

1. News Summary (3 page)

2017년 9월 8일

News	
WTI comment	美원유재고 증가에 약보합...WTI 0.14%↓
Headline	러시아, 한국과 사할린 LNG 공급 대폭 확대 방안 논의
News 1.	1~7월 전기차·배터리 판매 테슬라·파나소닉 콤비가 1위
News 2.	산업부-한전, 신재생전원 확대 전력계통 보강계획 수립
News 3.	-
News 4.	-

Conclusion	
	사할린 지역의 LNG 공장 증설에 5~6년 정도 소요됨을 감안해야 함
	GM BOLT가 판매지역을 글로벌로 확대하는 시점의 판도에 주목해야 함
	가스 발전을 늘릴 개연성이 높아 신재생전원 확대 폭은 제한적일 것
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	49.1	(0.1)	3.9	1.0	7.6	3.1
Dubai	\$/bbl	53.0	1.6	7.6	2.7	12.6	18.2
Gasoline	\$/bbl	70.5	(0.7)	0.9	3.8	15.1	18.3
Diesel	\$/bbl	68.8	1.4	7.1	6.7	19.8	23.2
Complex margin	\$/bbl	10.3	(0.3)	(0.6)	1.8	3.2	3.3
1M lagging	\$/bbl	12.5	0.2	2.7	(2.3)	6.3	2.3
Petrochemical			%	%	%	%	%
Naphtha	\$/t	509	1.5	7.5	9.5	18.9	27.5
Butadiene	\$/t	1,360	0.0	0.0	49.5	50.3	23.6
HDPE	\$/t	1,195	0.4	2.1	6.7	9.6	4.8
MEG	\$/t	973	1.5	5.0	10.6	26.9	46.1
PX	\$/t	826	0.2	1.8	1.0	6.4	5.3
SM	\$/t	1,383	(0.4)	2.1	24.6	26.6	34.8
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.98	(0.6)	(1.9)	(1.2)	(3.2)	(1.9)
Natural rubber	\$/t	1,670	(1.8)	9.2	8.4	20.1	28.5
Cotton	C/lbs	75.0	(0.3)	5.0	8.3	(2.0)	8.3

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	09/04	\$/t	1,190	0.4	15.5	32.2	9.7
Propylene	09/04	\$/t	800	1.3	3.9	8.1	1.9
Benzene	09/04	\$/t	818	2.8	9.0	6.5	22.9
Toluene	09/04	\$/t	660	0.8	1.5	1.5	6.5
Xylene	09/04	\$/t	635	1.2	0.4	2.4	5.0
PP	09/04	\$/t	1,128	0.9	3.7	7.6	12.8
PVC	09/04	\$/t	935	1.6	8.7	6.3	8.7
ABS	09/04	\$/t	2,010	6.1	8.6	22.6	43.1
SBR	09/04	\$/t	1,690	2.4	13.4	2.4	22.5
SM	09/04	\$/t	1,355	9.1	17.8	20.7	29.4
BPA	09/04	\$/t	1,993	0.0	29.2	36.2	33.5
Caustic	09/04	\$/t	471	0.0	0.7	7.7	47.2
2-EH	09/04	\$/t	990	0.0	3.1	5.3	23.0
Caprolactam	09/04	\$/t	1,740	(1.7)	(1.1)	10.8	23.4
Solar				%	%	%	%
Polysilicon	09/06	\$/kg	16.7	3.1	7.5	18.8	16.9
Module	09/06	\$/W	0.32	0.0	(1.2)	(3.0)	(24.5)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	79.0	0.3	3.5	(1.4)	(2.3)	(10.4)
Shell	EUR	2,158	1.1	1.4	(1.8)	4.3	13.8
Petrochina	CNY	8.09	(0.6)	(0.2)	(1.2)	4.4	8.0
Gazprom	RUB	118.0	0.7	(0.0)	(1.3)	(0.8)	(17.6)
Petrobras	BRL	15.0	0.0	10.0	10.8	16.7	7.4
Refinery							
Phillips66	USD	84.0	0.8	0.3	(1.2)	9.2	5.6
Valero	USD	68.9	1.1	1.1	1.3	10.5	22.8
JX	JPY	537.1	0.8	0.9	9.0	10.3	33.2
Neste Oil	EUR	36.3	(0.1)	(2.0)	4.0	4.3	(2.4)

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	83.9	0.6	2.9	2.8	(0.1)	12.9
DowDuPont	USD	64.7	(0.3)	(3.0)	1.3	1.1	20.0
SABIC	SAR	99.6	0.3	0.7	1.9	0.4	18.5
Formosa Pla.	TWD	95.8	0.4	2.0	3.0	5.6	19.6
Shin-Etsu	JPY	9,630	(0.7)	(1.0)	(3.8)	(5.4)	28.4
Renewable							
Wacker	EUR	112.2	1.0	4.2	5.4	18.3	38.4
First Solar	USD	47.45	0.2	1.0	(2.3)	28.5	23.3
GCL-Poly	HKD	0.87	0.0	(1.1)	(3.3)	7.4	(21.6)
Tesla Motors	USD	350.6	1.8	(1.5)	(1.3)	(2.5)	73.8

