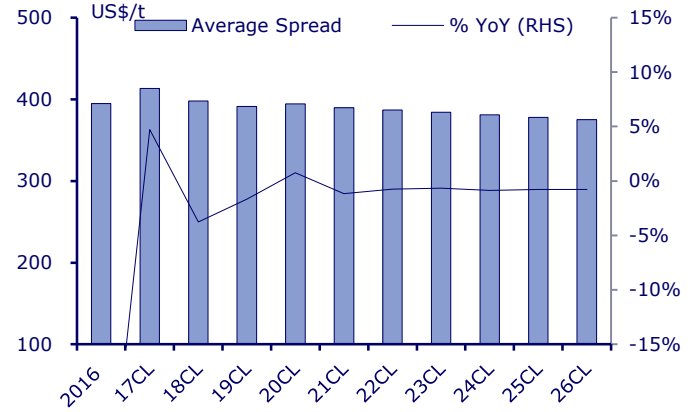
**Overall ASP and cost per ton moving past 10 year average**



Source: CLSA, Chandra Asri

Figure 50

**Average spread declining toward the average for the past 10 years**



Source: CLSA, Chandra Asri

Figure 51

<b>Valuation calculation</b>		
<b>Valuation Details</b>	<b>Units</b>	<b>Value</b>
NPV of DCF	US\$m	1,958
% WACC	%	6.5%
Terminal valuation	US\$m	4,975
% Terminal Growth	%	3%
Add: Cash	US\$m	386
Less: Debt	US\$m	362
Equity Value	US\$m	6,957
Equity Value	Rpb	98,789
<b>Target Price</b>	<b>Rp/Share</b>	<b>30,100</b>

Source: CLSA

Figure 52

<b>Earnings and balance-sheet risk scores (lower the better)</b>		
	<b>Score</b>	<b>Comments</b>
<b>Earnings-quality flags</b>		
Capex indiscipline	1	
Cash burn	0	
Rising non-core or intangibles	0	
Rising working capital	0	
Poor cash conversion	0	
<b>Earnings-quality risk score (EQRS)</b>	<b>1/5</b>	
<b>Balance-sheet-quality flags</b>		
Cash burn	0	
Excessive leverage	0	
Frequent fundraising	0	
Liquidity concerns	0	
Operational stress	0	
<b>Balance-sheet-quality risk score (BQRS)</b>	<b>0/5</b>	

Source: CLSA

### Valuation details

We value the stock on DCF (WACC 6.5%, TG 3%). We forecast our financials for the next 10 years. We use the price assumption for the next 2 years using CLSA's view and expect price to converge to the historical average prices for the past 10 years. We do not use EV/Ebitda because the company is undergoing series of facility upgrades whose values may not be captured using EV/Ebitda.

### Investment risks

Our forecast is dependent on the company meeting its facility upgrade targets that it set for the next 3 years. Earnings are sensitive to spread of products against naphtha. Increase in naphtha without similar improvement in downstream product prices would result in smaller margin and lower valuation.

