

ASEAN Sustainable Business Leader

Agenda:

- 1. Key Drivers and Opportunities
- 2. Performance Summary and Key Indicators
- 3. Appendix



June 5-9, 2017

Information updated



Pages	Details
5	Additional details on central Vietnam cement acquisition
6	Additional details on LSP project
7 - 8	SCG's presence in Vietnam and Indonesia
14 - 18	Updated chemicals prices
23	Updated details on the ASEAN cement markets



1. Key Drivers and Opportunities

Summary of Strategic Efforts:

Towards the ASEAN market advantage



SCG Chemicals

- Vietnam's LSP Complex: FID targeted for mid-2017
 71% stake, +\$5 bill, approx. 5 yr construction
- Indonesia's Chandra Asri Complex: Continued asset upgrades.

SCG Cement - Building Materials

- Vietnam: 3.1 MT cement acquisition in central Vietnam (approx.15,400 MB).
- Myanmar and Laos: Ramp up of SCG's new cement plants.
- Capture growth opportunities with integrated platform.

SCG Packaging

- Consolidate position as an integrated packaging solutions provider.
- Move towards end-user application.

Strong financial position

1.5x net debt on EBITDA

Vietnam: Cement acquisition





- 15,400 MB (\$440 mill) investment for 3.1MT of integrated cement, at \$140/ton.
- \$140/ton is EV basis, which includes debt and facility upgrades (waste heat power generator, and others) over 18-24 months.
- Main assets are in 2 facilities in Central Vietnam.
- Sales efforts focused in Central Vietnam.

(2016)	Supply	<u>Demand</u>
North	64 MT	25 MT
Central	13 MT	13 MT
South	9 MT	22 MT

Vietnam: Long Son Petrochemicals (LSP) project





- Vietnam's first cracker
- 1.6MT world-scale olefins cracker
- Flex-feedstock (gas up to 80%)
- Full integration to downstream.
- Deep seaport and utilities
- 100km from Ho Chi Minh City
- Vietnam consumed 2.3MT (PE,PP) in 2016

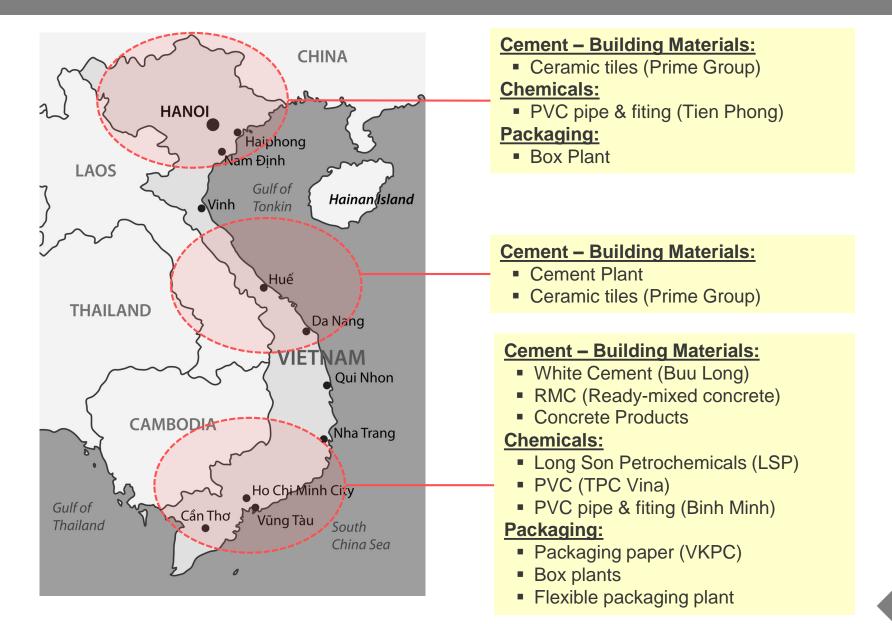
Status: FID targeted for mid-2017

- 71% SCG
- 29% Petro Vietnam

Presence in Vietnam:



Assets: 48,448 MB (\$1.4 Bill), and 8,700 staffs



Presence in Indonesia:



Assets: 46,834 MB MB (\$1.3 Bill), and 7,000 staffs



Cement – Building Materials:

- Cement plant
- RMC (Ready-mixed concrete)
- Ceramic tiles (KIA)
- Lightweight concrete block

Chemicals:

Chandra Asri (30% stake)

Packaging:

Box Plants

<u>Nationwide</u>	Total
RMC (Ready-mixed concrete)	52 plants
Distribution: Kokoh	19 DC

Chemicals: ASEAN portfolio



Flex-products (metathesis)

MOC (2010)

Map Ta Phut

Olefins

1.7MT C2 + C3

Thailand

Crackers (SCG 2/3, DOW 1/3)

ROC (1999) Rayong Olefins

1.35 MT C2 + C3

Subsidiaries

PE

PP

PVC

Others

Indonesia

Cracker (SCG 30%)

CAP (1995) Chandra Asri

0.9 MT C2 + C3

De-bottleneck 40% debot done

1.3 MT C2 + C3

Flexible-feed cracker

Vietnam

Cracker

Long Son Petrochemicals (LSP)

> >\$4.5 Billion 1.6 MT C2 + C3

Downstream

Associates Dow Mitsui Chemicals Mitsubishi Rayon BST

Downstream

Subsidiaries Associates PE Michelin SSBR (Q2/18 start) PP SM BD

Project Details

JV basis **Located in Southern Vietnam**

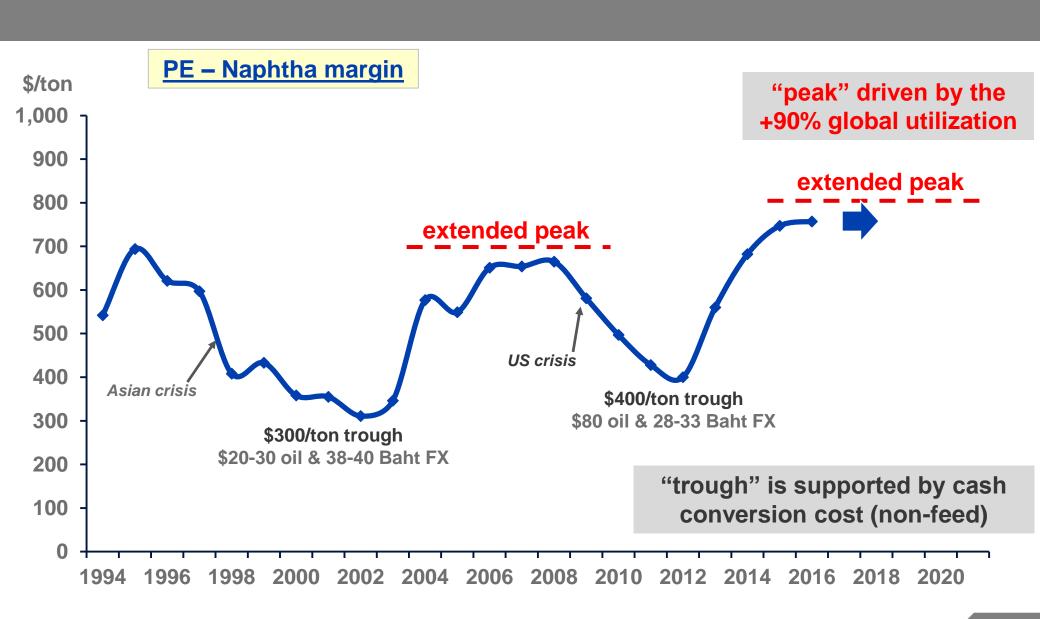
Update:

71% SCG 29% Petro Vietnam

FID targeted for mid-2017.