4. Coverage Summary

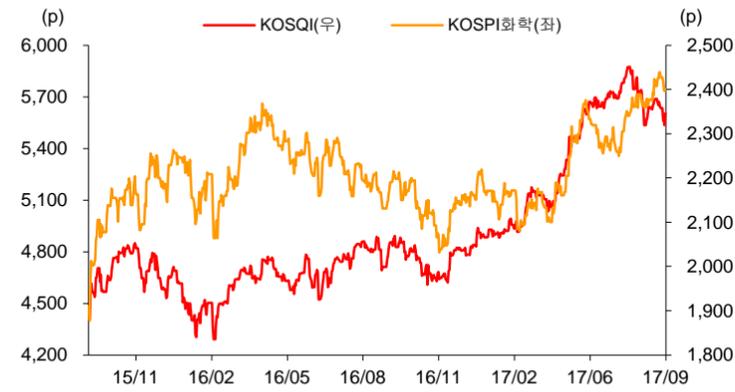
	09/07	1D	1W	1M	3M	6M	12M
KOSPI	2,346	1.1	(0.7)	(2.0)	(1.5)	12.0	13.5
KOSPI화학	5,744	0.2	(1.7)	1.1	3.8	15.3	10.6
LG화학	370,000	(0.5)	(2.4)	8.8	26.5	35.5	47.1
롯데케미칼	406,000	0.5	1.6	5.0	15.3	8.4	48.2
한화케미칼	35,700	1.0	1.0	6.1	21.0	42.8	43.7
금호석유화학	78,700	(1.1)	(0.1)	5.5	3.8	6.4	13.1
KCC	380,000	0.4	(4.0)	(6.9)	(5.2)	10.6	(6.5)
OCI	103,000	(1.0)	4.8	12.6	16.6	20.9	21.7
SKC	38,100	2.0	3.3	5.2	21.7	22.7	38.8
국도화학	51,500	1.2	(4.8)	(9.2)	(3.2)	2.0	(12.6)
SK이노베이션	187,000	1.1	(0.8)	5.6	19.1	19.1	24.7
S-Oil	122,500	1.2	(2.4)	4.7	26.2	38.6	65.8
GS	66,000	0.0	(6.5)	(12.1)	(6.8)	22.0	31.0
SK가스	108,500	1.4	(3.1)	(7.7)	(8.4)	(4.8)	6.9
포스코대우	20,950	0.5	(0.9)	(11.6)	(9.5)	(14.0)	(9.7)
LG상사	28,350	0.4	(1.7)	(3.2)	(12.6)	(11.8)	(16.4)
한국전력	41,750	(0.1)	(2.7)	(6.3)	(4.4)	0.5	(27.3)
한국가스공사	44,150	1.8	(2.5)	(12.7)	(11.1)	(8.9)	4.5

투자의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	330,000	(10.8)	14.73	1.98
매수	410,000	1.0	8.38	1.48
매수	33,000	(7.6)	8.52	1.06
매수	100,000	27.1	14.96	1.50
매수	450,000	18.4	21.61	0.61
매수	100,000	(2.9)	20.84	0.80
매수	40,000	5.0	14.36	1.02
매수	70,000	35.9	8.64	0.63
매수	180,000	(3.7)	8.40	1.02
매수	100,000	(18.4)	16.45	2.39
매수	80,000	21.2	5.49	0.97
매수	150,000	38.2	6.58	0.78
매수	27,000	28.9	7.28	0.87
매수	42,000	48.1	8.76	0.92
매수	60,000	43.7	7.21	0.33
매수	60,000	35.9	7.49	0.52

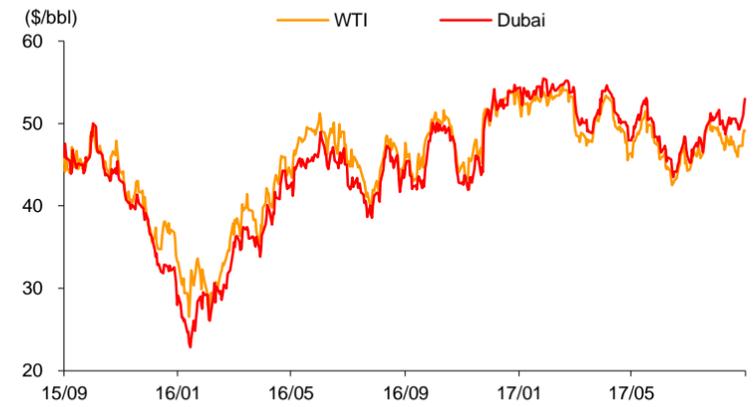
· 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
· 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
· 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
· 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

