

1. News Summary (3 page)

2017년 6월 20일

News	
WTI comment	공급 우려 속 7개월만에 최저치...WTI 1.2%↓
Headline	원전·석탄 가고 신재생·LNG 온다... 전환점 맞은 에너지정책
News 1.	LNG·태양광 고비용에 ... '원전 제로' 일본, 원자로 다시 켜다
News 2.	美 천연가스, 4개월 래 가장 큰 폭으로 하락
News 3.	-
News 4.	-

Conclusion	
	가스 발전이 더욱 확대될 전망이다며 PNG도입 논의도 본격화될 것
	LNG 가격의 우하향이 전망되는 가운데 원전 비율 주목할 필요 있음
	세일가스 증산 기조가 이어지며 공급 과잉으로 가격 하락 부추길 것
	-
	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	44.2	(1.2)	(4.1)	(12.9)	(8.3)	(10.5)
Dubai	\$/bbl	45.7	(0.4)	(2.8)	(13.5)	(8.7)	(1.8)
Gasoline	\$/bbl	58.2	(0.1)	(4.4)	(12.9)	(7.4)	(1.1)
Diesel	\$/bbl	57.4	(0.7)	(0.6)	(9.8)	(6.7)	(2.1)
Complex margin ¹	\$/bbl	7.5	(0.1)	0.3	0.9	1.0	1.7
1M lagging	\$/bbl	2.8	0.4	(3.1)	(3.6)	0.2	(4.8)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	414	0.7	(1.7)	(8.9)	(11.1)	(1.2)
Butadiene	\$/t	825	0.0	(4.6)	(18.3)	(60.7)	(12.2)
HDPE	\$/t	1,075	(0.5)	(1.4)	(3.2)	(6.5)	(2.3)
MEG	\$/t	750	(4.5)	(5.1)	(2.8)	(8.5)	23.8
PX	\$/t	776	(0.1)	0.3	(5.0)	(9.0)	(1.3)
SM	\$/t	1,094	(1.0)	(1.5)	(1.5)	(15.3)	11.9
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.89	(4.7)	(4.3)	(15.5)	(10.3)	(4.5)
Natural rubber	\$/t	1,430	(0.7)	4.4	(7.1)	(27.8)	11.7
Cotton	C/lbs	71.4	(0.7)	(5.0)	(8.9)	(7.7)	10.9

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	06/12	\$/t	855	(5.0)	(18.2)	(25.3)	(17.6)
Propylene	06/12	\$/t	725	(2.0)	(3.0)	(20.8)	0.7
Benzene	06/12	\$/t	763	(0.7)	4.1	(16.0)	21.0
Toluene	06/12	\$/t	650	0.0	(0.8)	(8.5)	4.8
Xylene	06/12	\$/t	625	0.8	(0.8)	(14.4)	(0.8)
PP	06/12	\$/t	1,048	0.0	1.0	(7.1)	10.8
PVC	06/12	\$/t	880	0.0	0.0	(6.4)	12.8
ABS	06/12	\$/t	1,640	0.0	1.2	(12.8)	27.6
SBR	06/12	\$/t	1,500	(9.1)	(14.3)	(45.5)	12.8
SM	06/12	\$/t	1,135	1.1	9.9	(15.6)	12.4
BPA	06/12	\$/t	1,428	(2.4)	8.8	2.5	14.7
Caustic	06/12	\$/t	438	0.0	0.0	(0.3)	48.3
2-EH	06/12	\$/t	940	0.0	10.6	(8.3)	19.0
Caprolactam	06/12	\$/t	1,600	1.9	(5.9)	(31.0)	26.0
Solar				%	%	%	%
Polysilicon	06/14	\$/kg	14.0	(0.5)	4.2	(11.2)	(17.5)
Module	06/14	\$/W	0.33	0.0	(0.3)	(3.5)	(34.2)

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	82.8	(0.9)	(0.2)	1.0	0.9	(8.8)
Shell	EUR	2,131	0.7	(0.1)	0.6	0.4	20.6
Petrochina	CNY	7.65	0.0	0.1	0.7	(3.7)	6.3
Gazprom	RUB	117.3	1.1	(2.6)	(5.5)	(9.0)	(15.8)
Petrobras	BRL	12.3	0.1	(4.7)	(9.8)	(6.6)	37.3
Refinery							
Phillips66	USD	81.2	0.4	1.3	3.8	1.6	3.5
Valero	USD	66.6	1.2	1.0	4.3	(3.3)	28.8
JX	JPY	485.8	(0.6)	(1.1)	(1.5)	(10.5)	20.2
Neste Oil	EUR	35.8	0.9	4.0	(3.7)	3.4	22.7

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	87.2	2.3	1.1	1.7	(2.3)	27.9
Dow Chemical	USD	65.2	1.3	1.9	6.4	1.9	23.2
SABIC	SAR	103.2	1.7	4.2	6.0	6.7	26.1
Formosa Pla.	TWD	90.7	1.2	1.6	3.1	(0.7)	18.3
Shin-Etsu	JPY	10,060	1.3	0.7	2.7	4.1	68.5
Renewable							
Wacker	EUR	94.6	3.6	1.0	(4.2)	(5.1)	18.6
First Solar	USD	36.35	1.5	(0.1)	0.0	14.2	(25.1)
GCL-Poly	HKD	0.75	2.7	(3.8)	(15.7)	(29.9)	(25.7)
Tesla Motors	USD	369.8	(0.4)	3.0	19.0	41.4	71.6

4. Coverage Summary

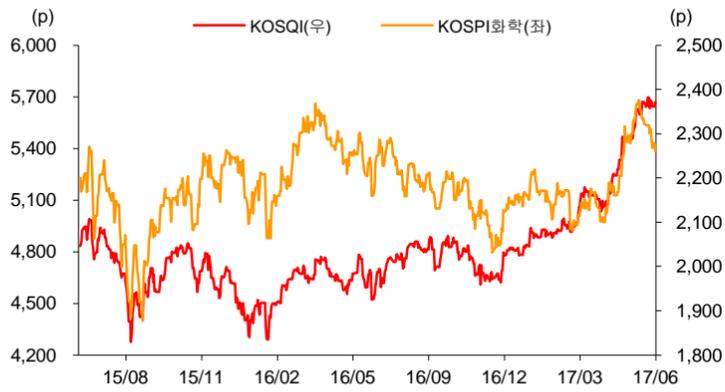
	06/19	1D	1W	1M	3M	6M	12M
KOSPI	2,371	0.4	0.6	3.6	8.8	16.1	21.4
KOSPI화학	5,387	(0.8)	(1.8)	(1.8)	5.5	6.0	2.8
LG화학	279,000	0.4	(3.6)	(1.1)	(5.4)	11.2	7.7
롯데케미칼	330,000	(1.0)	(4.9)	(6.0)	(11.2)	(5.7)	22.9
한화케미칼	29,000	0.3	(1.9)	1.2	14.6	15.8	16.7
금호석유화학	74,200	(1.5)	(3.1)	0.0	(1.9)	(8.2)	21.8
KCC	396,000	(0.3)	(0.5)	10.9	10.0	6.0	6.2
OCI	92,500	2.2	3.0	5.4	9.1	24.3	0.0
SKC	33,400	(1.0)	7.6	14.6	9.5	2.8	23.0
국도화학	53,700	0.4	1.3	15.5	11.2	(5.0)	(9.6)
SK이노베이션	161,000	1.3	0.9	(4.2)	(4.2)	5.9	13.0
S-Oil	95,800	(0.1)	(1.6)	(6.1)	(3.5)	16.4	21.9
GS	66,600	(0.3)	(4.9)	2.5	17.3	22.0	35.9
SK가스	124,500	(2.0)	6.4	6.9	2.0	5.1	46.1
포스코대우	22,350	(1.5)	(4.5)	(4.1)	(3.5)	(23.1)	(9.7)
LG상사	30,950	(1.3)	(3.6)	(1.3)	3.7	(0.5)	(16.9)
한국전력	42,050	(3.1)	(4.4)	(0.5)	(8.4)	(8.8)	(28.2)
한국가스공사	51,000	0.4	2.9	0.8	13.3	4.6	25.8