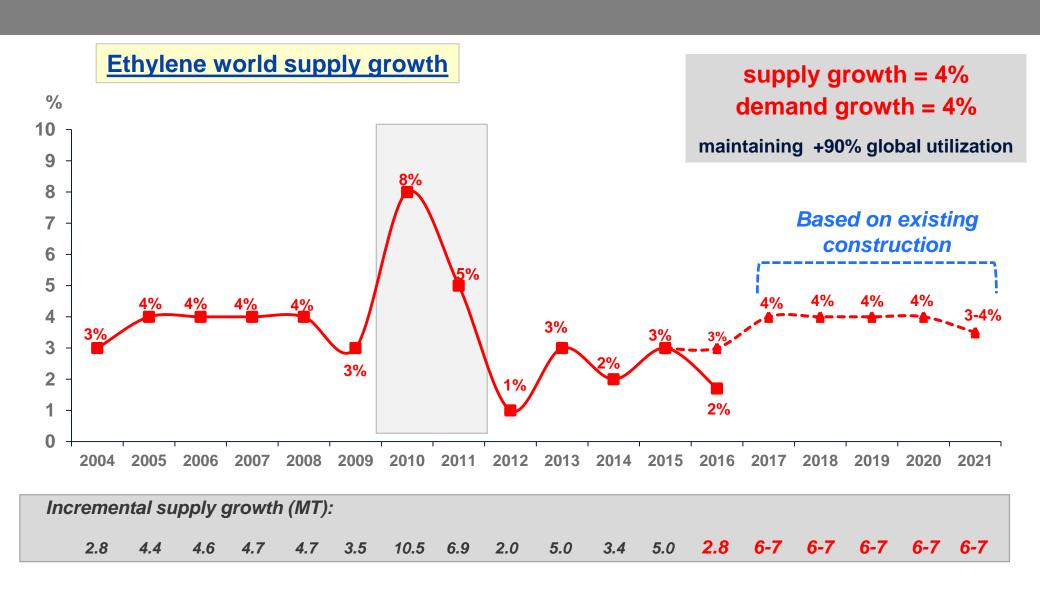
Extended chemicals cycle: HDPE - Naphtha gap





Chemicals: Ethylene world supply growth



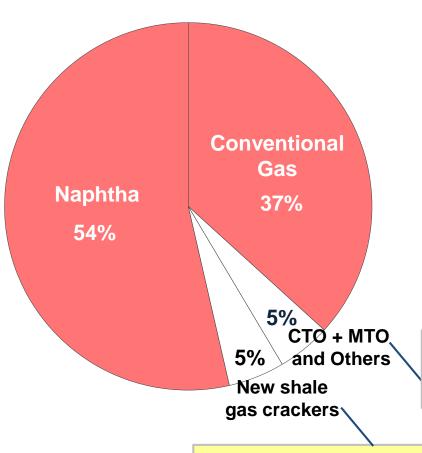


Note: as of Sept/16

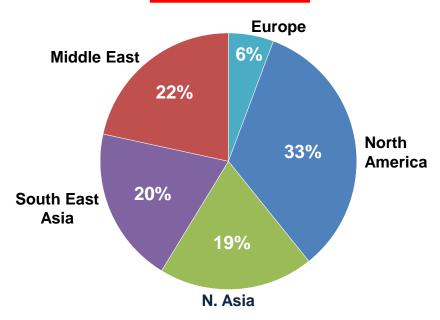
Chemicals: Ethylene world capacity







New capacity by region (2017 - 2021)

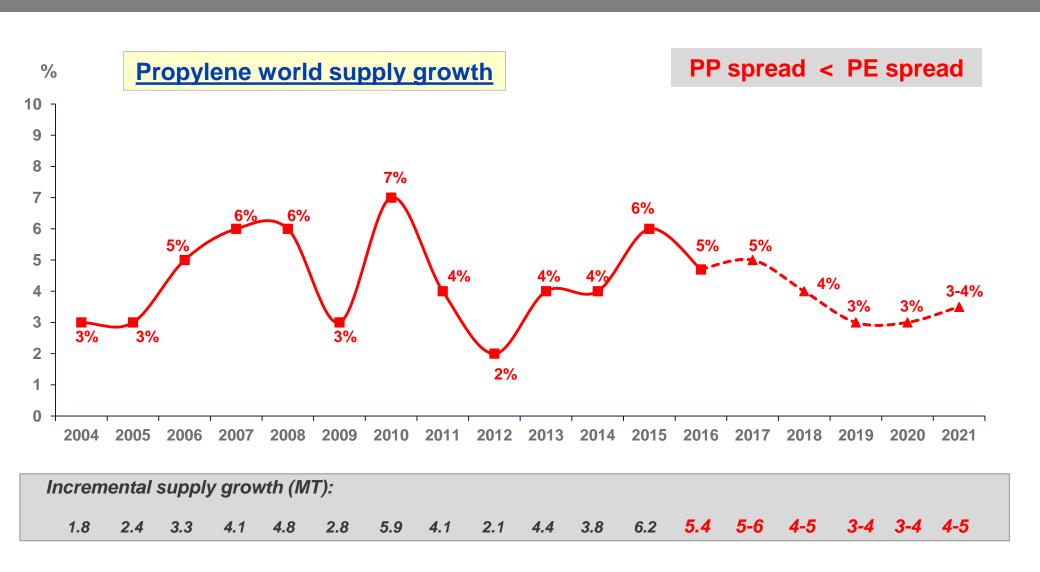


- Mongolia coal reserves location.
- 2.5 time higher investment cost than conventional.
- deleted from China's investment tax promotion.

<u>H2/17</u> DOW 1.5 MT OXY 0.6 MT 2018 Chevron 1.5 MT Exxon 1.5 MT

Chemicals: Propylene world supply growth



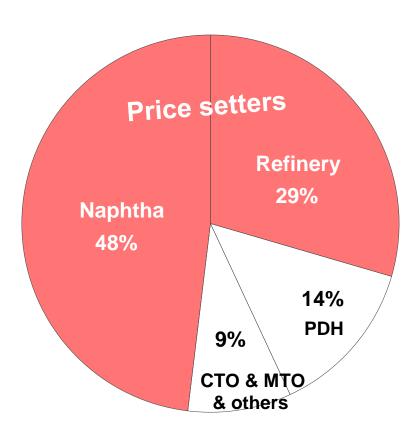


Note: as of Sept/16

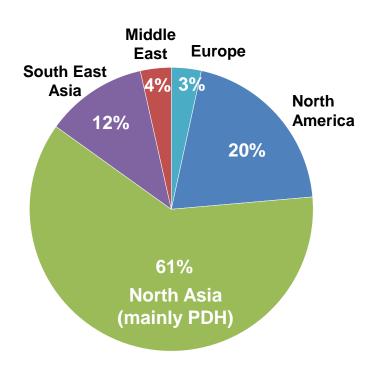
<u>Chemicals</u>: Propylene world capacity Naphtha + refinery = 77% of capacity



Propylene world capacity 143 MT in 2021



New capacity by region (2017 – 2021)



Chemicals products outlook



I = (02) CONSUME GOODS (1000 packaging)	PE ((C2)	consumer goods	(food packaging)
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PP (C3) capital goods (electronics, automotive)