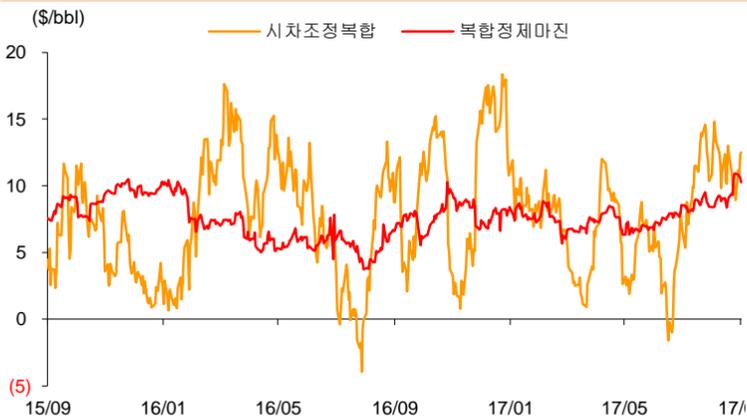
KOSPI/KOSPI화학



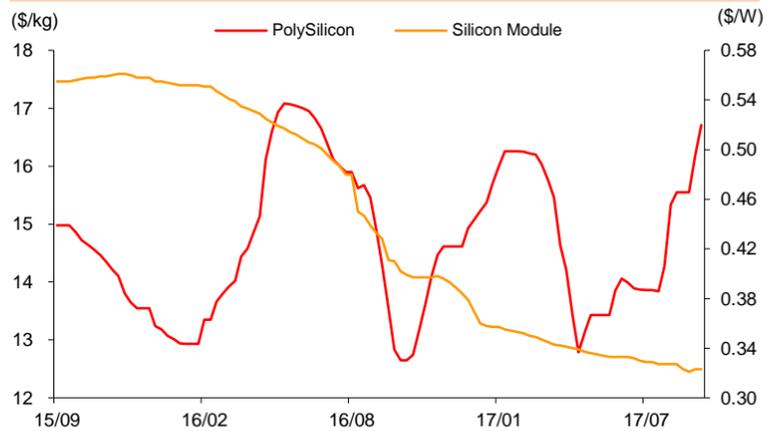
WTI/Dubai



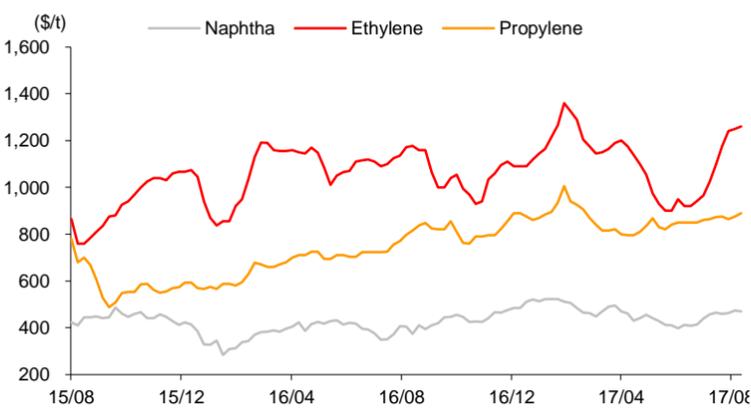
Complex & 1M lagging margin



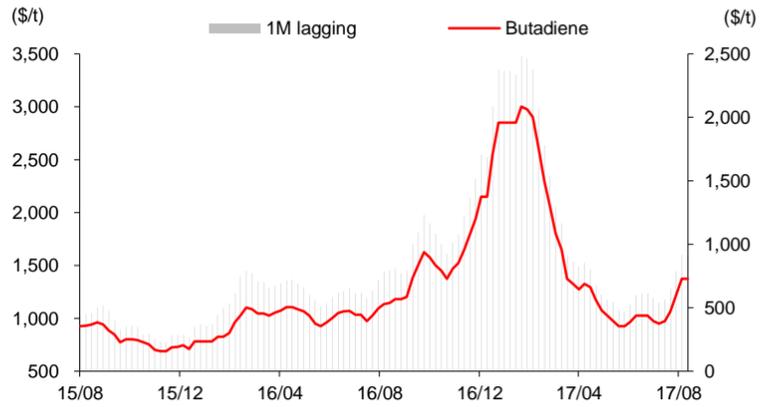
Polysilicon & Module prices



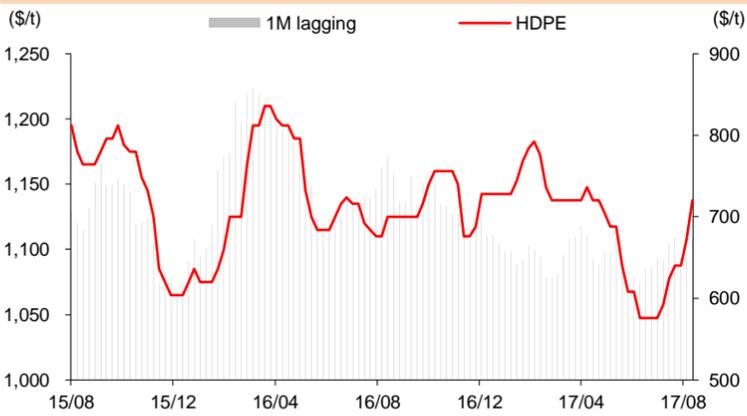
Naphtha/Ethylene/Propylene prices



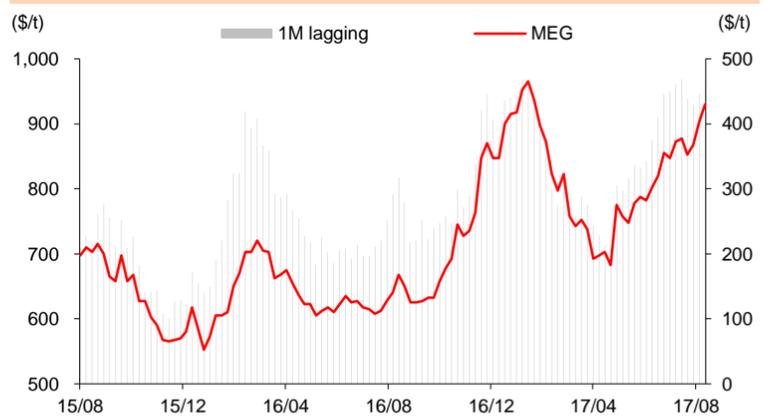
Butadiene price & 1M lagging naphtha spread