투자 의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	330,000	18.3	12.78	1.37
매수	410,000	24.2	10.16	1.18
매수	28,000	(3.4)	12.48	0.85
매수	100,000	34.8	10.95	1.33
매수	450,000	13.6	17.39	0.62
매수	100,000	8.1	16.08	0.70
매수	40,000	19.8	11.53	0.83
매수	70,000	30.4	9.72	0.62
매수	180,000	11.8	10.38	0.84
매수	100,000	4.4	13.45	1.48
매수	70,000	5.1	9.26	1.00
매수	140,000	12.4	11.84	1.11
매수	29,000	29.8	11.05	1.07
매수	42,000	35.7	10.74	0.94
매수	60,000	42.7	7.27	0.33
매수	60,000	17.6	8.66	0.60

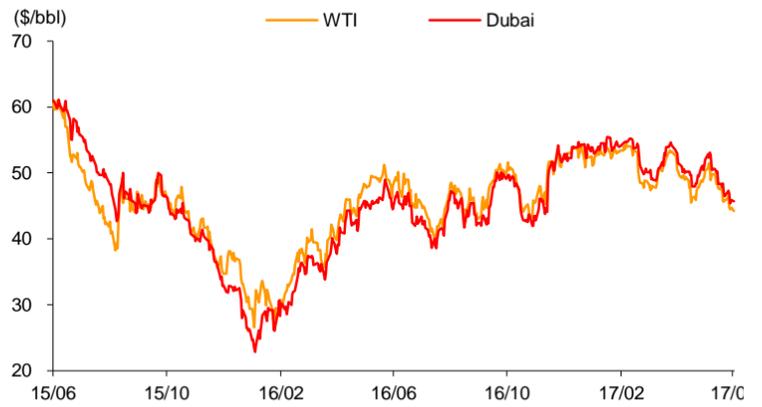
· 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
· 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
· 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
· 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

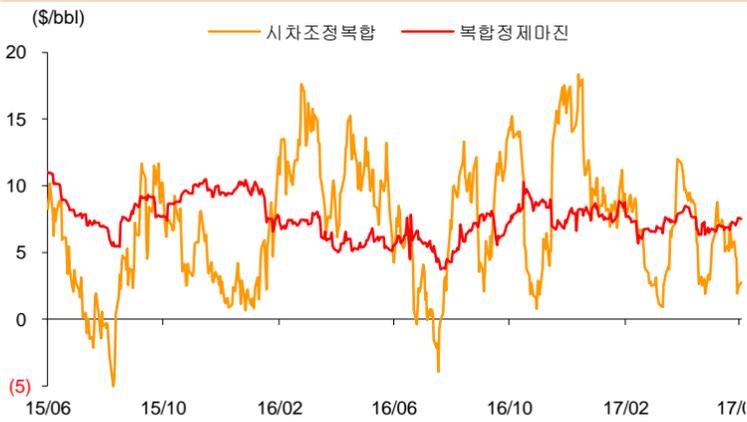
KOSPI/KOSPI화학



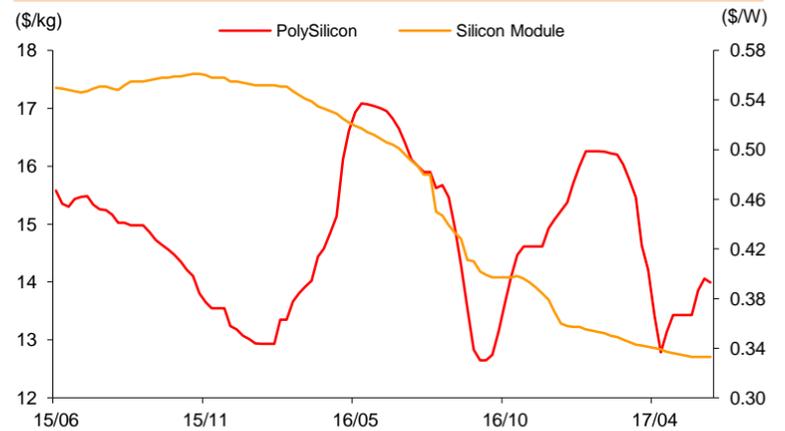
WTI/Dubai



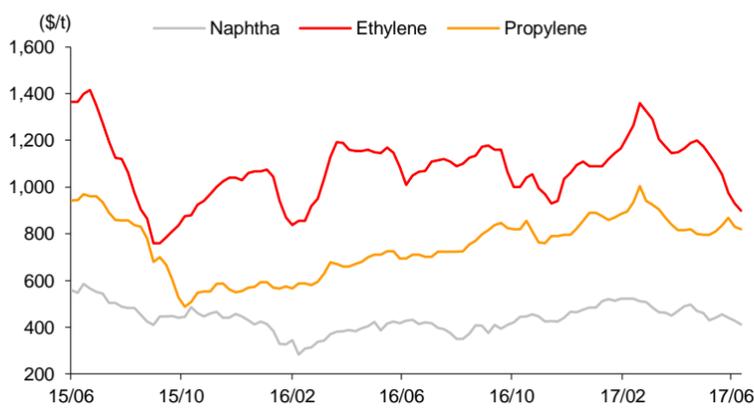
Complex & 1M lagging margin



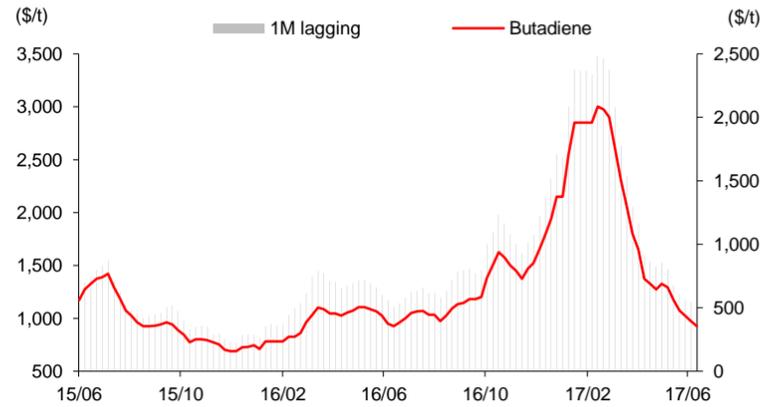
Polysilicon & Module prices



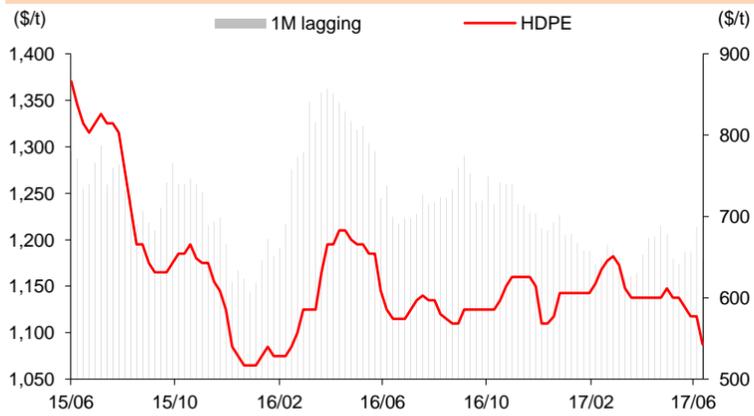
Naphtha/Ethylene/Propylene prices



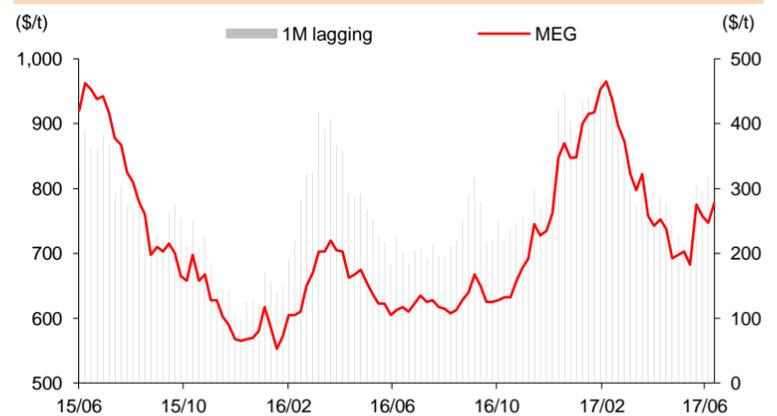
Butadiene price & 1M lagging naphtha spread