PVC construction related



olefins

MMA (C4) consumer / capital goods



BD (C4) rubber substitutes



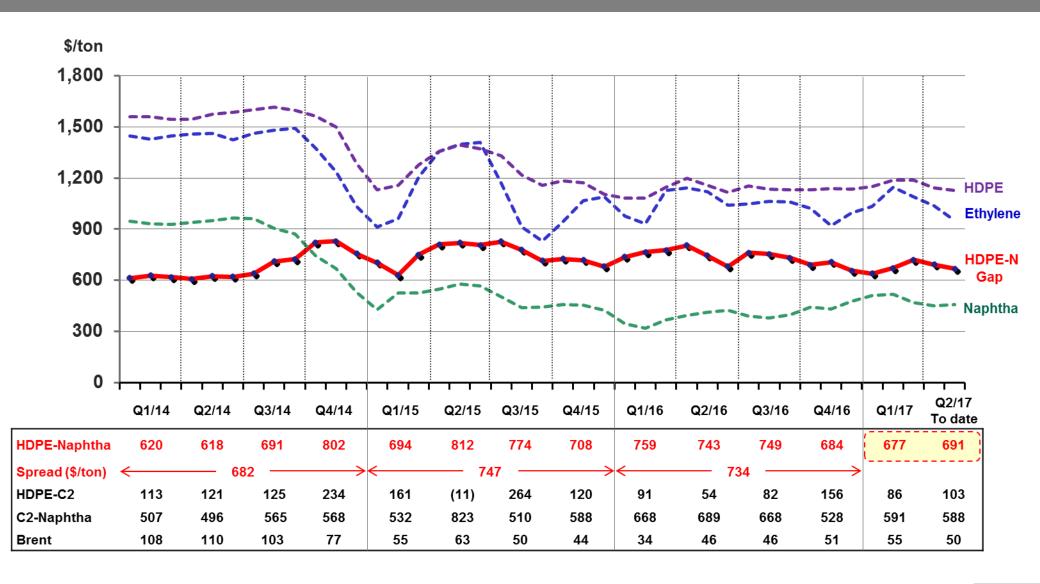
PTA textiles industry



aromatics

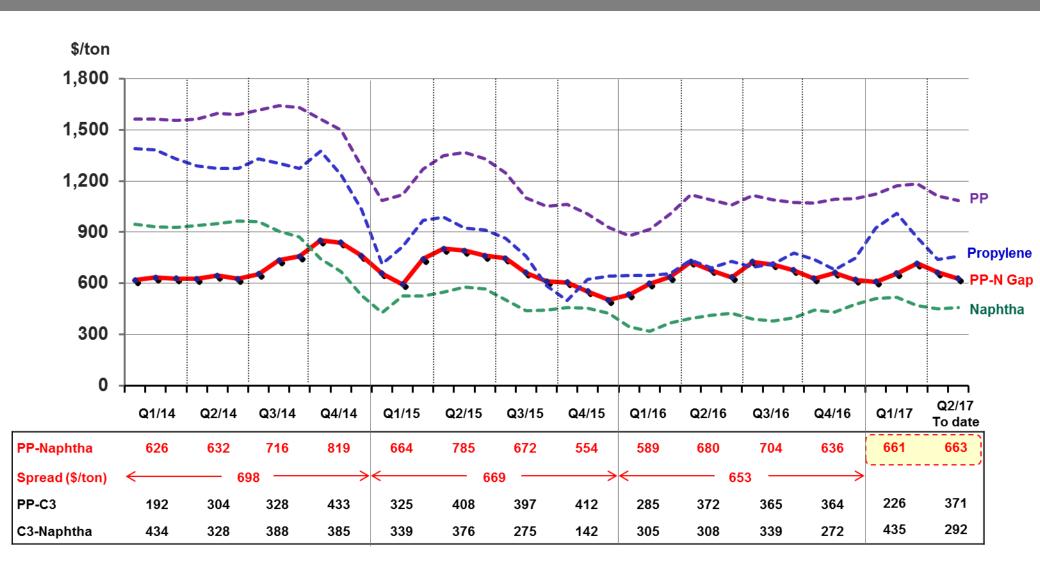
HDPE - Naphtha price gap





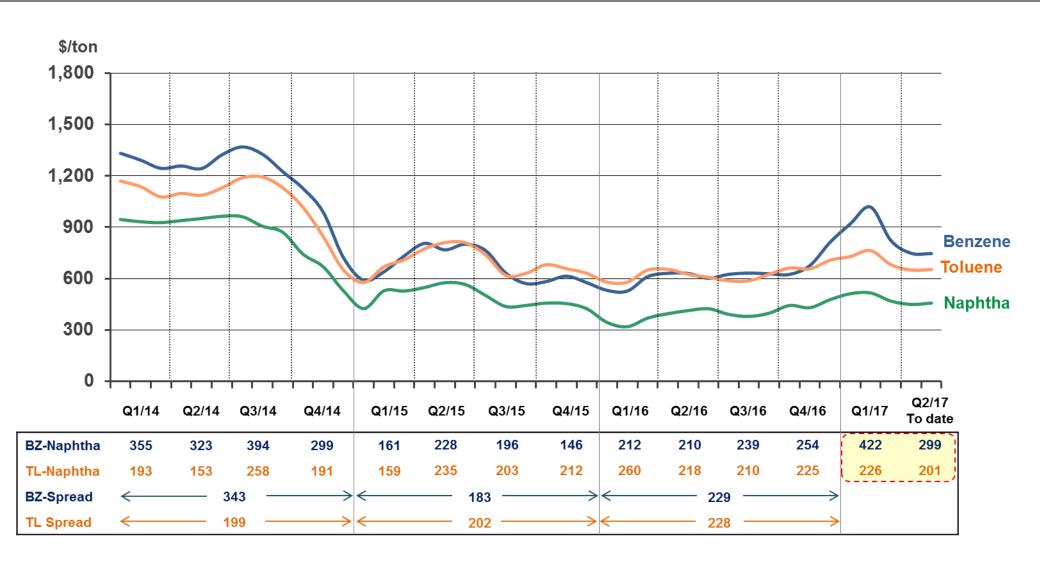
PP - Naphtha price gap





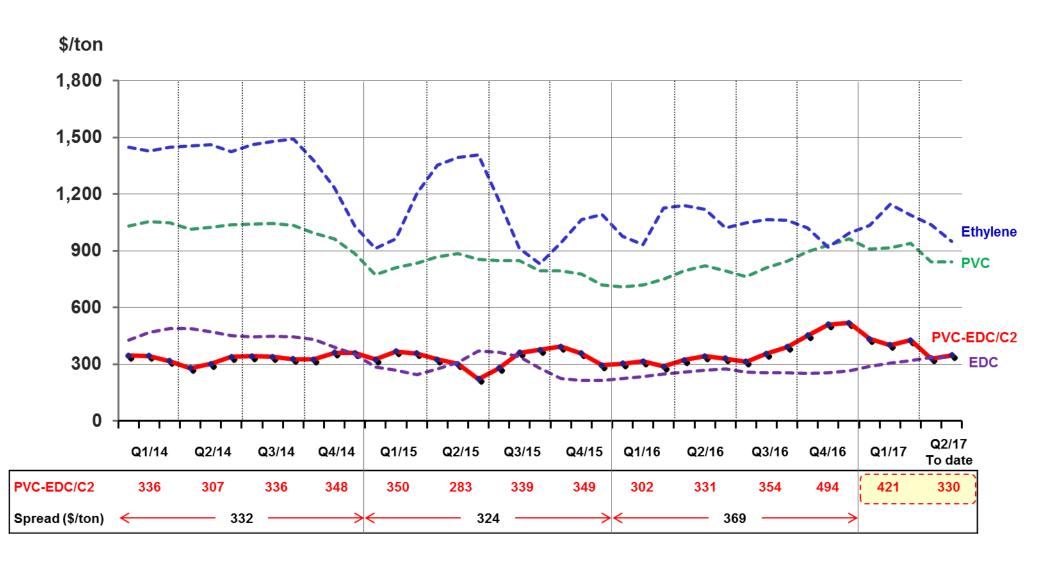
Benzene & Toluene





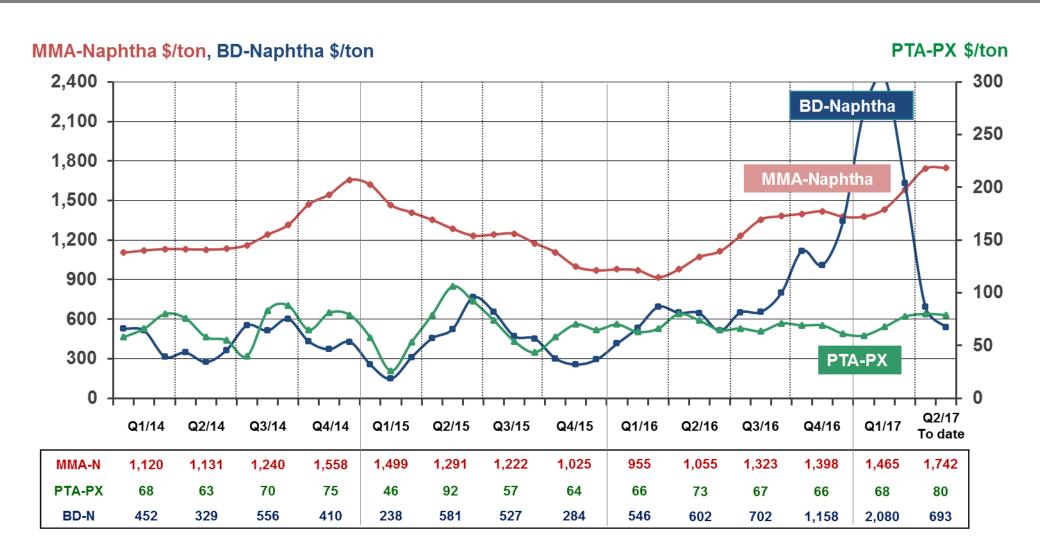






Price Gaps of Associates

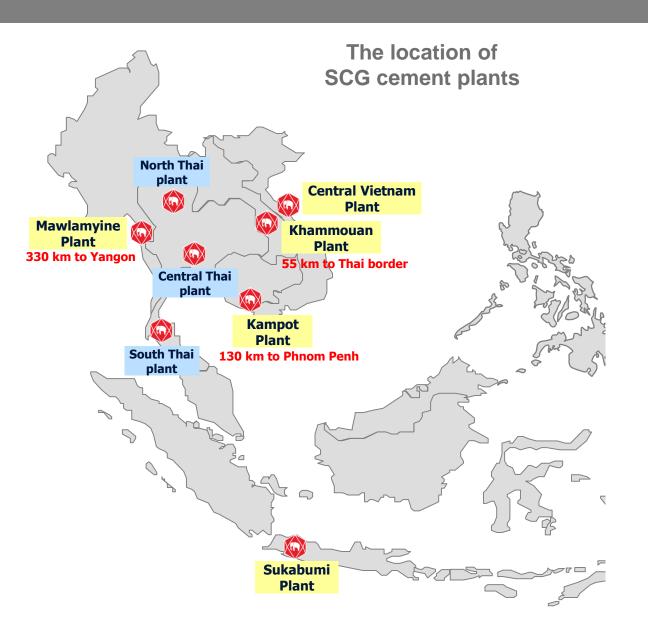




Cement expansion: Capacity growth across ASEAN



23 MT

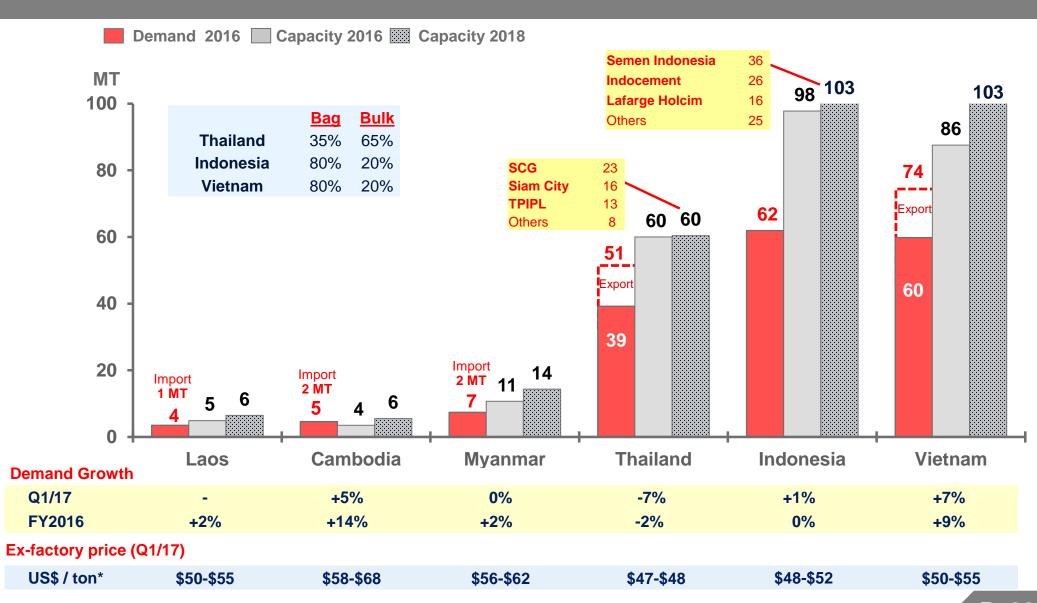


ASEAN (ex-Th	<u>nai)</u> :		10.5 MT
Vietnam	3.1	MT	Q1/17 M&A
Laos	1.8	MT	Q1/17 start
Myanmar	1.8	MT	Q1/17 start
Indonesia	1.8	MT	H1/15 start
Cambodia 1&2	2.0	MT	H1/15 start

THAILAND:

ASEAN cement markets





Noted: *approximate price and nearby SCG's plants.

Cement: Thailand's domestic market segments



% Growth (y-o-y)

	Q1/16	Q2/16	Q3/16	Q4/16	FY2016	Q1/17
Total Market* (100%)	+5%	-3%	-5%	-3%	-2%	-7%
Commercial (Approximately 15%)	0%	-7%	-7%	-2%	-4%	-7%
Gov't (Approximately 35%)	+21%	+9%	+1%	+4%	+9%	-4%
Residential (Approximately 50%)	-2%	-10%	-8%	-8%	-7%	-9%

Note: * Estimated volume market distribution

Packaging:



Packaging Chain - Rengo's 30% JV.



Baling station (across ASEAN)



Recycled Paper (Imported + Local)



Packaging Paper 2.3 MT







Secondary





• Primary (520 mill sq.m.)





Fibrous Chain

- Nippon Paper's 30% JV.