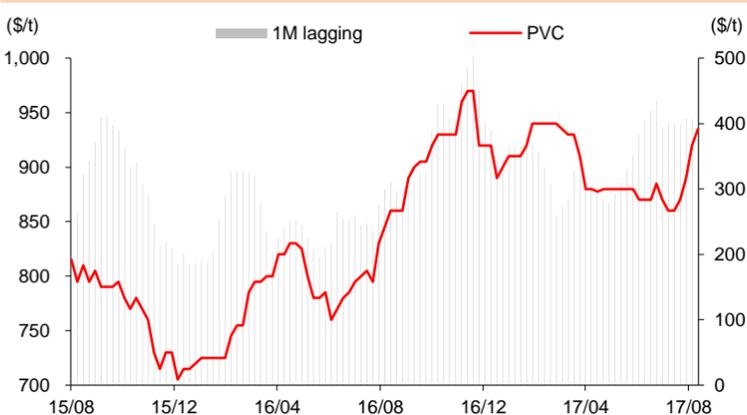
HDPE price & 1M lagging naphtha spread



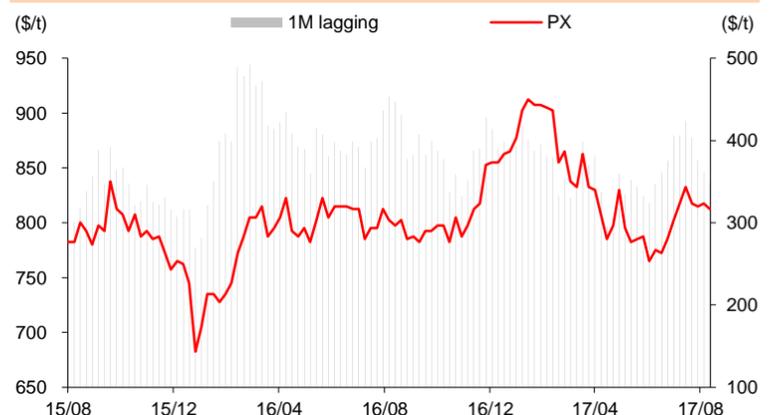
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

News Comment

Headline (출처: 연합뉴스)

제목 러시아, 한국과 사할린 LNG 공급 대폭 확대 방안 논의
결론 사할린 지역의 LNG 공장 증설에 5~6년 정도 소요됨을 감안해야 함
세부

- 1) PNG 도입은 북핵 문제로 당장 진척이 어려운 상황에서 LNG 확대 검토
- 2) 노박 러시아 에너지부 장관, "한국에 연 12bcm 공급 방안 협의중"
- 3) 사할린산 LNG의 한국 수출 확대를 염두에 둔 것으로 추정됨
- 4) 현재 한국은 '사할린-2'에서 생산된 LNG를 연 2bcm 수입하고 있음
- 5) 사할린 지역의 LNG 공장 증설에 5~6년 정도 소요됨을 감안해야 함

Issue 1 (출처: 전기신문)

제목 1~7월 전기차·배터리 판매 테슬라&파나소닉 콤비가 1위
결론 GM BOLT가 판매지역을 글로벌로 확대하는 시점의 판도에 주목해야 함
세부

- 1) 올해 1~7월 전세계에 판매된 테슬라 전기차는 48,006대로 1위 차지함
- 2) 다만 타 브랜드의 약진으로 점유율은 지난해 13.9%에서 13%로 하락
- 3) 특히 중국 자동차 기업은 상위 5위권 내에 3개 기업이 진입해 강세
- 4) 닛산은 32,258대를 판매해 3위지만 점유율이 12%에서 8.7%로 하락
- 5) GM BOLT가 판매지역을 글로벌로 확대하는 시점의 판도에 주목해야 함

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 미원유재고 증가에 약보합...WTI 0.14%↓
상승
요인

하락 EIA, "지난주 美 원유재고는 전주 대비 458만b 증가"
요인

Issue 2 (출처: 국제뉴스)

제목 산업부-한전, 신재생전원 확대 전력계통 보강계획 수립
결론 가스 발전을 늘릴 개연성이 높아 신재생전원 확대 폭은 제한적일 것
세부

- 1) 한전은 신재생전원 확대 정책과 관련해 워크숍을 개최한다고 밝힘
- 2) 산업부, "2030년까지 전체 발전량의 20%를 신재생전원으로 대체 검토"
- 3) 풍력, 태양광발전은 전체 신재생전원 설비용량의 약 80%가 될 것
- 4) 신재생 출력변동 대응 위해 ESS, FACTS 등 계통안정화 설비 확대 계획
- 5) 가스 발전을 늘릴 개연성이 높아 신재생전원 확대 폭은 제한적일 것

Issue 4

제목
결론
세부

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

Issue 6

제목
결론
세부

- 1)
- 2)
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- 5)