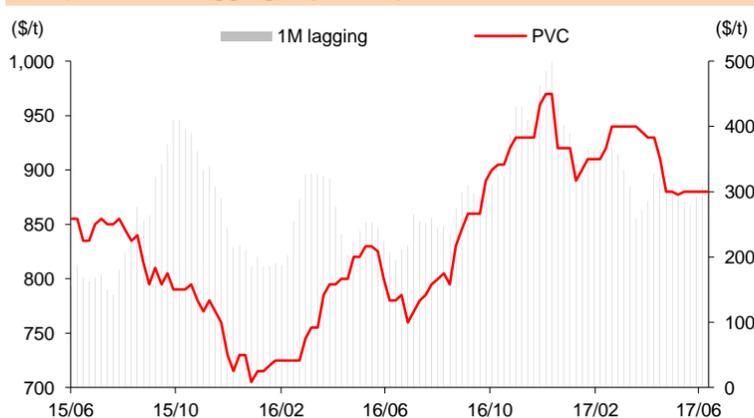
HDPE price & 1M lagging naphtha spread



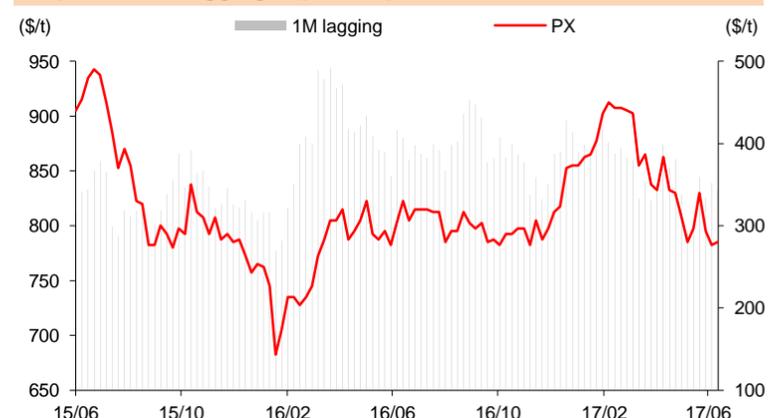
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Cischem, Petronet, Platts, Pviewsights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

News Comment

Headline (출처: 아시아투데이)

제목 원전·석탄 가고 신재생·LNG 온다... 전환점 맞은 에너지정책

결론 가스 발전이 더욱 확대될 전망이며 LNG도입 논의도 본격화될 것

세부

- 1) 고리원전 1호기 퇴역을 계기로, 우리나라 에너지 정책이 전환점을 맞음
- 2) 원자력과 석탄발전의 비중이 축소되고 LNG와 태양광·풍력 등이 확대됨
- 3) 신규원전인 천지 1·2호기, 신한울 3·4호기 건설계획이 전면 백지화됨
- 4) 구체적인 로드맵은 올해 말 발표되는 8차 전력수급 기본계획에 담길 것
- 5) 가스 발전이 더욱 확대될 전망이며 LNG도입 논의도 본격화될 것

Issue 1 (출처: 중앙일보)

제목 LNG·태양광 고비용에 ... '원전 제로' 일본, 원자로 다시 켜다

결론 LNG 가격의 우하향이 전망되는 가운데 원전 비율 주목할 필요 있음

세부

- 1) 아베 정부는 탈원전 정책을 전면 재검토하고 원전 재가동을 서두름
- 2) 후쿠시마 사고후 금기시됐던 원전 수명 연장과 신규 증설 추진 본격화
- 3) 탄소 저감책 마련과 발전연료 단가를 고려하면 원전을 뿌리치기 힘들
- 4) 전체 전원 구성에서 원전 비율을 2030년까지 20~22%로 끌어올릴 계획
- 5) LNG 가격의 우하향이 전망되는 가운데 원전 비율 주목할 필요 있음

Issue 3

제목

결론

세부

- 1)
- 2)
- 3)
- 4)
- 5)

Issue 5

제목

결론

세부

- 1)
- 2)
- 3)
- 4)
- 5)

WTI Comment (출처: 연합뉴스)

제목 공급 우려 속 7개월만에 최저치...WTI 1.2%↓

상승

요인

하락 리비아와 나이지리아의 원유 생산마저 늘어나고 있음

요인 미국 셰일오일 생산은 계속 늘어나고 있음

Issue 2 (출처: Bloomberg)

제목 美 천연가스, 4개월 래 가장 큰 폭으로 하락

결론 셰일가스 증산 기조가 이어지며 공급 과잉으로 가격 하락 부추길 것

세부

- 1) 美 천연가스 7월 선물 가격이 온화한 날씨 전망 속 4.7% 하락
- 2) 미주 중부지방과 동부 걸프연안 지역 온도가 대부분 평균 하회할 전망
- 3) 여름 날씨가 시원할 것이라는 전망이 가격 하락에 영향을 줌
- 4) 셰일가스 생산량이 늘어나며 가격 하락 압력이 작용하는 중
- 5) 셰일가스 증산 기조가 이어지며 공급 과잉으로 가격 하락 부추길 것

Issue 4

제목

결론

세부

- 1)
- 2)
- 3)
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- 5)

Issue 6

제목

결론

세부

- 1)
- 2)
- 3)
- 4)
- 5)