Tree farmed eucalyptus (mainly contract farm)



Woodchip



Pulp 0.47 MT

• Dissolving Grade Pulp (textile)





Hygienic Food Application





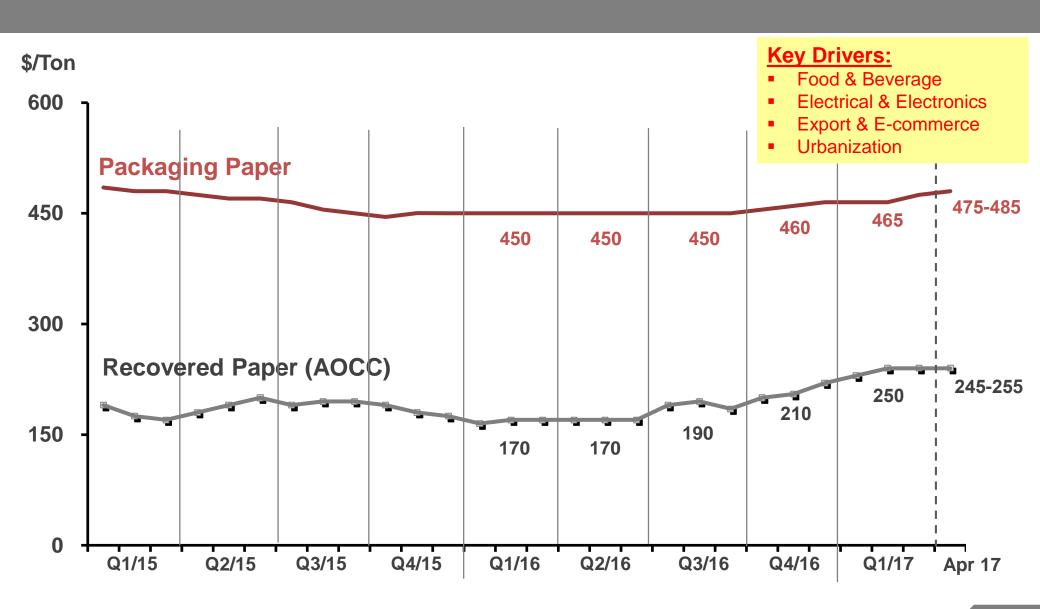


Printing and Writing



Packaging chain prices





Note: regional prices

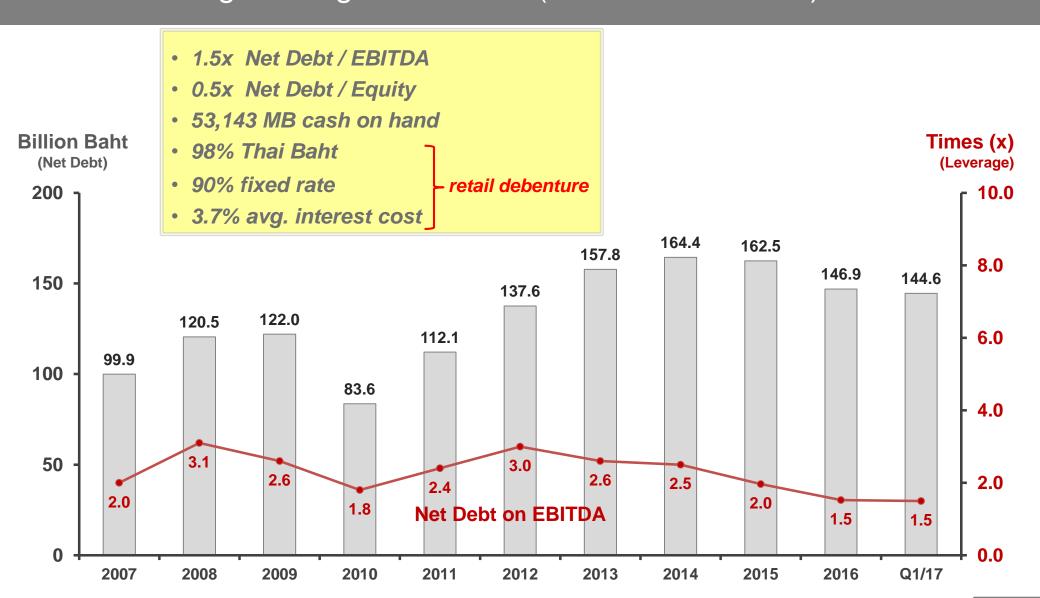


2. Performance Summary and Key Indicators

Net debt:

SCG

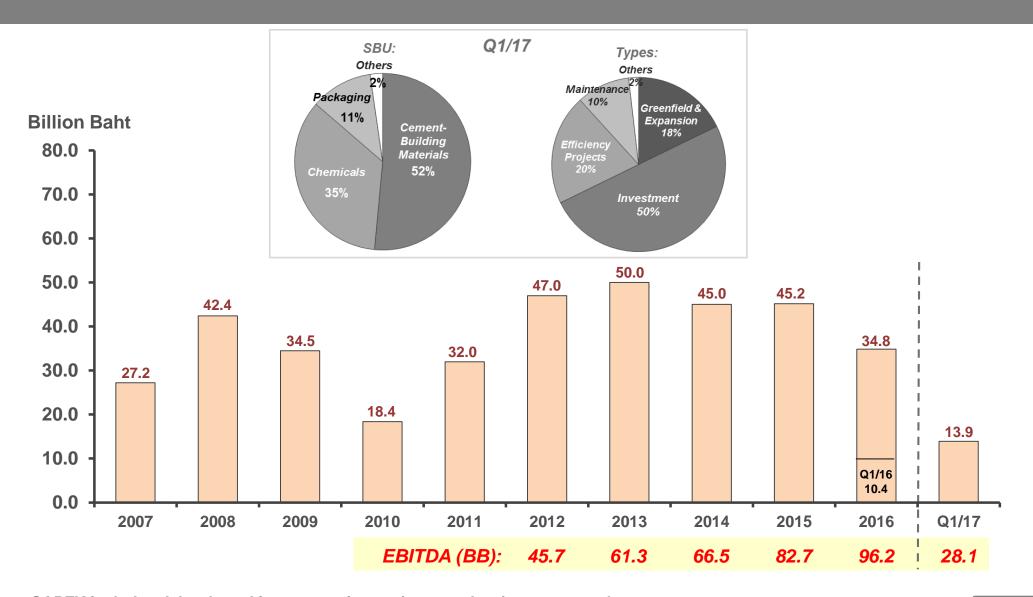
Internal leverage ceiling of 2.5 times (Net debt / EBITDA)



CAPEX and Investments:



Forecasted FY2017 CAPEX & Investments of 60,000 MB to 70,000 MB.

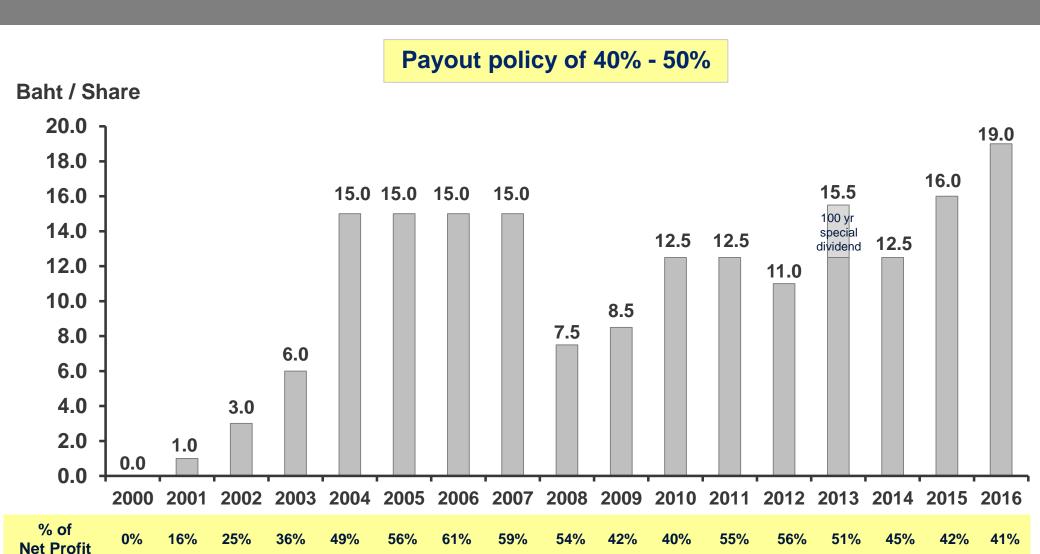


⁻ CAPEX includes debottlenecking, expansion projects, and major turnaround.

⁻ Investments are acquisitions and purchase of shares.