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
F/X	USD/EUR	0.832	0.839	0.840	0.848	0.888	0.946	0.890	0.951	0.901	0.904	0.905	
	Change, %		(0.9)	(1.0)	(1.9)	(6.4)	(12.1)	(6.5)	(12.5)	(7.7)	(8.0)	(8.1)	
	USD/JPY	108.5	109.2	110.0	110.8	109.8	114.0	101.7	117.0	121.1	108.8	112.0	
	Change, %		(0.7)	(1.4)	(2.1)	(1.2)	(4.9)	6.6	(7.3)	(10.4)	(0.3)	(3.1)	
	USD/KRW	1,129.6	1,135.6	1,127.6	1,127.2	1,124.0	1,146.3	1,090.0	1,205.8	1,131.2	1,160.5	1,139.4	
	Change, %		(0.5)	0.2	0.2	0.5	(1.5)	3.6	(6.3)	(0.1)	(2.7)	(0.9)	
	Agriculture	Corn	341.8	347.0	342.3	372.3	384.8	369.5	321.0	352.0	376.8	358.5	365.0
		Change, %		(1.5)	(0.1)	(8.2)	(11.2)	(7.5)	6.5	(2.9)	(9.3)	(4.7)	(6.4)
Soybean		963.3	964.5	936.3	959.8	930.8	1,014.8	991.8	996.5	945.4	987.5	976.3	
Change, %			(0.1)	2.9	0.4	3.5	(5.1)	(2.9)	(3.3)	1.9	(2.5)	(1.3)	
	Wheat	413.5	421.8	410.3	463.5	444.8	436.0	375.3	408.0	508.1	436.4	440.1	
	Change, %		(2.0)	0.8	(10.8)	(7.0)	(5.2)	10.2	1.3	(18.6)	(5.2)	(6.0)	
	Rice	12.4	12.5	12.6	12.0	11.2	9.3	9.3	9.4	11.1	10.3	10.6	
	Change, %		(0.2)	(1.0)	3.2	10.6	34.0	33.1	32.8	12.4	20.1	16.8	
	Oats	235.0	235.0	223.5	274.3	260.5	265.5	163.8	228.5	250.2	196.3	252.4	
	Change, %		0.0	5.1	(14.3)	(9.8)	(11.5)	43.5	2.8	(6.1)	19.7	(6.9)	
	MYR/mt	Palm Oil	2,768.0	2,720.0	2,680.0	2,581.0	2,707.0	2,974.0	2,867.0	3,218.0	2,190.3	2,653.8	2,853.3
		Change, %		1.8	3.3	7.2	2.3	(6.9)	(3.5)	(14.0)	26.4	4.3	(3.0)
Cocoa		1,945.0	1,954.0	1,966.0	2,029.0	1,963.0	1,950.0	2,934.0	2,126.0	3,091.6	2,854.0	1,994.0	
Change, %			(0.5)	(1.1)	(4.1)	(0.9)	(0.3)	(33.7)	(8.5)	(37.1)	(31.9)	(2.5)	
	Cotton	75.0	75.3	71.5	71.2	75.8	77.3	69.5	70.7	63.3	65.6	74.5	
	Change, %		(0.3)	5.0	5.3	(1.0)	(2.9)	7.9	6.2	18.6	14.4	0.7	
	Sugar	14.0	14.3	14.4	13.9	14.1	18.4	20.3	19.5	13.1	18.2	16.4	
	Change, %		(1.8)	(2.6)	1.2	(0.8)	(23.8)	(30.9)	(28.1)	6.8	(22.7)	(14.7)	
	Coffee	127.9	126.6	128.2	142.1	125.8	139.0	153.9	137.1	132.6	136.1	136.0	
	Change, %		1.0	(0.2)	(10.0)	1.7	(8.0)	(16.9)	(6.7)	(3.6)	(6.0)	(5.9)	
	Energy	WTI	49.1	49.2	47.2	49.4	45.7	53.1	45.5	53.7	48.8	43.4	49.4
		Change, %		(0.1)	3.9	(0.6)	7.4	(7.6)	7.9	(8.6)	0.5	13.2	(0.6)
Brent		54.5	54.2	52.4	52.4	48.1	55.9	48.0	56.8	53.7	45.1	52.3	
Change, %			0.5	4.0	4.0	13.4	(2.6)	13.6	(4.1)	1.5	20.9	4.3	
	Natural Gas	3.0	3.0	3.0	2.8	3.0	2.8	2.7	3.7	2.6	2.6	3.1	
	Change, %		(0.6)	(1.9)	6.4	(1.3)	5.6	11.4	(20.0)	13.4	16.8	(2.7)	
	Ethanol	1.5	1.6	1.5	1.6	1.6	1.5	1.4	1.6	1.5	1.5	1.5	
	Change, %		(2.2)	(1.4)	(4.3)	(2.6)	2.3	6.8	(5.0)	1.1	0.7	(0.7)	
	RBOB Gasoline	166.1	167.3	214.0	163.0	149.1	168.0	134.6	166.5	163.6	140.0	159.5	
	Change, %		(0.7)	(22.4)	1.9	11.4	(1.1)	23.4	(0.2)	1.5	18.7	4.2	
	Coal	97.7	97.9	95.3	95.0	78.5	79.3	69.8	88.4	59.0	65.5	83.8	
	Change, %		(0.3)	2.5	2.8	24.5	23.2	39.9	10.5	65.6	49.2	16.5	
Metal	Gold	1,349.3	1,334.2	1,321.4	1,257.9	1,287.1	1,215.9	1,345.2	1,152.3	1,160.6	1,248.5	1,247.3	
	Change, %		1.1	2.1	7.3	4.8	11.0	0.3	17.1	16.3	8.1	8.2	
	Silver	18.1	17.9	17.6	16.3	17.6	17.5	19.8	15.9	15.7	17.1	17.2	
	Change, %		1.4	3.0	11.4	3.0	3.6	(8.5)	13.9	15.3	6.0	5.5	
	Copper	6,898.5	6,901.0	6,788.0	6,414.0	5,621.0	5,773.0	4,650.0	5,535.5	5,503.1	4,872.0	5,927.8	
	Change, %		(0.0)	1.6	7.6	22.7	19.5	48.4	24.6	25.4	41.6	16.4	
	Nickel	778.7	782.4	743.4	662.7	568.8	710.9	679.1	682.0	759.5	646.4	651.3	
	Change, %		(0.5)	4.7	17.5	36.9	9.5	14.7	14.2	2.5	20.5	19.6	
	Zinc	3,129.0	3,095.0	3,146.0	2,858.0	2,447.0	2,695.0	2,323.0	2,576.0	1,941.9	2,097.5	2,757.7	
	Change, %		1.1	(0.5)	9.5	27.9	16.1	34.7	21.5	61.1	49.2	13.5	
	Lead	2,314.0	2,314.3	2,371.5	2,343.3	2,048.5	2,232.3	1,911.5	2,003.5	1,791.2	1,868.3	2,245.3	
	Change, %		(0.0)	(2.4)	(1.2)	13.0	3.7	21.1	15.5	29.2	23.9	3.1	
	Aluminum	16,130.0	16,215.0	16,325.0	14,860.0	13,620.0	13,645.0	12,405.0	12,765.0	12,184.0	12,373.5	14,118.8	
	Change, %		(0.5)	(1.2)	8.5	18.4	18.2	30.0	26.4	32.4	30.4	14.2	
	Cobalt	60,850.0	60,850.0	60,750.0	57,500.0	56,225.0	50,750.0	26,000.0	32,734.0	28,444.4	25,480.1	52,235.5	
	Change, %		0.0	0.2	5.8	8.2	19.9	134.0	85.9	113.9	138.8	16.5	
	HR Coil	638.0	640.0	634.0	619.0	589.0	620.0	555.0	633.0	461.5	519.3	621.3	
	Change, %		(0.3)	0.6	3.1	8.3	2.9	15.0	0.8	38.3	22.9	2.7	
	Scrap	380.0	380.0	372.0	360.0	355.0	360.0	265.0	302.0	252.9	275.7	344.4	
	Change, %		0.0	2.2	5.6	7.0	5.6	43.4	25.8	50.2	37.8	10.3	