Figure 53

## Regional petrochemical comps

Ticker	Company	Share Price	Mcap (US\$m)	Rec	TP	Upside (%)	TSR (%)	PE17	PE18	Div Yield (2017)	ROE17	EV/Ebitda (2017)	EV/Ebitda (2018)	Ebitda growth (2017)
TPIA IJ	Chandra Asri	23,725	5,853	BUY	30,100	26.9	26.9	18.2	17.2	0.0	24.8	11.2	10.1	2%
SCC TB	Siam Cement	532	18,456	BUY	585	10.0	13.0	13.6	13.5	3.0	18.7	10.0	9.8	1%
PTTGC TB	PTTGC	71.75	9,283	BUY	76.00	5.9	9.8	12.9	13.7	3.9	10.0	6.9	6.7	(3%)
PCHEM MK	Petronas Chemicals	7.48	13,710	BUY	8.80	17.6	20.8	16.6	15.7	3.1	12.9	8.5	8.1	6%
DLG MK	Dialog	1.70	2,102	BUY	1.86	9.4	11.0	26.4	25.6	1.6	13.4	19.5	16.2	19%
1326 TT	Formosa Chem	94.60	18,364	SELL	80.00	(15.4)	(12.1)	17.3	19.1	3.3	9.0	10.5	10.6	(5%)
6505 TT	Formosa Petrochem	106.00	33,285	SELL	94.00	(11.3)	(7.6)	20.4	20.8	3.7	16.9	13.0	12.8	(1%)
1301 TT	Formosa Plastics	92.50	19,256	O-PF	100.00	8.1	11.9	19.1	17.3	3.8	10.6	25.3	25.7	0%
014680 KS	Hansol Chemical	75,400	760	BUY	120,000	62.2	63.9	11.1	9.3	1.8	23.6	7.9	6.7	13%
011780 KS	Kumho Petrochem	73,300	2,053	O-PF	90,000	21.1	22.5	12.8	8.8	1.3	11.7	8.0	6.3	27%
051910 KS	LG Chem	290,500	18,560	BUY	360,000	25.4	27.2	14.7	14.2	1.7	10.5	6.0	5.6	2%
011170 KS	Lotte Chemical	354,000	11,100	U-PF	380,000	7.3	8.2	9.6	9.9	0.8	11.8	4.5	4.3	(2%)
1303 TT	Nanya Plastics	71.40	18,630	U-PF	75.00	5.0	7.4	19.1	17.4	2.3	8.7	14.9	13.2	10%
338 HK	Shanghai Petrochem	4.38	8,902	U-PF	4.40	0.5	3.7	9.2	8.4	3.3	17.8	4.9	3.7	9%