Dividend policy:

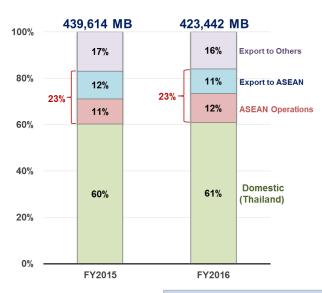


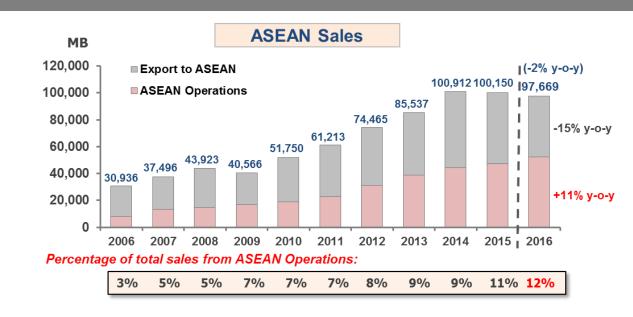


ASEAN expansion progress: Sales Segments in 2016

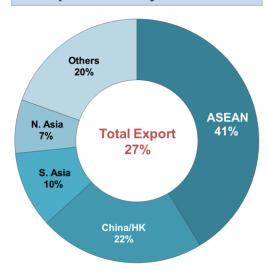








Export Sales by countries



ASEAN Sales by countries



HVA progress: High value added products and services





5-10% higher margin

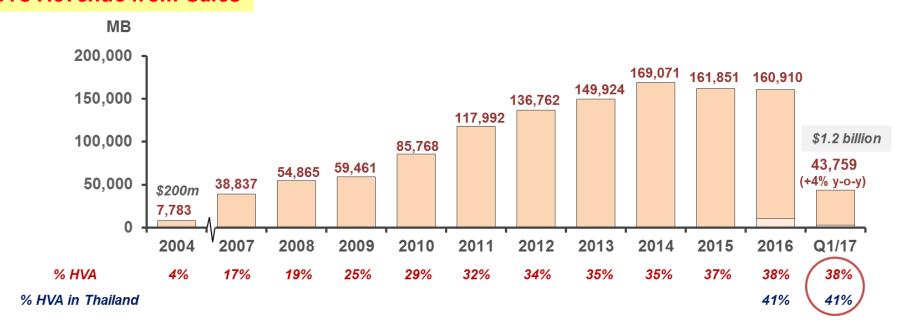
Performance

Branding

Solutions provider

Service & Design

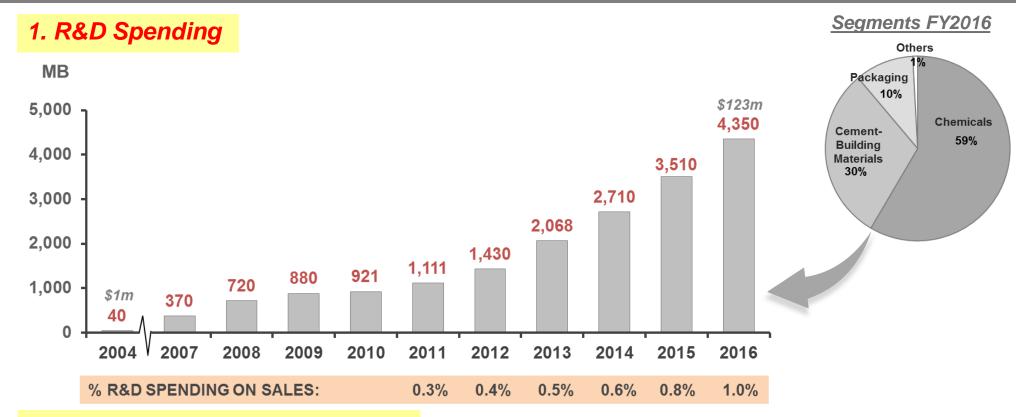
HVA's Revenue from Sales



Business	2013	2014	2015	2016	Q1/17
Cement-Building Materials	41%	42%	41%	41%	44%
Chemicals	27%	27%	31%	31%	29%
Chemicals (Includes associates)	50%	50%	53%	54%	52%
Packaging	38%	39%	39%	43%	45%

R&D: 2017 R&D budget is 1% of sales.





2. R&D and Product Design Team



Note: includes recent acquisition of Norner Group (Norway) 50 R&D staffs (10 Ph.D.)



3. Appendix



Employee's Core Values

- Adherence to Fairness
- Dedication to Excellence
- Believe in the Value of the Individual
- Concern for Social Responsibility

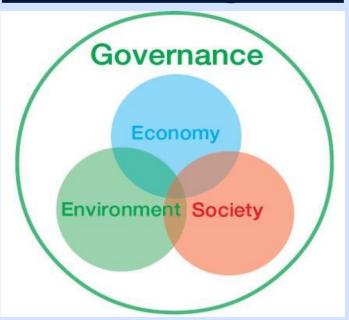
Member since 2003

MEMBER OF

Dow Jones Sustainability Indices

In Collaboration with RobecoSAM (

DJSI Global Recognition



External Learning Programs



Programs	Current	Since	Classes	SCG Participants
AMP – Advanced Management Program	Harvard	1982	33	89
	Wharton	2007	7	14
	IMD	2015	1	1
EDP – Executive Development Program	Columbia	2007	4	177
	IMD	2014	1	45
MAP - Management Acceleration Program	Duke CE	2015	3	136
MDP – Management Development Program	Wharton	1980	36	1,531
	Duke CE	2011	5	276
Marketing Excellence Program	Kellogg	2006	9	615

Note: as of Jan/17

Corporate scholarship:



Total 537 scholarships granted since 1973

MBA

Engineering and Specialist

as of Dec/16

444 449 343 444 445 446

		'11	'12	'13	'14	'15	'16
	JS Harvard	-	-	-	1	-	-
	Chicago	-	-	-	-	-	-
	Stanford	-	-	-	-	-	-
	Wharton	-	1	1	-	-	-
	МІТ	1	-	1	1	-	2
	Columbia	2	2	1	-	1	2
	UC Berkeley	-	-	-	-	-	-
	UCLA	-	-	-	-	-	-
	NYU Stern	-	-	1	-	-	-
	Kellogg	-	1	-	-	-	-
	Dartmouth	-	-	-	-	-	-
	Michigan	-	2	-	1	-	1
	Yale SOM	-	-	-	-	-	-
	Duke	1	-	1	-	1	1
	EU IMD	-	-	1	1	-	1
•	LBS	-	1	-	-	-	1
	HEC	-	-	-	-	-	-
	INSEAD	-	1	-	2	1	-
, G	HKU	-	-	-	-	-	1
ASI	Tsinghua	-	-	-	-	1	-
	NUS (SGR)	-	-	-	-	-	-
	HKUST	1	-	1	3	1	-
	Sasin	-	-	1	-	-	-
	Total	5	8	8	9	5	9

		'11	'12	'13	'14	'15	'16	l
US	МІТ	-	-	-	-	1	-	1
	Stanford	-	-	-	-	-	-	
	GWU	-	-	-	1	1	-	
	Alfred U	-	1	1	-	-	-	
New	Hampshire	-	-	-	1	-	-	
	Purdue	-	-	-	1	-	-	
Ge	eorgia Tech	-	-	-	-	-	-	l
Carn	egie Mellon	2	-	-	1	1	-	l
	Michigan	-	-	-	-	-	-	l
	NYU	1	-	-	-	1	-	l
	Rochester	-	-	-	-	-	2	l
No	rthwestern	1	-	-	-	-	-	
	Chicago	-	-	1	-	1	-	l
	U of Illinois	-	-	-	-	-	1	l
ι	C Berkeley	-	-	-	-	-	1	
So	uthern Calif	-	1	-	-	-	-	
	Penn State	-	-	-	1	-	-	l
	Texas A&M	-	1	-	-	-	-	l
	UNC	-	-	1	-	-	-	l
	Tennessee	1	-	-	-	-	-	l
V	Vashington	-	-	-	-	-	1	l
Ma	artin-Luther	-	-	1	-	-	-	l
Te	exas Austin	-	-	-	1	-	-	1
	Minnesota	-	-	1	-	-	-	l
Po	rtland State	-	-	2	-	-	-	
Cl	emson (SC)	1	-	-	-	-	-	