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		09/07	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Crude Oil	WTI	49.1	49.2	47.2	48.6	45.6	49.3	47.6	53.7	48.8	43.4	49.3	
	<i>Change, %</i>		(0.1)	3.9	1.0	7.6	(0.4)	3.1	(8.6)	0.6	13.2	(0.5)	
	Dubai	53.0	52.1	49.3	51.6	47.1	52.5	44.8	53.8	50.8	41.3	50.7	
	<i>Change, %</i>		1.6	7.6	2.7	12.6	0.9	18.2	(1.6)	4.3	28.3	4.4	
Crude Oil Product	Gasoline(휘발유)	70.5	71.0	69.8	67.9	61.2	65.6	59.6	69.8	69.5	56.3	65.7	
	<i>Change, %</i>		(0.7)	0.9	3.8	15.1	7.5	18.3	0.9	1.4	25.3	7.3	
	Kerosene(등유)	67.7	66.7	64.3	64.0	57.0	63.0	55.9	66.4	64.7	52.9	62.3	
	<i>Change, %</i>		1.5	5.2	5.7	18.8	7.4	21.1	1.9	4.5	27.9	8.7	
	Diesel(경유)	68.8	67.8	64.2	64.5	57.4	64.4	55.8	65.5	64.8	52.1	62.9	
	<i>Change, %</i>		1.4	7.1	6.7	19.8	6.8	23.2	5.0	6.2	32.0	9.4	
	Bunker-C	50.5	49.4	46.9	48.3	45.5	47.9	40.3	52.1	45.3	35.5	47.5	
	<i>Change, %</i>		2.1	7.5	4.5	10.9	5.3	25.2	(3.1)	11.5	42.0	6.2	
	Naphtha	54.3	53.3	50.7	50.9	44.8	51.1	43.1	53.5	52.6	42.6	50.4	
	<i>Change, %</i>		1.8	6.9	6.6	21.1	6.3	25.9	1.5	3.1	27.4	7.6	
	Dubai Spread	Gasoline(휘발유)	17.5	18.8	20.6	16.3	14.2	13.0	14.8	16.0	18.7	14.9	14.9
		<i>Change</i>		(1.3)	(3.1)	1.2	3.3	4.5	2.7	1.5	(1.2)	2.5	2.5
Kerosene(등유)		14.7	14.6	15.1	12.4	9.9	10.5	11.0	12.6	14.0	11.6	11.5	
<i>Change</i>			0.1	(0.4)	2.3	4.8	4.2	3.6	2.1	0.7	3.1	3.2	
Diesel(경유)		15.8	15.7	15.0	12.9	10.4	11.9	11.0	11.7	14.0	10.8	12.1	
<i>Change</i>			0.1	0.8	2.9	5.5	3.9	4.8	4.1	1.8	5.0	3.7	
Dubai Spread	Bunker-C	(2.5)	(2.7)	(2.3)	(3.3)	(1.6)	(4.6)	(4.5)	(1.8)	(5.5)	(5.8)	(3.2)	
	<i>Change</i>		0.2	(0.2)	0.8	(1.0)	2.1	2.0	(0.8)	3.0	3.3	0.7	
	Naphtha	1.3	1.1	1.5	(0.7)	(2.3)	(1.5)	(1.7)	(0.4)	1.8	1.3	(0.3)	
	<i>Change</i>		0.1	(0.2)	2.0	3.5	2.7	3.0	1.6	(0.5)	(0.0)	1.6	
Refining Margin	Simple(단순)	5.0	5.0	5.4	3.5	3.2	2.0	2.2	3.8	3.3	1.9	3.1	
	<i>Change</i>		(0.0)	(0.4)	1.5	1.8	3.0	2.7	1.1	1.7	3.0	1.9	
	Complex(복합)	10.3	10.5	10.9	8.4	7.1	6.8	7.0	8.3	9.3	7.0	7.8	
	<i>Change</i>		(0.3)	(0.6)	1.8	3.2	3.5	3.3	2.0	1.0	3.3	2.5	
Refining Margin	Complex(lagging)	12.5	12.3	9.8	14.8	6.2	4.0	10.2	18.0	7.3	8.5	7.6	
	<i>Change</i>		0.2	2.7	(2.3)	6.3	8.5	2.3	(5.5)	5.2	4.0	4.8	