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
F/X	USD/EUR	0.897	0.893	0.893	0.892	0.931	0.961	0.887	0.951	0.901	0.904	0.926	
	Change, %		0.4	0.5	0.5	(3.7)	(6.7)	1.2	(5.6)	(0.5)	(0.8)	(3.1)	
	USD/JPY	111.5	110.9	110.0	111.3	112.7	117.1	104.2	117.0	121.1	108.8	112.4	
	Change, %		0.6	1.4	0.2	(1.0)	(4.8)	7.1	(4.7)	(7.9)	2.5	(0.8)	
	USD/KRW	1,132.7	1,134.2	1,127.3	1,126.9	1,131.8	1,187.0	1,173.1	1,205.8	1,131.2	1,160.5	1,142.2	
	Change, %		(0.1)	0.5	0.5	0.1	(4.6)	(3.4)	(6.1)	0.1	(2.4)	(0.8)	
	Agriculture	Corn	375.3	384.0	377.3	372.5	367.5	353.3	437.8	352.0	376.8	358.5	366.3
		Change, %		(2.3)	(0.5)	0.7	2.1	6.2	(14.3)	6.6	(0.4)	4.7	2.4
Soybean		937.8	939.0	931.3	953.0	1,000.0	1,021.5	1,159.5	996.5	945.4	987.5	985.0	
Change, %			(0.1)	0.7	(1.6)	(6.2)	(8.2)	(19.1)	(5.9)	(0.8)	(5.0)	(4.8)	
Wheat		467.0	465.3	434.0	435.3	436.3	405.0	481.3	408.0	508.1	436.4	430.0	
Change, %			0.4	7.6	7.3	7.0	15.3	(3.0)	14.5	(8.1)	7.0	8.6	
Rice		11.5	11.4	11.3	10.8	9.9	9.5	11.3	9.4	11.1	10.3	10.0	
Change, %			1.1	1.9	6.4	16.2	21.6	2.0	23.1	4.2	11.4	15.4	
Oats		268.3	269.3	249.8	241.8	250.0	225.5	208.3	228.5	250.2	196.3	245.2	
Change, %			(0.4)	7.4	11.0	7.3	19.0	28.8	17.4	7.2	36.7	9.4	
MYR/mt		Palm Oil	2,640.0	2,656.0	2,680.0	2,885.0	2,966.0	3,166.0	2,485.0	3,218.0	2,190.3	2,653.8	2,947.4
		Change, %		(0.6)	(1.5)	(8.5)	(11.0)	(16.6)	6.2	(18.0)	20.5	(0.5)	(10.4)
	Cocoa	1,898.0	1,975.0	2,059.0	2,028.0	2,013.0	2,303.0	3,106.0	2,126.0	3,091.6	2,854.0	2,023.7	
	Change, %		(3.9)	(7.8)	(6.4)	(5.7)	(17.6)	(38.9)	(10.7)	(38.6)	(33.5)	(6.2)	
	Cotton	71.4	71.9	75.1	79.5	78.4	69.6	64.6	70.7	63.3	65.6	76.2	
	Change, %		(0.7)	(5.0)	(10.1)	(8.9)	2.6	10.6	1.0	12.8	8.8	(6.3)	
	Sugar	13.5	13.4	14.0	16.4	18.2	18.2	19.8	19.5	13.1	18.2	17.7	
	Change, %		0.1	(4.0)	(17.8)	(25.9)	(26.2)	(31.9)	(31.0)	2.4	(25.8)	(23.8)	
	Coffee	124.2	123.6	127.6	132.1	140.8	141.2	140.8	137.1	132.6	136.1	138.5	
	Change, %		0.5	(2.7)	(6.0)	(11.8)	(12.0)	(11.8)	(9.4)	(6.4)	(8.7)	(10.4)	
	Energy	WTI	44.1	44.7	46.1	50.3	48.8	52.1	48.0	53.7	48.8	43.4	50.5
		Change, %		(1.4)	(4.3)	(12.4)	(9.6)	(15.4)	(8.1)	(17.9)	(9.7)	1.7	(12.7)
Brent		46.9	47.4	48.3	53.6	51.8	54.9	49.2	56.8	53.7	45.1	53.2	
Change, %			(1.0)	(2.9)	(12.5)	(9.4)	(14.6)	(4.6)	(17.5)	(12.6)	4.0	(11.9)	
Natural Gas		2.9	3.0	3.0	3.3	2.9	3.4	2.6	3.7	2.6	2.6	3.1	
Change, %			(4.7)	(4.3)	(11.1)	(1.8)	(14.7)	10.3	(22.3)	10.1	13.4	(7.3)	
Ethanol		1.6	1.6	1.5	1.5	1.5	1.6	1.7	1.6	1.5	1.5	1.5	
Change, %			(1.3)	1.0	4.5	0.6	(2.7)	(7.5)	(3.5)	2.7	2.3	0.7	
RBOB Gasoline		145.3	145.5	148.8	165.2	159.9	156.4	150.5	166.5	163.6	140.0	159.1	
Change, %			(0.1)	(2.4)	(12.1)	(9.1)	(7.1)	(3.5)	(12.7)	(11.2)	3.8	(8.7)	
Coal	81.2	80.9	79.5	74.3	81.3	86.2	52.6	88.4	59.0	65.5	80.9		
Change, %		0.4	2.2	9.4	(0.1)	(5.8)	54.5	(8.1)	37.7	24.0	0.4		
Metal	Gold	1,243.6	1,253.7	1,265.9	1,255.9	1,229.3	1,137.9	1,299.0	1,152.3	1,160.6	1,248.5	1,238.0	
	Change, %		(0.8)	(1.8)	(1.0)	1.2	9.3	(4.3)	7.9	7.2	(0.4)	0.4	
	Silver	16.5	16.7	17.0	16.9	17.4	16.0	17.5	15.9	15.7	17.1	17.4	
	Change, %		(1.2)	(2.8)	(2.3)	(5.2)	3.3	(5.8)	3.6	4.9	(3.6)	(5.2)	
	Copper	5,724.0	5,663.0	5,772.0	5,682.0	5,935.0	5,496.0	4,552.0	5,535.5	5,503.1	4,872.0	5,768.7	
	Change, %		1.1	(0.8)	0.7	(3.6)	4.1	25.7	3.4	4.0	17.5	(0.8)	
	Nickel	580.1	574.7	564.0	602.5	671.9	736.3	606.5	682.0	759.5	646.4	647.4	
	Change, %		0.9	2.9	(3.7)	(13.7)	(21.2)	(4.4)	(14.9)	(23.6)	(10.3)	(10.4)	
	Zinc	2,556.0	2,527.0	2,495.0	2,616.0	2,882.0	2,607.0	1,979.5	2,576.0	1,941.9	2,097.5	2,694.5	
	Change, %		1.1	2.4	(2.3)	(11.3)	(2.0)	29.1	(0.8)	31.6	21.9	(5.1)	
	Lead	2,107.0	2,091.5	2,035.5	2,086.8	2,285.5	2,154.3	1,688.8	2,003.5	1,791.2	1,868.3	2,216.7	
	Change, %		0.7	3.5	1.0	(7.8)	(2.2)	24.8	5.2	17.6	12.8	(4.9)	
	Aluminum	13,645.0	13,520.0	13,620.0	13,950.0	13,755.0	12,710.0	12,095.0	12,765.0	12,184.0	12,373.5	13,721.1	
	Change, %		0.9	0.2	(2.2)	(0.8)	7.4	12.8	6.9	12.0	10.3	(0.6)	
	Cobalt	57,500.0	57,750.0	56,350.0	54,250.0	52,750.0	32,215.0	23,665.0	32,734.0	28,444.4	25,480.1	49,115.4	
	Change, %		(0.4)	2.0	6.0	9.0	78.5	143.0	75.7	102.1	125.7	17.1	
HR Coil	589.0	589.0	598.0	613.0	625.0	585.0	628.0	633.0	461.5	519.3	621.1		
Change, %		0.0	(1.5)	(3.9)	(5.8)	0.7	(6.2)	(7.0)	27.6	13.4	(5.2)		
Scrap	355.0	355.0	357.1	350.0	335.0	295.0	265.0	302.0	252.9	275.7	337.3		
Change, %		0.0	(0.6)	1.4	6.0	20.3	34.0	17.5	40.3	28.8	5.2		

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		06/19	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Crude Oil	WTI	44.2	44.7	46.1	50.7	48.2	52.1	49.4	53.7	48.8	43.4	50.5	
	<i>Change, %</i>		(1.2)	(4.1)	(12.9)	(8.3)	(15.2)	(10.5)	(17.7)	(9.4)	1.9	(12.5)	
	Dubai	45.7	45.9	47.0	52.8	50.1	52.9	46.5	53.8	50.8	41.3	51.8	
	<i>Change, %</i>		(0.4)	(2.8)	(13.5)	(8.7)	(13.6)	(1.8)	(15.1)	(10.1)	10.6	(11.8)	
Crude Oil Product	Gasoline(휘발유)	58.2	58.2	60.9	66.8	62.8	67.3	58.8	69.8	69.5	56.3	66.4	
	<i>Change, %</i>		(0.1)	(4.4)	(12.9)	(7.4)	(13.5)	(1.1)	(16.7)	(16.3)	3.4	(12.4)	
	Kerosene(등유)	56.6	57.4	57.2	63.3	60.4	65.3	59.1	66.4	64.7	52.9	62.8	
	<i>Change, %</i>		(1.4)	(1.1)	(10.6)	(6.4)	(13.3)	(4.2)	(14.8)	(12.6)	7.0	(10.0)	
	Diesel(경유)	57.4	57.8	57.7	63.6	61.5	64.3	58.6	65.5	64.8	52.1	63.4	
	<i>Change, %</i>		(0.7)	(0.6)	(9.8)	(6.7)	(10.8)	(2.1)	(12.5)	(11.5)	10.0	(9.5)	
	Bunker-C	45.0	45.3	45.4	48.8	45.0	51.6	37.3	52.1	45.3	35.5	48.0	
	<i>Change, %</i>		(0.6)	(0.8)	(7.7)	(0.0)	(12.8)	20.7	(13.6)	(0.6)	26.6	(6.3)	
	Naphtha	44.3	44.9	45.4	50.3	49.9	51.9	46.0	53.5	52.6	42.6	51.7	
	<i>Change, %</i>		(1.3)	(2.4)	(11.9)	(11.2)	(14.6)	(3.6)	(17.1)	(15.8)	4.0	(14.4)	
	Dubai Spread	Gasoline(휘발유)	12.5	12.4	13.8	14.0	12.7	14.4	12.3	16.0	18.7	14.9	14.6
		<i>Change</i>		0.1	(1.4)	(1.5)	(0.3)	(1.9)	0.2	(3.5)	(6.3)	(2.5)	(2.1)
Kerosene(등유)		10.9	11.5	10.2	10.5	10.4	12.4	12.5	12.6	14.0	11.6	11.0	
<i>Change</i>			(0.6)	0.7	0.4	0.5	(1.5)	(1.7)	(1.7)	(3.1)	(0.7)	(0.2)	
Diesel(경유)		11.7	11.9	10.7	10.8	11.4	11.4	12.0	11.7	14.0	10.8	11.6	
<i>Change</i>			(0.2)	1.0	0.9	0.3	0.3	(0.4)	(0.0)	(2.3)	0.9	0.1	
Bunker-C		(0.7)	(0.6)	(1.7)	(4.0)	(5.0)	(1.3)	(9.3)	(1.8)	(5.5)	(5.8)	(3.8)	
<i>Change</i>			(0.1)	1.0	3.4	4.4	0.6	8.6	1.1	4.8	5.1	3.1	
Naphtha		(1.4)	(1.0)	(1.6)	(2.5)	(0.2)	(1.0)	(0.6)	(0.4)	1.8	1.3	(0.1)	
<i>Change</i>			(0.4)	0.2	1.2	(1.2)	(0.4)	(0.8)	(1.0)	(3.2)	(2.7)	(1.3)	
Refining Margin	Simple(단순)	3.9	4.0	3.2	2.0	1.7	3.8	0.2	3.8	3.3	1.9	2.6	
	<i>Change</i>		(0.1)	0.6	1.9	2.1	0.1	3.7	0.1	0.6	2.0	1.3	
	Complex(복합)	7.5	7.6	7.2	6.6	6.5	7.8	5.8	8.3	9.3	7.0	7.4	
	<i>Change</i>		(0.1)	0.3	0.9	1.0	(0.3)	1.7	(0.8)	(1.8)	0.5	0.1	
	Complex(lagging)	2.8	2.4	5.8	6.4	2.6	17.2	7.6	18.0	7.3	8.5	6.9	
	<i>Change</i>		0.4	(3.1)	(3.6)	0.2	(14.4)	(4.8)	(15.2)	(4.5)	(5.7)	(4.1)	