I,		'11	'12	'13	'14	'15	'16
	UK Oxford	-	-	-	1	-	-
l'	Imperial College	1	-	1	-	-	1
	London School of Economics	-	-	-	-	1	1
	U of Loughborough	-	2	-	-	-	-
	U. of London	-	-	-	-	-	-
	U of Art London	-	-	-	-	1	-
	Cass Business School	-	-	-	-	1	-
	Warwick	4	-	1	3	1	-
	Queen Mary	-	-	1	-	-	-
	U. Of Southampton	-	-	1	-	1	-
	U. Of Stirling	-	-	1	1	-	-
	Brunel U.	-	-	-	1	-	-
	U. Manchester	-	1	-	-	1	1
I	Cranfield	1	-	4	2	1	-
	EPFL (CHE)	-	-	-	1	1	-
	Swansea	-	-	1	-	-	-
	Aalto (FIN))	-	-	-	1	-	-
	U. Dundee (Scotland)	-	-	1	-	-	-
	IFP School (FR)	-	2	1	-	-	-
	Domus Academy (Italy)	-	-	3	-	-	-
	Royal Institute of Tech (SWE)	1	-	-	-	-	-
	Tech U. Munchen (Ger)	-	-	2	-	-	-
1	ASIA Adelaide (AUS)	-	-	1	-	-	-
١	Tokyo Int. (JPN)	-	1	-	-	2	-
	Tokyo Tech (JPN)	-	-	1	-	3	-
	UEC (JPN)	1	-	-	-	-	-
	Waseda U. (JPN)	1	-	-	-	-	-
	U. Tsukuba (JPN)	1	-	-	-	-	-
	Ceramics Tech. (JPN)	-	-	-	-	-	-
	Japan Advanced Int.	-	1	-	-	-	-
	Int. Supply Chain Innovation (Malaysia)	-	-	1	-	-	-
	Chiang Mai U.	-	-	1	-	-	-
	Total	13	10	30	17	24	8

Note: 402 scholars are active, others have mostly retired Current 50 students: MBA 10, Engineering 31, Specialist 9

SCG's capacity (2017)



Chemicals - Naphtha Cracker (consolidated)		Chemicals - Associates (equity accounting)	
Ethylene	1,800,000 tons	Dow Chemicals JV (50%)	
Propylene	1,250,000 tons	- LLDPE	650,000 tons
Chemicals - Downstream (consolidated)		- Propylene Oxide	390,000 tons
HDPE	920,000 tons	- Specialty Elastomer	220,000 tons
LDPE + LLDPE	220,000 tons	- PS	140,000 tons
PP	720,000 tons	- SM	300,000 tons
PVC (Thai, Indo, Viet)	886,000 tons	- Synthetic Latex	18,000 tons
		Mitsui Chemicals JV (20% - 50%)	
Cement - Building Materials (consolidated)		- PTA (50%)	1,440,000 tons
Grey Cement (Thai, Cam, Myan, Indo, Laos, Viet)	33.5 million tons	- PET (20%)	133,000 tons
Ready-Mixed Concrete	550 batching plants	- PP Compound (46%)	168,000 tons
(Thai, Cam, Myan, Indo, Laos, Viet)		- LLDPE Cast Film (45%)	15,000 tons
White Cement (Thai, Viet)		Mitsubishi Rayon JV (47%)	
Ceramic Tiles (Thai, Indo, Phil, Viet)	225 M sqm	- MMA	175,000 tons
Roofing Tiles (Thai, Cam, Phil, Viet)	89 M sqm	- Cast Sheets	20,000 tons
Ceiling & Wall Products	100 M sqm	Chandra Asri JV(30%)	
Lightweight concrete (Thai, Indo)	30 M sqm	- Ethylene	860,000 tons
		- Propylene	470,000 tons
Packaging (consolidated)		- HDPE / LLDPE	336,000 tons
Packaging Paper (Thai, Phil, Viet)	2,549,000 tons	- PP	480,000 tons
Box (Thai, Malay, Sing, Viet, Indo)	1,045,000 tons	- SM	340,000 tons
Printing & Writing Paper	495,000 tons	Bangkok Synthetic (49%)	
Machine Glazed Paper (Nippon Paper JV)	43,000 tons		140,000 tons
Flexible Packaging (Thai, Viet)	590,000 M sqm	- SSBR	

Incremental capacity

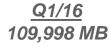


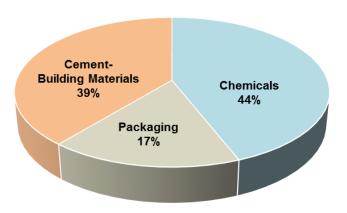
Capacity at year end		Tot	al Capa	city				Capacity at year end	Total Capacity							
Capacity at year end	2011	2012	2012 2013 2014 2015 2016 2017		2017	Capacity at year end	2011	2012	2013	2014	2015	2016	2017			
Chemicals Upstream (Cracker) - ('0	00 tons)							Packaging - ('000 tons)								
Ethylene (subsidary)	1,700	1,700	1,700	1,700	1,700	1,700	1,800	Printing & Writing Paper	570	570	570	570	570	495	495	
Propylene (subsidary)	1,200	1,200	1,200	1,200	1,200	1,200	1,250	Packaging Paper	1,880	1,880	1,956	2,306	2,306	2,306	2,549	
Chandra Asri (30% stake)							_	Box	795	855	1,013	1,013	1,013	1,013	1,045	
Ethylene	600	600	600	600	600	860	860	Machine Glazed Paper	-	-	-	43	43	43	43	
Propylene	320	320	320	320	320	470	470	(Nippon Paper JV)								
								Flexible Packaging (Million sqm.)	-	-	-	290	590	590	590	
								(Thai + Vietnam)								
Chemicals Downstream - ('000 ton	ıs)							Cement - (MT)								
HDPE (subsidiary)	920	920	920	920	920	920	920	Grey Cement (TH, KH, MM, ID, LA, VN)	24	24	24	24	27	29	34	
PP (subsidiary)	720	720	720	720	720	720	720	White Cement (TH, VN)	0.2	0.4	0.4	0.4	0.4	0.4	0.4	
PVC (90% stake in TPC)	886	886	886	886	886	886	886	Mortar	2.1	2.1	2.1	3.2	4.1	6.6	6.6	
Chemicals Downstream (JV) - ('000	tons)							Building Products - (M sqm)								
LLDPE (Dow JV)	650	650	650	650	650	650	650	Ceramic Tiles	149	149	225	225	225	225	225	
Specialty Elastomers (Dow JV)	220	220	220	220	220	220	220	Ceiling & Wall product (TH)	60	68	86	99	99	100	100	
Propylene Oxide (Dow JV)	390	390	390	390	390	390	390	Lightweight concrete (TH, ID)	15	15	21	27	27	30	30	
SSBR (BST JV)	-	-	50	50	50	100	100	Modular Home (Sekisui Heim JV)	200	200	1,000	1,000	1,000	1,000	1,000	
LLDPE cast sheet film	-	-	-	15	15	15	15									
(Mitsui Tohcello JV)																
MMA (Mitsubishi Rayon JV)	175	175	175	175	175	175	175									
Cast Sheets	20	20	20	20	20	20	20									
(Mitsubishi Rayon JV)		ſ														
HDPE / LLDPE (CAP JV)	336	336	336	336	336	336	336									
PP (CAP JV)	480	480	480	480	480	480	480									
SM (CAP JV)	340	340	340	340	340	340	340									