Source: CLSA

Figure 54

## Indonesia Coverage Comps (&gt;US\$1.5 bn market cap)

Ticker	Company	Share Price	Mcap (US\$m)	Rec	TP	TSR (%)	PE17	PE18	PB17	Div Yield (2017)	ROE17	EV/Ebitda (2017)	EV/Ebitda (2018)
TPIA IJ	Chandra Asri	23,725	5,852	BUY	30,100	26.9	18.2	17.2	4.1	0.0	24.8	11.2	10.1
TLKM IJ	Telkom	4,070	30,956	O-PF	4,700	18.6	18.1	15.2	4.2	3.1	24.7	6.1	5.3
EXCL IJ	XL Axiata	3,180	2,608	BUY	3,800	19.8	193.7	62.9	1.6	0.3	0.8	4.8	4.3
ISAT IJ	Indosat	6,975	2,856	BUY	9,000	30.5	17.8	11.5	2.5	1.5	14.8	4.0	3.4
ASII IJ	Astra Intl	8,400	25,762	BUY	10,250	24.6	17.2	15.5	2.8	2.6	16.9	13.4	11.8
BBCA IJ	BCA	16,325	30,083	BUY	19,600	21.3	17.1	14.9	3.2	1.2	19.6	n/a	n/a
BBRI IJ	BRI	13,200	24,080	O-PF	11,800	(8.3)	12.0	10.7	2.2	2.3	19.3	n/a	n/a
BMRI IJ	Bank Mandiri	11,775	20,674	O-PF	11,500	(1.0)	13.9	10.2	1.9	1.3	14.7	n/a	n/a
BBNI IJ	BNI	6,600	9,207	BUY	7,350	13.7	9.3	8.1	1.3	2.3	14.4	n/a	n/a
BJBR IJ	Bank BJB	2,190	1,624	BUY	2,000	(3.8)	11.1	10.0	1.9	4.9	18.1	n/a	n/a
HMSP IJ	HM Sampoerna	3,940	34,586	O-PF	4,400	13.8	35.9	31.9	12.4	2.1	36.2	25.9	23.0
UNVR IJ	Unilever Indo	42,850	25,165	O-PF	47,700	13.3	45.1	40.4	52.5	2.0	123.4	33.0	29.6
GGRM IJ	Gudang Garam	65,425	9,506	BUY	82,000	27.5	17.0	15.1	2.8	2.1	17.7	11.4	10.0
ICBP IJ	ICBP	8,800	7,640	O-PF	10,000	15.4	25.2	21.6	5.1	1.8	21.6	16.3	13.9
INDF IJ	Indofood	8,100	5,357	BUY	10,500	32.5	16.0	13.6	2.2	2.8	14.3	7.7	7.0
MYOR IJ	Mayora Indah	2,040	3,442	BUY	2,100	4.1	25.3	23.4	6.2	1.1	26.8	14.8	13.2
MNCN IJ	MNC	1,725	1,833	U-PF	1,760	5.9	15.4	13.6	2.3	3.8	15.4	10.1	9.4
SCMA IJ	Surya Citra Media	2,700	2,854	BUY	3,800	43.8	22.1	19.6	9.9	3.0	48.4	16.5	14.5
BSDE IJ	Bumi Serpong	1,885	2,652	U-PF	1,900	0.8	17.0	14.2	1.6	0.0	10.0	12.6	10.9
INTP IJ	Indocement	16,500	4,416	SELL	13,500	(15.9)	21.0	20.7	2.2	2.3	10.7	11.4	10.7
SMGR IJ	Semen Indonesia	9,225	4,075	U-PF	9,000	0.5	14.6	14.3	1.8	2.9	12.6	8.9	8.7
JSMR IJ	Jasa Marga	4,660	2,540	BUY	6,700	45.5	22.4	26.2	2.6	1.8	11.9	13.7	17.0
TBIG IJ	Tower Bersama	5,700	1,905	BUY	6,000	6.1	15.5	13.5	6.9	0.9	54.8	13.2	12.2
TOWR IJ	Sarana Menara	4,000	3,050	BUY	4,300	8.1	15.5	14.2	3.4	0.6	24.2	10.4	9.4
PGAS IJ	Perusahaan Gas	2,460	4,423	SELL	2,400	0.3	13.1	12.6	1.3	2.7	10.2	7.0	6.5
AKRA IJ	AKR	6,575	2,001	BUY	8,400	29.0	20.1	16.7	3.3	1.3	17.3	10.6	8.8
UNTR IJ	United Tractors	27,800	7,632	BUY	30,500	12.1	15.1	12.9	2.3	2.4	16.0	7.3	6.1
WIKA IJ	Wijaya Karya	2,460	1,670	BUY	3,100	27.5	16.1	12.8	1.8	1.4	18.1	6.5	5.7
PTPP IJ	PTPP	3,330	1,518	BUY	4,600	39.6	13.5	10.1	1.9	1.5	11.5	7.8	7.1
PWON IJ	Pakuwon	590	2,152	O-PF	650	11.4	14.4	12.6	2.7	1.3	14.7	9.7	9.2
SMRA IJ	Summarecon	1,380	1,495	SELL	1,350	(2.1)	40.8	34.4	3.0	0.0	20.5	14.9	13.7
ADRO IJ	Adaro	1,730	4,155	BUY	2,300	35.7	10.6	10.9	1.2	2.8	7.6	3.3	2.9
ITMG IJ	ITM	18,650	1,593	BUY	22,500	29.9	6.8	6.2	1.6	9.3	11.3	3.2	2.7
PTBA IJ	Bukit Asam	11,575	1,985	BUY	18,000	61.1	5.3	7.4	1.6	5.6	24.7	3.1	3.9
<b>Average</b>							<b>22.6</b>	<b>16.9</b>	<b>4.5</b>	<b>2.2</b>	<b>21.1</b>	<b>11.2</b>	<b>10.3</b>