자료 : Petronet, SK증권

참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음

참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

Petrochemical Price Data

Daily Price			06/19	06/16	06/15	06/14	06/13	06/12	06/09	06/08	06/07	06/06
Spot Price	Naphtha	CFR Japan	414.0	411.3	409.0	417.8	420.8	421.3	416.8	419.3	428.0	425.6
	Ethylene	CFR SE Asia	880.0	880.0	880.0	880.0	880.0	875.0	875.0	885.0	885.0	885.0
	Propylene	FOB Korea	835.0	825.0	815.0	804.0	804.0	800.0	810.0	823.0	824.0	829.0
	Butadiene	FOB Korea	825.0	825.0	865.0	865.0	865.0	865.0	865.0	905.0	905.0	905.0
	HDPE	CFR FE Asia	1,075.0	1,080.0	1,090.0	1,090.0	1,090.0	1,090.0	1,090.0	1,090.0	1,090.0	1,095.0
	LDPE	CFR FE Asia	1,125.0	1,135.0	1,140.0	1,140.0	1,140.0	1,150.0	1,150.0	1,150.0	1,150.0	1,185.0
	LLDPE	CFR FE Asia	1,050.0	1,050.0	1,075.0	1,075.0	1,080.0	1,080.0	1,080.0	1,080.0	1,080.0	1,085.0
	MEG	CFR China	750.0	785.0	805.0	810.0	810.0	790.0	775.0	775.0	767.0	764.0
	PP	CFR FE Asia	965.0	960.0	960.0	970.0	970.0	975.0	970.0	970.0	970.0	970.0
	PX	CFR China	776.3	777.0	774.7	783.0	781.3	774.3	772.3	775.0	776.7	777.3
	PTA	CFR China	614.0	617.0	620.0	620.0	620.0	617.0	617.0	620.0	620.0	617.0
	Benzene	FOB Korea	752.5	749.5	763.0	778.0	773.0	766.0	743.0	740.0	746.0	746.0
	Toluene	FOB Korea	605.0	609.0	608.0	610.0	610.0	612.0	612.0	612.0	615.0	612.0
	Xylene	FOB Korea	636.5	636.5	636.0	640.0	640.0	635.0	632.0	632.0	637.0	638.0
	SM	FOB Korea	1,093.5	1,104.0	1,126.0	1,132.0	1,120.0	1,110.0	1,106.0	1,102.0	1,092.0	1,082.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	Naphtha	CFR Japan	411.5	428.0	441.5	464.0	522.0	432.5	484.5	493.0	399.5	477.9
	<i>Change, %</i>			(3.9)	(6.8)	(11.3)	(21.2)	(4.9)	(15.1)	(16.5)	3.0	(13.9)
	Ethylene	CFR SE Asia	855.0	900.0	1,045.0	1,145.0	1,125.0	1,037.5	990.0	1,103.7	1,040.9	1,054.6
	<i>Change, %</i>			(5.0)	(18.2)	(25.3)	(24.0)	(17.6)	(13.6)	(22.5)	(17.9)	(18.9)
	Propylene	CFR SE Asia	725.0	740.0	747.5	915.0	1,000.0	720.0	815.0	770.0	705.7	862.4
	<i>Change, %</i>			(2.0)	(3.0)	(20.8)	(27.5)	0.7	(11.0)	(5.8)	2.7	(15.9)
	Butadiene	CFR SE Asia	875.0	925.0	1,125.0	2,250.0	2,950.0	885.0	2,100.0	877.5	1,116.8	1,914.4
	<i>Change, %</i>			(5.4)	(22.2)	(61.1)	(70.3)	(1.1)	(58.3)	(0.3)	(21.7)	(54.3)
	Benzene	CFR SE Asia	762.5	767.5	732.5	907.5	1,075.0	630.0	822.5	690.0	646.7	874.3
	<i>Change, %</i>			(0.7)	4.1	(16.0)	(29.1)	21.0	(7.3)	10.5	17.9	(12.8)
	Toluene	CFR SE Asia	650.0	650.0	655.0	710.0	775.0	620.0	690.0	700.8	630.5	700.4
	<i>Change, %</i>			0.0	(0.8)	(8.5)	(16.1)	4.8	(5.8)	(7.2)	3.1	(7.2)
	Xylene	CFR SE Asia	625.0	620.0	630.0	730.0	720.0	630.0	675.0	699.3	627.7	688.3
	<i>Change, %</i>			0.8	(0.8)	(14.4)	(13.2)	(0.8)	(7.4)	(10.6)	(0.4)	(9.2)

Spread	Ethylene	-Naphtha	443.5	472.0	603.5	681.0	603.0	605.0	505.5	610.6	641.4	576.7
	<i>Change, %</i>			(6.0)	(26.5)	(34.9)	(26.5)	(26.7)	(12.3)	(27.4)	(30.9)	(23.1)
	Propylene	-Naphtha	313.5	312.0	306.0	451.0	478.0	287.5	330.5	277.0	306.2	384.5
	<i>Change, %</i>			0.5	2.5	(30.5)	(34.4)	9.0	(5.1)	13.2	2.4	(18.5)
	Butadiene	-Naphtha	463.5	497.0	683.5	1,786.0	2,428.0	452.5	1,615.5	384.5	717.3	1,436.5
	<i>Change, %</i>			(6.7)	(32.2)	(74.0)	(80.9)	2.4	(71.3)	20.6	(35.4)	(67.7)
	Benzene	-Naphtha	351.0	339.5	291.0	443.5	553.0	197.5	338.0	197.0	247.2	396.4
	<i>Change, %</i>			3.4	20.6	(20.9)	(36.5)	77.7	3.8	78.2	42.0	(11.5)
	Toluene	-Naphtha	238.5	222.0	213.5	246.0	253.0	187.5	205.5	207.8	231.0	222.6
	<i>Change, %</i>			7.4	11.7	(3.0)	(5.7)	27.2	16.1	14.8	3.2	7.2
	Xylene	-Naphtha	213.5	192.0	188.5	266.0	198.0	197.5	190.5	206.3	228.2	210.5
	<i>Change, %</i>			11.2	13.3	(19.7)	7.8	8.1	12.1	3.5	(6.4)	1.4