Consolidated Segments

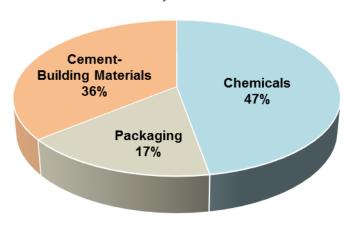






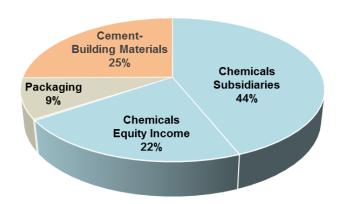


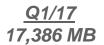
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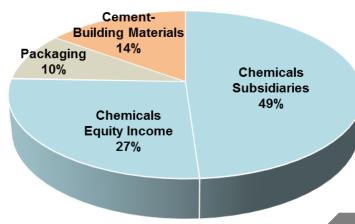


Profit for the Period

Q1/16 13,488 MB

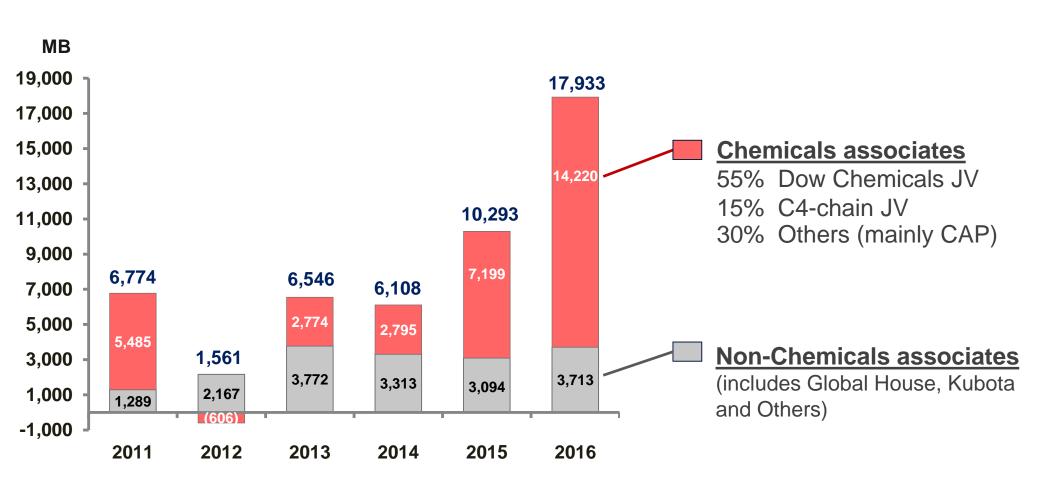






Consolidated Equity Income





Segmented Financials



Sales & Assets (MB):

Sales (MB)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Q1/17
Consolidated	120,353	128,201	148,865	192,395	218,265	258,175	267,737	293,230	238,664	301,323	368,579	407,601	434,251	487,545	439,614	423,442	116,268
Cement	24,183	27,269	30,552	36,658	41,630	44,123	44,087	49,999	46,661	48,954	54,249	67,558					
Building Materials	13,046	16,129	18,147	20,542	22,227	22,745	21,281	23,351	26,873	30,719	34,171	41,340	174,642	185,423	178,988	170,944	44,824
Distribution	53,326	52,191	56,551	68,558	76,070	81,519	86,440	102,672	86,641	96,898	111,920	126,690					
Chemicals	38,152	42,394	50,767	75,185	86,084	122,645	130,223	136,527	101,115	144,317	192,929	203,539	209,997	248,118	200,433	188,163	54,271
Packaging	26,995	29,305	33,564	38,265	40,306	42,645	43,890	47,110	42,729	51,714	54,839	57,430	59,135	64,614	70,907	74,542	19,841
													-				
Assets (MB)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Q1/17
Assets (MB) Consolidated	2001 174,804																Q1/17 562,170
,								285,776			373,789						
Consolidated	174,804	167,388	176,566	191,081	199,370	226,264	248,256	285,776	315,992	359,219	373,789 60,115	395,573 66,808	440,633	465,823	509,981	539,688	
Consolidated Cement	174,804 59,618	167,388 60,624	176,566 56,315	191,081 54,801	199,370 55,953	226,264 57,791	248,256 60,132	285,776 60,770 22,654	315,992 60,681 22,991	359,219 61,018	373,789 60,115	395,573 66,808	440,633	465,823	509,981	539,688	562,170
Consolidated Cement Building Materials	174,804 59,618 16,023	167,388 60,624 15,338	176,566 56,315 15,771	191,081 54,801 18,068	199,370 55,953 20,259	226,264 57,791 20,595	248,256 60,132 19,863 11,143	285,776 60,770 22,654 10,903	315,992 60,681 22,991 10,110	359,219 61,018 24,796 12,177	373,789 60,115 35,845 16,234	395,573 66,808 43,512 24,463	440,633 155,458	465,823 168,662	509,981 187,976	539,688 203,068	562,170

Segmented Financials



EBITDA & Profit for the Period (MB):

EBITDA (MB)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Q1/17
Consolidated	28,884	30,418	37,188	54,626	53,507	57,151	50,008	38,783	47,116	45,949	46,253	45,716	61,265	66,493	82,690	97,816	28,108
Cement	7,615	7,917	11,581	13,175	13,235	12,200	10,198	11,272	11,616	10,810	12,781	14,824					
Building Materials	3,140	3,605	4,382	5,307	5,387	4,856	3,928	4,085	4,907	5,489	5,060	6,661	26,274	26,683	24,395	23,639	6,273
Distribution	1,268	1,214	602	1,541	1,546	1,498	1,576	1,739	1,581	1,440	1,532	1,564					
Chemicals	6,443	6,452	9,851	23,642	19,653	26,199	22,611	12,598	19,482	16,024	14,394	8,628	20,342	26,142	42,900	60,713	17,010
Packaging	8,205	9,536	9,819	9,840	9,496	9,634	7,943	6,660	7,901	9,129	8,811	8,844	9,473	9,718	10,831	10,884	3,852
Profit for the Period (MB)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Q1/17
Profit for the Period (MB) Consolidated	2001 7,634	2002 14,604	2003 19,954	2004 36,483	2005 32,236	2006 29,451	2007 30,352	2008 16,771	2009 24,346	2010 37,382	2011 27,281	2012 23,580	2013 36,522	2014 33,615	2015 45,400	2016 56,084	Q1/17 17,386
, ,																	
Consolidated	7,634	14,604	19,954	36,483	32,236	29,451	30,352	16,771	24,346	37,382	27,281	23,580					
Consolidated Cement	7,634 859	14,604 2,006	19,954 5,313	36,483 6,582	32,236 7,916	29,451 6,652	30,352 5,463	16,771 6,006	24,346 6,214	37,382 6,014	27,281 7,288	23,580 9,163	36,522	33,615	45,400	56,084	17,386
Consolidated Cement Building Materials	7,634 859 410	14,604 2,006 1,521	19,954 5,313 2,253	36,483 6,582 2,700	32,236 7,916 3,071	29,451 6,652 1,939	30,352 5,463 950	16,771 6,006 778	24,346 6,214 1,617	37,382 6,014 1,872	27,281 7,288 1,476	23,580 9,163 2,949	36,522	33,615	45,400	56,084	17,386



Thank You