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			09/07	09/06	09/05	09/04	09/01	08/31	08/30	08/29	08/28	08/25
Spot Price	Naphtha	CFR Japan	508.8	501.0	487.0	487.3	473.3	473.3	479.4	473.1	478.6	476.0
	Ethylene	CFR SE Asia	1,175.0	1,165.0	1,165.0	1,165.0	1,155.0	1,155.0	1,125.0	1,125.0	1,125.0	1,125.0
	Propylene	FOB Korea	900.0	900.0	881.0	872.0	870.0	870.0	870.0	870.0	870.0	869.0
	Butadiene	FOB Korea	1,360.0	1,360.0	1,360.0	1,360.0	1,360.0	1,360.0	1,360.0	1,310.0	1,310.0	1,310.0
	HDPE	CFR FE Asia	1,195.0	1,190.0	1,180.0	1,175.0	1,170.0	1,170.0	1,170.0	1,165.0	1,165.0	1,145.0
	LDPE	CFR FE Asia	1,245.0	1,240.0	1,230.0	1,210.0	1,205.0	1,205.0	1,205.0	1,200.0	1,200.0	1,190.0
	LLDPE	CFR FE Asia	1,210.0	1,210.0	1,180.0	1,170.0	1,160.0	1,160.0	1,160.0	1,150.0	1,150.0	1,140.0
	MEG	CFR China	973.0	959.0	960.0	952.0	927.0	927.0	927.0	908.0	908.0	905.0
	PP	CFR FE Asia	1,130.0	1,140.0	1,140.0	1,140.0	1,110.0	1,110.0	1,110.0	1,110.0	1,110.0	1,100.0
	PX	CFR China	826.0	824.5	825.5	826.0	811.7	811.7	811.7	815.7	813.7	811.7
	PTA	CFR China	650.0	652.0	653.0	650.0	635.0	635.0	635.0	635.0	635.0	637.0
	Benzene	FOB Korea	804.0	810.0	824.0	830.0	805.0	805.0	805.0	794.0	818.0	816.5
	Toluene	FOB Korea	656.0	655.0	648.0	656.0	633.5	633.5	633.5	635.5	635.5	635.5
	Xylene	FOB Korea	664.5	669.0	662.0	669.0	658.0	658.0	658.0	657.5	657.5	656.5
	SM	FOB Korea	1,383.0	1,389.0	1,422.0	1,438.0	1,354.5	1,354.5	1,354.5	1,338.0	1,303.0	1,273.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	Naphtha	CFR Japan	470.0	474.0	464.0	428.0	430.5	375.0	484.5	493.0	399.5	464.8
	<i>Change, %</i>			(0.8)	1.3	9.8	9.2	25.3	(3.0)	(4.7)	17.6	1.1
	Ethylene	CFR SE Asia	1,190.0	1,185.0	1,030.0	900.0	1,085.0	1,085.0	990.0	1,103.7	1,040.9	1,035.2
	<i>Change, %</i>			0.4	15.5	32.2	9.7	9.7	20.2	7.8	14.3	15.0
	Propylene	CFR SE Asia	800.0	790.0	770.0	740.0	725.0	785.0	815.0	770.0	705.7	862.2
	<i>Change, %</i>			1.3	3.9	8.1	10.3	1.9	(1.8)	3.9	13.4	(7.2)
	Butadiene	CFR SE Asia	1,325.0	1,325.0	925.0	925.0	1,245.0	1,105.0	2,100.0	877.5	1,116.8	1,618.1
	<i>Change, %</i>			0.0	43.2	43.2	6.4	19.9	(36.9)	51.0	18.6	(18.1)
	Benzene	CFR SE Asia	817.5	795.0	750.0	767.5	755.0	665.0	822.5	690.0	646.7	837.4
	<i>Change, %</i>			2.8	9.0	6.5	8.3	22.9	(0.6)	18.5	26.4	(2.4)
	Toluene	CFR SE Asia	660.0	655.0	650.0	650.0	655.0	620.0	690.0	700.8	630.5	681.1
	<i>Change, %</i>			0.8	1.5	1.5	0.8	6.5	(4.3)	(5.8)	4.7	(3.1)
	Xylene	CFR SE Asia	635.0	627.5	632.5	620.0	640.0	605.0	675.0	699.3	627.7	666.6
	<i>Change, %</i>			1.2	0.4	2.4	(0.8)	5.0	(5.9)	(9.2)	1.2	(4.7)