Source: CLSA

## Summary financials

Year to 31 December	2015A	2016A	2017CL	2018CL	2019CL
<b>Summary P&amp;L forecast (US\$m)</b>					
<b>Revenue</b>	<b>1,378</b>	<b>1,930</b>	<b>2,281</b>	<b>2,396</b>	<b>2,507</b>
Op Ebitda	143	499	510	521	523
Op Ebit	79	424	434	438	432
Interest income	0	0	3	4	5
Interest expense	(23)	(32)	(25)	(21)	(17)
Other items	(1)	9	8	9	10
<b>Profit before tax</b>	<b>56</b>	<b>401</b>	<b>420</b>	<b>431</b>	<b>431</b>
Taxation	(30)	(100)	(105)	(108)	(108)
Minorities/Pref divs	0	0	-	-	-
<b>Net profit</b>	<b>26</b>	<b>300</b>	<b>315</b>	<b>323</b>	<b>323</b>
<b>Summary cashflow forecast (US\$m)</b>					
<b>Operating profit</b>	<b>79</b>	<b>424</b>	<b>434</b>	<b>438</b>	<b>432</b>
Operating adjustments	(23)	(23)	(14)	(8)	(1)
Depreciation/amortisation	64	75	75	83	91
Working capital changes	(23)	58	7	2	3
Net interest/taxes/other	8	(57)	(105)	(20)	(108)
<b>Net operating cashflow</b>	<b>105</b>	<b>476</b>	<b>398</b>	<b>496</b>	<b>417</b>
Capital expenditure	(205)	(65)	(201)	(233)	(199)
<b>Free cashflow</b>	<b>(100)</b>	<b>410</b>	<b>196</b>	<b>262</b>	<b>218</b>
Acq/inv/disposals	(41)	-	-	-	-
Int, invt & associate div	8	(4)	-	-	-
<b>Net investing cashflow</b>	<b>(238)</b>	<b>(69)</b>	<b>(201)</b>	<b>(233)</b>	<b>(199)</b>
Increase in loans	57	(123)	(63)	(78)	(56)
Dividends	(5)	(44)	(46)	(47)	(47)
Net equity raised/other	(30)	(39)	-	-	-
<b>Net financing cashflow</b>	<b>22</b>	<b>(205)</b>	<b>(109)</b>	<b>(125)</b>	<b>(103)</b>
<b>Incr/(decr) in net cash</b>	<b>(111)</b>	<b>202</b>	<b>87</b>	<b>137</b>	<b>115</b>
Exch rate movements	-	-	-	-	-
<b>Opening cash</b>	<b>208</b>	<b>97</b>	<b>299</b>	<b>386</b>	<b>523</b>
<b>Closing cash</b>	<b>97</b>	<b>299</b>	<b>386</b>	<b>523</b>	<b>638</b>
<b>Summary balance sheet forecast (US\$m)</b>					
Cash & equivalents	97	299	386	523	638
Debtors	50	140	156	164	172
Inventories	178	200	193	205	217
Other current assets	91	54	59	61	63
Fixed assets	1,308	1,317	1,443	1,594	1,701
Intangible assets	0	0	0	0	0
Other term assets	138	120	120	32	32
<b>Total assets</b>	<b>1,862</b>	<b>2,129</b>	<b>2,358</b>	<b>2,580</b>	<b>2,824</b>
Short-term debt	121	63	54	42	34
Creditors	244	344	362	384	408
Other current liabs	13	47	51	52	53
Long-term debt/CBs	426	362	308	242	194
Provisions/other LT liabs	171	172	172	172	172
Minorities/other equity	7	7	7	7	7
Shareholder funds	880	1,135	1,404	1,680	1,957
<b>Total liabs &amp; equity</b>	<b>1,862</b>	<b>2,129</b>	<b>2,358</b>	<b>2,580</b>	<b>2,824</b>
<b>Ratio analysis</b>					
Revenue growth (% YoY)	(44.0)	40.1	18.2	5.0	4.6
Ebitda growth (% YoY)	25.7	248.7	2.2	2.2	0.5
Ebitda margin (%)	10.4	25.8	22.3	21.7	20.9
Net profit margin (%)	1.9	15.5	13.8	13.5	12.9
Dividend payout (%)	0.2	0.1	0.1	0.1	0.1
Effective tax rate (%)	53.0	25.1	25.0	25.0	25.0
Ebitda/net int exp (x)	6.3	15.6	23.4	30.3	46.3
Net debt/equity (%)	50.8	11.1	(1.7)	(14.2)	(20.9)
ROE (%)	3.0	29.8	24.8	20.9	17.8
ROIC (%)	2.7	22.1	22.2	21.1	19.8
EVA@/IC (%)	(6.2)	12.6	12.7	11.6	10.3