자료 : Cischem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price		Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Spot Price	HDPE	CFR SE Asia	1,087.5	1,117.5	1,137.5	1,147.5	1,167.5	1,115.0	1,142.5	1,230.1	1,134.6	1,142.1
	Change, %			(2.7)	(4.4)	(5.2)	(6.9)	(2.5)	(4.8)	(11.6)	(4.1)	(4.8)
	MEG	CFR SE Asia	777.5	747.5	682.5	797.5	937.5	617.5	847.5	780.8	660.8	811.3
	Change, %			4.0	13.9	(2.5)	(17.1)	25.9	(8.3)	(0.4)	17.7	(4.2)
	PVC	CFR SE Asia	880.0	880.0	880.0	940.0	920.0	780.0	920.0	820.8	823.4	908.4
	Change, %			0.0	0.0	(6.4)	(4.3)	12.8	(4.3)	7.2	6.9	(3.1)
	PP	CFR SE Asia	1,047.5	1,047.5	1,037.5	1,127.5	1,097.5	945.0	1,032.5	1,109.8	978.4	1,072.1
	Change, %			0.0	1.0	(7.1)	(4.6)	10.8	1.5	(5.6)	7.1	(2.3)
	2-EH	CFR Korea	940.0	940.0	850.0	1,025.0	950.0	790.0	865.0	930.1	772.4	952.3
	Change, %			0.0	10.6	(8.3)	(1.1)	19.0	8.7	1.1	21.7	(1.3)
	ABS	CFR SE Asia	1,640.0	1,640.0	1,620.0	1,880.0	1,930.0	1,285.0	1,635.0	1,431.1	1,347.1	1,745.4
	Change, %			0.0	1.2	(12.8)	(15.0)	27.6	0.3	14.6	21.7	(6.0)
	SBR	CFR SE Asia	1,500.0	1,650.0	1,750.0	2,750.0	3,125.0	1,330.0	2,000.0	1,332.1	1,483.0	2,406.7
	Change, %			(9.1)	(14.3)	(45.5)	(52.0)	12.8	(25.0)	12.6	1.1	(37.7)
	SM	CFR SE Asia	1,135.0	1,122.5	1,032.5	1,345.0	1,485.0	1,010.0	1,205.0	1,100.7	1,064.6	1,254.3
	Change, %			1.1	9.9	(15.6)	(23.6)	12.4	(5.8)	3.1	6.6	(9.5)
	Caustic	FOB NEA	437.5	437.5	437.5	439.0	422.5	295.0	422.5	296.8	316.6	435.9
	Change, %			0.0	0.0	(0.3)	3.6	48.3	3.6	47.4	38.2	0.4
	PX	CFR SE Asia	785.0	782.5	797.5	855.0	907.5	822.5	855.0	842.9	790.4	849.8
	Change, %			0.3	(1.6)	(8.2)	(13.5)	(4.6)	(8.2)	(6.9)	(0.7)	(7.6)
PO	CFR China	1,427.5	1,462.5	1,312.5	1,392.5	1,655.0	1,245.0	1,562.5	1,683.4	1,396.8	1,484.6	
Change, %			(2.4)	8.8	2.5	(13.7)	14.7	(8.6)	(15.2)	2.2	(3.8)	
Caprolactam	CFR SE Asia	1,600.0	1,570.0	1,700.0	2,320.0	2,175.0	1,270.0	1,850.0	1,581.5	1,344.9	2,011.5	
Change, %			1.9	(5.9)	(31.0)	(26.4)	26.0	(13.5)	1.2	19.0	(20.5)	
PTA	CFR SE Asia	635.0	622.5	632.5	667.5	702.5	625.0	642.5	648.0	613.7	660.6	
Change, %			2.0	0.4	(4.9)	(9.6)	1.6	(1.2)	(2.0)	3.5	(3.9)	
Spread	HDPE		676.0	689.5	696.0	683.5	645.5	682.5	658.0	737.1	735.1	664.2
	Change, %			(2.0)	(2.9)	(1.1)	4.7	(1.0)	2.7	(8.3)	(8.0)	1.8
	MEG		366.0	319.5	241.0	333.5	415.5	185.0	363.0	287.8	261.3	333.4
	Change, %			14.6	51.9	9.7	(11.9)	97.8	0.8	27.2	40.1	9.8
	PVC		468.5	452.0	438.5	476.0	398.0	347.5	435.5	327.8	423.9	430.6
	Change, %			3.7	6.8	(1.6)	17.7	34.8	7.6	42.9	10.5	8.8
	PP		636.0	619.5	596.0	663.5	575.5	512.5	548.0	616.8	578.9	594.2
	Change, %			2.7	6.7	(4.1)	10.5	24.1	16.1	3.1	9.9	7.0
	2-EH		528.5	512.0	408.5	561.0	428.0	357.5	380.5	437.0	372.9	474.4
	Change, %			3.2	29.4	(5.8)	23.5	47.8	38.9	20.9	41.7	11.4
	ABS		1,228.5	1,212.0	1,178.5	1,416.0	1,408.0	852.5	1,150.5	938.1	947.6	1,267.6
	Change, %			1.4	4.2	(13.2)	(12.7)	44.1	6.8	31.0	29.6	(3.1)
	SBR	BD spread	625.0	725.0	625.0	500.0	175.0	445.0	(100.0)	454.7	366.2	492.3
	Change, %			(13.8)	0.0	25.0	257.1	40.4	(725.0)	37.5	70.7	27.0
	SM		723.5	694.5	591.0	881.0	963.0	577.5	720.5	607.7	665.1	776.4
	Change, %			4.2	22.4	(17.9)	(24.9)	25.3	0.4	19.1	8.8	(6.8)
	Caustic											
	Change, %											
	PX		373.5	354.5	356.0	391.0	385.5	390.0	370.5	349.9	390.9	371.9
	Change, %			5.4	4.9	(4.5)	(3.1)	(4.2)	0.8	6.8	(4.4)	0.4
PO	propylene spread	702.5	722.5	565.0	477.5	655.0	525.0	747.5	913.4	691.1	622.2	
Change, %			(2.8)	24.3	47.1	7.3	33.8	(6.0)	(23.1)	1.6	12.9	
Caprolactam	benzene spread	837.5	802.5	967.5	1,412.5	1,100.0	640.0	1,027.5	891.6	698.2	1,137.2	
Change, %			4.4	(13.4)	(40.7)	(23.9)	30.9	(18.5)	(6.1)	20.0	(26.4)	
PTA	px spread	85.5	74.8	74.3	69.0	67.3	49.3	44.0	58.0	60.4	65.8	
Change, %			14.4	15.2	23.9	27.1	73.6	94.3	47.4	41.5	30.0	

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	06/19	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA		
											17E	18E	17E	18E	17E	18E	
Petrochemical																	
Dow Chemical	USD	65.2	1.3	1.9	6.4	1.9	11.0	23.2	14.0	79,679	16.1	14.7	3.0	2.8	9.1	8.5	
Du Pont	USD	83.6	1.3	1.7	7.4	2.8	11.4	24.1	13.8	72,449	21.7	20.3	6.4	5.7	13.3	12.6	
Eastman	USD	86.0	3.6	3.5	9.5	8.6	12.8	20.5	14.3	12,541	11.5	10.7	2.5	2.3	8.8	8.4	
BASF	EUR	87.2	2.3	1.1	1.7	(2.3)	(0.1)	27.9	(1.3)	89,323	15.6	14.7	2.4	2.3	8.2	7.9	
Akzo Nobel	EUR	78.0	0.3	1.5	3.5	3.6	30.5	36.3	31.3	21,971	18.0	17.4	3.0	2.9	9.8	9.5	
Arkema	EUR	96.4	1.2	1.3	0.5	4.3	3.0	39.2	3.7	8,145	14.6	13.2	1.7	1.6	6.8	6.4	
Lanxess	EUR	68.0	1.6	(2.6)	4.0	5.0	9.4	70.3	9.0	6,943	19.0	15.3	2.3	2.1	6.1	5.8	
Sumitomo Chemical	JPY	597	0.3	(0.3)	(2.6)	(8.9)	1.7	33.6	7.4	8,869	9.9	9.2	1.1	1.0	7.2	6.9	
Mitsubishi Chemical	JPY	878	1.3	0.5	5.0	1.2	11.0	79.3	15.8	11,869	9.1	8.6	1.1	1.0	6.6	6.4	
Shin-Etsu Chemical	JPY	10,060	1.3	0.7	2.7	4.1	9.7	68.5	11.0	39,011	20.7	18.4	1.9	1.8	8.9	7.9	
Asahi Kasei	JPY	1,165	1.6	1.1	8.6	6.7	11.2	71.6	14.2	14,658	14.5	13.7	1.3	1.2	6.8	6.4	
JSR	JPY	1,845	0.9	(2.0)	(2.8)	(5.3)	1.6	26.2	0.1	3,743	14.9	13.7	1.1	1.0	6.5	5.9	
Nitto Denko	JPY	8,938	0.2	(0.6)	(0.7)	1.6	(2.1)	36.1	(0.3)	13,937	19.8	17.5	2.1	1.9	8.4	7.7	
SABIC	SAR	103.2	1.7	4.2	6.0	6.7	12.7	26.1	12.7	82,511	15.4	14.4	1.8	1.8	7.5	7.2	
Yansab	SAR	57.2	3.1	4.0	2.3	0.3	13.5	37.5	5.1	8,582	13.9	13.9	1.9	1.9	8.7	8.7	
Formosa Plastics	TWD	90.7	1.2	1.6	3.1	(0.7)	2.6	18.3	1.7	19,005	14.4	14.5	1.8	1.8	19.7	19.7	
Formosa Fiber	TWD	91.6	1.9	1.8	2.3	(2.8)	(4.6)	14.2	(4.9)	17,672	12.5	13.2	1.6	1.6	10.4	10.6	
Nan Ya Plastics	TWD	72.3	0.4	1.4	2.3	1.1	(0.3)	21.1	1.5	18,874	15.9	16.0	1.7	1.6	17.0	15.4	
Sinopec Shanghai	CNY	6.50	0.2	(1.7)	0.0	0.5	1.1	12.8	0.9	8,749	12.6	12.2	2.5	2.2	7.1	7.2	
Sinopec Yizheng(Fiber)	CNY	3.47	(1.7)	(1.7)	(6.7)	(9.4)	(14.7)	(9.2)	(15.4)	6,478	#N/A	N/A	54.2	8.1	8.2	40.3	16.1
Reliance	INR	1,409	1.5	6.8	6.9	8.3	32.6	44.6	30.2	71,062	15.9	13.2	1.6	1.4	10.5	8.6	
Industries Qatar	QAR	96.3	(2.7)	(1.7)	(5.6)	(14.4)	(16.9)	(2.7)	(18.0)	15,875	14.6	13.2	1.7	1.7	48.1	46.6	
PTT Chemical	THB	69.8	0.0	3.3	(4.1)	(2.1)	11.2	17.2	10.7	9,164	10.3	10.0	1.3	1.2	5.3	5.1	
Petronas	MYR	7.2	(0.1)	0.0	(1.8)	(3.1)	4.7	13.4	3.2	13,466	16.3	16.0	2.0	1.9	8.9	8.6	
LG화학	KRW	279,000	0.4	(3.6)	(1.1)	(0.2)	7.5	7.7	6.9	17,341	11.7	11.0	1.4	1.3	4.9	4.6	
롯데케미칼	KRW	330,000	(1.0)	(4.9)	(6.0)	(12.1)	(5.2)	22.9	(10.6)	9,959	5.1	5.1	1.0	0.8	3.4	3.1	
한화케미칼	KRW	29,000	0.3	(1.9)	1.2	16.5	16.0	16.7	17.4	4,208	5.7	5.8	0.8	0.7	7.2	6.6	
금호석유	KRW	74,200	(1.5)	(3.1)	0.0	(3.8)	(6.7)	21.8	(9.5)	1,990	14.7	12.2	1.4	1.3	9.3	8.0	
SKC	KRW	33,400	(1.0)	7.6	14.6	9.0	3.7	23.0	1.2	1,104	10.7	8.8	0.8	0.8	8.6	7.3	
국도화학	KRW	53,700	0.4	1.3	15.5	11.9	(5.5)	(9.6)	(2.2)	275	11.8	8.6	0.7	0.6	3.2	2.9	
효성	KRW	5,910	(0.7)	(10.9)	(13.0)	(29.6)	(3.9)	61.7	(13.1)	5,256	9.0	8.1	1.4	1.3	7.1	6.4	
Average			0.6	0.3	1.9	(0.0)	5.1	28.8	4.9								
Refinery																	
Valero	USD	66.6	1.2	1.0	4.3	(3.3)	(1.2)	28.8	(2.5)	29,790	14.3	11.5	1.5	1.5	6.4	5.6	
Conoco Phillips	USD	46.4	(0.4)	1.4	(2.4)	1.5	(10.8)	5.0	(7.5)	57,352	96.0	25.7	1.7	1.7	8.2	6.8	
Formosa Petrochemical	TWD	108.0	1.9	1.4	3.3	1.4	(1.4)	25.9	(3.6)	33,865	16.1	18.7	3.2	3.2	10.1	11.3	
Tesoro	USD	92.8	0.4	1.7	11.4	8.7	2.5	28.0	6.1	14,838	18.6	12.8	1.7	1.6	7.7	6.3	
Marathon Petroleum	USD	54.3	1.0	(0.3)	2.9	6.9	9.8	62.1	7.8	28,162	18.9	15.5	2.0	2.0	8.5	7.5	
Devon Energy	USD	31.3	(1.4)	(4.3)	(18.4)	(22.7)	(33.4)	(13.0)	(31.4)	16,465	16.6	12.2	2.3	2.0	7.7	6.5	
Hollyfrontier	USD	26.7	1.8	3.5	1.3	(5.4)	(14.3)	11.0	(18.4)	4,742	20.5	11.9	1.0	1.0	8.0	6.3	
Phillips 66	USD	81.2	0.4	1.3	3.8	1.6	(6.8)	3.5	(6.0)	41,674	19.0	13.3	1.9	1.8	9.9	8.1	
Murphy Oil	USD	25.4	0.2	(0.7)	(5.2)	(6.6)	(22.7)	(13.4)	(18.3)	4,386	138.9	31.9	0.9	0.9	4.5	4.2	
JX Holdings	JPY	485.8	(0.6)	(1.1)	(1.5)	(10.5)	(3.5)	20.2	(1.8)	14,940	7.4	6.8	0.6	0.6	7.5	7.0	
Idemitsu	JPY	3,195.0	(0.5)	(1.8)	(6.2)	(16.8)	0.9	42.8	2.9	4,588	6.2	6.0	0.8	0.7	8.5	7.9	
Nesteoil	EUR	35.8	0.9	4.0	(3.7)	3.4	(1.0)	22.7	(1.8)	0	13.7	13.4	2.2	2.0	7.8	7.9	
Ashland	USD	67.0	0.9	1.2	3.1	10.1	24.3	19.6	25.3	4,169	15.7	20.5	1.0	1.0	7.7	9.6	
Fuchs Petrolub	EUR	51.6	1.6	3.8	6.2	17.9	30.3	49.7	29.3	7,436	26.5	25.2	5.4	4.8	15.0	14.3	
SK이노베이션	KRW	161,000	1.3	0.9	(4.2)	(2.1)	8.1	13.0	9.9	13,107	6.2	6.5	0.8	0.7	3.7	3.4	
S-Oil	KRW	95,800	(0.1)	(1.6)	(6.1)	(1.0)	15.4	21.9	13.1	9,496	9.0	8.1	1.6	1.5	6.8	5.8	
GS	KRW	66,600	(0.3)	(4.9)	2.5	18.3	22.9	35.9	23.1	5,448	6.3	6.0	0.8	0.7	7.0	6.7	
Average			0.5	0.3	(0.5)	0.1	1.1	21.4	1.5								