Source: CLSA



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### Companies mentioned

Chandra Asri (TPIA IJ - RP23,725 - BUY)  
 Adaro (ADRO IJ - RP1,730 - BUY)  
 AKR (AKRA IJ - RP6,575 - BUY)  
 Asahimas Chemical (N-R)  
 Astra Intl (ASII IJ - RP8,400 - BUY)  
 Bank BJB (BJBR IJ - RP2,190 - BUY)  
 Bank Mandiri (BMRI IJ - RP11,775 - OUTPERFORM)  
 Barito Pacific (N-R)  
 BCA (BBCA IJ - RP16,325 - BUY)  
 BNI (BBNI IJ - RP6,600 - BUY)  
 BRI (BBRI IJ - RP13,200 - OUTPERFORM)  
 Bukit Asam (PTBA IJ - RP11,575 - BUY)  
 Bumi Serpong (BSDE IJ - RP1,885 - UNDERPERFORM)  
 Chandra Asri (N-R)  
 Dialog (DLG MK - RM1.69 - BUY)  
 Formosa Chem (1326 TT - NT\$94.6 - SELL)  
 Formosa Petrochem (6505 TT - NT\$106.0 - SELL)  
 Formosa Plastics (1301 TT - NT\$92.5 - OUTPERFORM)  
 Gudang Garam (GGRM IJ - RP65,425 - BUY)  
 Hansol Chemical (014680 KS - ₩74,000 - BUY)  
 HM Sampoerna (HMSP IJ - RP3,940 - OUTPERFORM)  
 ICBP (ICBP IJ - RP8,800 - OUTPERFORM)  
 Indocement (INTP IJ - RP16,500 - SELL)  
 Indofood (INDF IJ - RP8,100 - BUY)  
 Indosat (ISAT IJ - RP6,975 - BUY)  
 ITM (ITMG IJ - RP18,650 - BUY)  
 Jasa Marga (JSMR IJ - RP4,660 - BUY)  
 Kumho Petrochem (011780 KS - ₩74,300 - OUTPERFORM)  
 LG Chem (051910 KS - ₩287,000 - BUY)  
 Lotte Chemical (011170 KS - ₩355,000 - UNDERPERFORM)  
 Lotte Chemical Titan (N-R)  
 Magna Resources (N-R)  
 Marigold Resources (N-R)  
 Mayora Indah (MYOR IJ - RP2,040 - BUY)  
 Michelin (N-R)  
 MNC (MNCN IJ - RP1,725 - UNDERPERFORM)  
 Nanya Plastics (1303 TT - NT\$71.4 - UNDERPERFORM)  
 Nipon Shukubai (N-R)  
 Pakuwon (PWON IJ - RP590 - OUTPERFORM)  
 Perusahaan Gas (PGAS IJ - RP2,460 - SELL)  
 Petronas Chemicals (PCHEM MK - RM7.48 - BUY)  
 Petro-Oxo Nusantara (N-R)  
 Polychem Indo (N-R)  
 Polytama (N-R)  
 PT Barito Pacific Tbk (N-R)  
 PT Pertamina (N-R)  
 PTPP (PTPP IJ - RP3,330 - BUY)  
 PTTGC (PTTGC TB - BT71.8 - BUY)  
 Sarana Menara (TOWR IJ - RP4,000 - BUY)  
 SCG Chemical (N-R)

Semen Indonesia (SMGR IJ - RP9,225 - UNDERPERFORM)  
Shanghai Petrochem (338 HK - HK\$4.41 - UNDERPERFORM)  
Siam Cement (SCC TB - BT532.0 - BUY)  
Sulfindo (N-R)  
Summarecon (SMRA IJ - RP1,380 - SELL)  
Surya Citra Media (SCMA IJ - RP2,700 - BUY)  
Telkom (TLKM IJ - RP4,070 - OUTPERFORM)  
Temasek (N-R)  
Tower Bersama (TBIG IJ - RP5,700 - BUY)  
TPPI (N-R)  
Unilever Indo (UNVR IJ - RP42,850 - OUTPERFORM)  
United Tractors (UNTR IJ - RP27,800 - BUY)  
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