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	06/19	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA			
											17E	18E	17E	18E	17E	18E		
E&P/Shale																		
Exxon Mobil	USD	83	(0.9)	(0.2)	1.0	0.9	(8.5)	(8.8)	(8.3)	350,676	21.5	18.5	2.0	1.9	9.3	8.5		
BP	GBP	473	1.3	0.4	0.1	2.1	(3.7)	26.7	(7.3)	118,539	17.9	14.3	1.2	1.2	5.8	5.1		
Shell	EUR	2,131	0.7	(0.1)	0.6	0.4	(3.2)	20.6	(5.0)	225,365	15.2	12.7	1.1	1.1	6.2	5.6		
Chevron	USD	107	(0.8)	(0.5)	0.9	(0.2)	(8.7)	5.8	(8.7)	203,590	23.9	19.2	1.4	1.4	7.4	6.6		
Total	EUR	45	0.8	(0.7)	(6.7)	(4.7)	(5.7)	9.4	(7.3)	125,134	12.3	10.9	1.2	1.1	5.7	5.2		
Sinopec	CNY	6	0.3	(2.6)	1.9	7.0	7.8	26.6	10.0	104,322	13.0	11.9	1.0	0.9	4.6	4.4		
Petrochina	CNY	8	0.0	0.1	0.7	(3.7)	(0.6)	6.3	(3.8)	195,402	38.3	24.9	1.1	1.1	6.4	6.1		
CNOOC	CNY	11	0.1	(0.4)	(13.9)	(11.9)	(12.5)	(7.4)	(11.5)	49,452	13.7	10.5	0.9	0.8	3.8	3.4		
Gazprom	RUB	117	1.1	(2.6)	(5.5)	(9.0)	(24.1)	(15.8)	(24.1)	47,583	4.0	3.4	0.2	0.2	3.5	3.1		
Rosneft	RUB	311	1.5	1.6	1.6	(1.1)	(22.8)	(3.0)	(22.8)	56,464	8.3	6.1	0.8	0.7	4.5	3.9		
Anadarko	USD	47	(0.7)	(3.3)	(12.4)	(26.2)	(34.6)	(14.9)	(33.0)	26,168	#N/A	N/A	78.8	1.7	1.6	6.7	5.5	
Petrobras	BRL	12	0.1	(4.7)	(9.8)	(6.6)	(14.4)	37.3	(17.4)	50,993	8.5	7.3	0.5	0.5	4.8	4.4		
Lukoil	USD	2,780	3.5	0.2	(2.5)	(11.2)	(17.0)	5.0	(19.4)	40,270	5.4	4.6	0.6	0.5	N/A	N/A		
Kinder	USD	19	(0.7)	(0.4)	(2.4)	(10.4)	(9.3)	5.7	(8.0)	47,497	28.7	25.6	1.2	1.2	11.5	10.9		
Statoil	NOK	145	1.0	(2.6)	(5.4)	(2.9)	(7.5)	7.0	(8.5)	55,823	15.9	13.7	1.5	1.4	3.1	2.8		
BHP	AUD	23	0.0	(2.3)	(5.3)	(7.4)	(8.3)	27.2	(8.2)	87,875	13.9	14.7	1.5	1.5	5.7	5.9		
PTT E&P	THB	89	0.9	1.4	(5.9)	(1.7)	(3.8)	10.6	(8.1)	10,349	13.9	11.9	0.9	0.8	2.9	2.7		
Petronas gas	MYR	19	(0.1)	(1.7)	(0.6)	(4.6)	(10.8)	(11.9)	(11.4)	8,734	21.0	19.5	3.0	2.8	12.0	11.1		
Chesapeake	USD	5	(2.2)	(1.4)	(13.7)	(5.7)	(31.7)	10.6	(28.9)	4,531	6.1	4.7	#N/A	N/A	166.3	7.2	5.7	
Noble Energy	USD	29	(1.0)	(1.6)	(6.5)	(13.8)	(27.5)	(20.9)	(23.3)	14,203	#N/A	N/A	69.9	1.3	1.3	7.8	6.5	
Average		0	0.2	(1.1)	(4.2)	(5.5)	(12.3)	5.8	(12.7)									
PV																		
WACKER	EUR	94.6	3.6	1.0	(4.2)	(5.1)	1.3	18.6	(4.3)	5,507	24.2	19.1	1.7	1.6	5.8	5.5		
GCL-Poly	HKD	0.8	2.7	(3.8)	(15.7)	(29.9)	(22.7)	(25.7)	(19.4)	1,787	6.4	6.1	0.5	0.5	5.4	4.9		
SunPower	USD	7.8	2.9	(1.8)	3.3	11.6	3.6	(47.4)	17.9	1,086	#N/A	N/A	173.1	1.7	2.2	44.4	9.5	
Canadian Solar	USD	13.0	1.8	1.6	0.4	(5.2)	2.5	(17.3)	7.0	756	9.1	6.3	0.7	0.7	9.4	9.0		
JA Solar	USD	6.4	0.3	1.3	(11.7)	25.7	28.0	(4.1)	33.6	303	27.3	13.0	1.6	1.6	4.3	3.2		
Yingli	USD	2.1	3.0	8.5	(11.3)	9.0	(31.9)	(49.5)	(21.2)	37	#N/A	N/A	#N/A	N/A	#N/A	N/A	39.9	23.6
First Solar	USD	36.4	1.5	(0.1)	0.0	14.2	3.9	(25.1)	13.3	3,791	62.1	59.7	0.7	0.7	7.6	6.0		
한화큐셀	USD	6.5	3.3	(1.2)	(4.8)	(10.8)	(25.6)	(52.3)	(20.1)	543	35.2	28.3	#N/A	N/A	#N/A	N/A	6.4	6.2
OCI	KRW	92,500	2.2	3.0	5.4	9.3	22.2	0.0	17.5	1,942	23.0	18.0	0.7	0.7	7.8	7.3		
웅진에너지	KRW	7,100	12.7	13.8	28.6	43.4	57.8	(27.5)	49.9	156	N/A	0.7	0.7	7.8	7.3	9.0		
신성솔라에너지	KRW	2,005	3.4	6.9	2.0	5.0	(5.4)	(2.9)	(9.3)	305	N/A	0.7	7.8	7.3	9.0	8.1		
Average			3.4	2.7	(0.7)	6.1	3.1	(21.2)	5.9									
Gas Company																		
Towngas China	HKD	4.8	0.0	1.7	5.7	4.5	21.0	13.6	18.6	1,682	11.4	10.6	0.9	0.8	11.0	10.4		
Kulun	HKD	6.4	(0.5)	(2.7)	(8.5)	(8.0)	9.3	4.5	11.0	6,664	10.8	10.0	1.1	1.1	5.4	5.2		
Beijing Enterprise	HKD	37.6	(0.1)	(0.3)	3.3	(12.6)	8.1	(10.6)	2.5	6,076	7.4	6.9	0.7	0.7	13.2	12.7		
ENN Energy	HKD	42.2	1.6	2.8	8.6	(5.3)	33.6	11.1	32.1	5,845	11.7	10.8	2.2	1.9	7.7	7.2		
China Resources Gas	HKD	24.3	1.3	1.9	4.3	(13.7)	10.0	7.5	11.2	6,914	14.0	12.6	2.6	2.2	8.8	8.1		
China Gas Holdings	HKD	12.9	0.2	3.0	11.8	2.5	26.4	13.7	22.8	8,229	13.8	12.3	2.6	2.2	11.0	10.6		
Shenzen Gas	HKD	13.8	2.5	1.8	9.0	19.0	23.5	18.8	21.9	3,459	12.1	11.2	1.3	1.2	8.4	7.9		
Shann Xi	CNY	8.9	1.0	2.5	5.5	(6.0)	(6.4)	(12.1)	(7.2)	1,454	16.8	14.4	1.8	1.7	#N/A	N/A	#N/A	N/A
Suntien	HKD	1.4	0.7	(5.3)	(5.9)	(4.6)	38.5	82.3	44.0	686	7.1	6.2	0.6	0.5	8.7	7.5		
China Oil & Gas	HKD	0.5	0.0	0.0	(6.9)	(11.5)	(6.9)	(8.5)	(11.5)	403	9.3	8.1	0.9	0.8	6.0	5.3		
Average			0.7	0.5	2.7	(3.6)	15.7	12.0	14.6									
EV																		
LG화학	KRW	279,000	0.4	(3.6)	(1.1)	(0.2)	7.5	7.7	6.9	17,341	10.9	10.5	1.4	1.2	5.1	4.9		
삼성SDI	KRW	155,000	5.1	4.7	(0.6)	14.0	44.2	42.2	42.2	9,384	18.0	11.7	1.0	0.9	17.1	11.1		
Panasonic	JPY	1479.0	(0.4)	0.0	8.3	17.7	15.5	64.7	24.3	32,559	18.6	14.9	1.9	1.7	5.7	5.1		
GS Yuasa	JPY	506.0	0.6	0.0	2.2	(5.1)	2.6	27.1	4.1	1,878	15.0	13.6	1.2	1.2	6.7	6.2		
NEC	JPY	290.0	1.8	(0.3)	4.3	1.4	(9.7)	17.9	(6.5)	6,779	21.1	16.3	0.9	0.9	7.8	6.7		
BYD Auto	CNY	51.2	0.4	1.4	5.5	3.5	1.6	(13.5)	3.1	19,433	25.0	19.2	2.5	2.3	12.5	10.1		
Tesla Motors	USD	369.8	(0.4)	3.0	19.0	41.4	82.4	71.6	73.1	60,743	#N/A	N/A	#N/A	N/A	12.7	11.2	71.6	29.5
Kandi Technologies	USD	4.0	1.3	(1.3)	(1.3)	2.6	(17.7)	(45.6)	(19.4)	190	#N/A	N/A	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			1.1	0.5	4.5	9.4	15.8	21.5	16.0									

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임