Spread	Ethylene	-Naphtha	720.0	711.0	566.0	472.0	654.5	710.0	505.5	610.6	641.4	570.4
	<i>Change, %</i>			1.3	27.2	52.5	10.0	1.4	42.4	17.9	12.3	26.2
	Propylene	-Naphtha	330.0	316.0	306.0	312.0	294.5	410.0	330.5	277.0	306.2	397.4
	<i>Change, %</i>			4.4	7.8	5.8	12.1	(19.5)	(0.2)	19.1	7.8	(17.0)
	Butadiene	-Naphtha	855.0	851.0	461.0	497.0	814.5	730.0	1,615.5	384.5	717.3	1,153.2
	<i>Change, %</i>			0.5	85.5	72.0	5.0	17.1	(47.1)	122.4	19.2	(25.9)
	Benzene	-Naphtha	347.5	321.0	286.0	339.5	324.5	290.0	338.0	197.0	247.2	372.6
	<i>Change, %</i>			8.3	21.5	2.4	7.1	19.8	2.8	76.4	40.6	(6.7)
	Toluene	-Naphtha	190.0	181.0	186.0	222.0	224.5	245.0	205.5	207.8	231.0	216.3
	<i>Change, %</i>			5.0	2.2	(14.4)	(15.4)	(22.4)	(7.5)	(8.5)	(17.7)	(12.2)
	Xylene	-Naphtha	165.0	153.5	168.5	192.0	209.5	230.0	190.5	206.3	228.2	201.8
	<i>Change, %</i>			7.5	(2.1)	(14.1)	(21.2)	(28.3)	(13.4)	(20.0)	(27.7)	(18.2)

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	1,137.5	1,107.5	1,077.5	1,117.5	1,137.5	1,125.0	1,142.5	1,230.1	1,134.6	1,119.2
	Change, %			2.7	5.6	1.8	0.0	1.1	(0.4)	(7.5)	0.3	1.6
	MEG	CFR SE Asia	930.0	902.5	877.5	747.5	702.5	667.5	847.5	780.8	660.8	824.1
	Change, %			3.0	6.0	24.4	32.4	39.3	9.7	19.1	40.7	12.9
	PVC	CFR SE Asia	935.0	920.0	860.0	880.0	877.5	860.0	920.0	820.8	823.4	899.5
	Change, %			1.6	8.7	6.3	6.6	8.7	1.6	13.9	13.6	3.9
	PP	CFR SE Asia	1,127.5	1,117.5	1,087.5	1,047.5	1,047.5	1,000.0	1,032.5	1,109.8	978.4	1,072.4
	Change, %			0.9	3.7	7.6	7.6	12.8	9.2	1.6	15.2	5.1
	2-EH	CFR Korea	990.0	990.0	960.0	940.0	925.0	805.0	865.0	930.1	772.4	951.5
	Change, %			0.0	3.1	5.3	7.0	23.0	14.5	6.4	28.2	4.1
	ABS	CFR SE Asia	2,010.0	1,895.0	1,850.0	1,640.0	1,640.0	1,405.0	1,635.0	1,431.1	1,347.1	1,774.3
	Change, %			6.1	8.6	22.6	22.6	43.1	22.9	40.5	49.2	13.3
	SBR	CFR SE Asia	1,690.0	1,650.0	1,490.0	1,650.0	1,790.0	1,380.0	2,000.0	1,332.1	1,483.0	2,107.1
	Change, %			2.4	13.4	2.4	(5.6)	22.5	(15.5)	26.9	14.0	(19.8)
	SM	CFR SE Asia	1,355.0	1,242.5	1,150.0	1,122.5	1,065.0	1,047.5	1,205.0	1,100.7	1,064.6	1,232.2
	Change, %			9.1	17.8	20.7	27.2	29.4	12.4	23.1	27.3	10.0
	Caustic	FOB NEA	471.0	471.0	467.5	437.5	447.5	320.0	422.5	296.8	316.6	443.8
	Change, %			0.0	0.7	7.7	5.3	47.2	11.5	58.7	48.8	6.1
	PX	CFR SE Asia	812.5	817.5	832.5	782.5	785.0	797.5	855.0	842.9	790.4	833.2
	Change, %			(0.6)	(2.4)	3.8	3.5	1.9	(5.0)	(3.6)	2.8	(2.5)
PO	CFR China	1,992.5	1,992.5	1,542.5	1,462.5	1,360.0	1,492.5	1,562.5	1,683.4	1,396.8	1,533.4	
Change, %			0.0	29.2	36.2	46.5	33.5	27.5	18.4	42.6	29.9	
Caprolactam	CFR SE Asia	1,740.0	1,770.0	1,760.0	1,570.0	1,770.0	1,410.0	1,850.0	1,581.5	1,344.9	1,906.0	
Change, %			(1.7)	(1.1)	10.8	(1.7)	23.4	(5.9)	10.0	29.4	(8.7)	
PTA	CFR SE Asia	657.5	657.5	657.5	622.5	627.5	617.5	642.5	648.0	613.7	657.4	
Change, %			0.0	0.0	5.6	4.8	6.5	2.3	1.5	7.1	0.0	
Spread	HDPE		667.5	633.5	613.5	689.5	707.0	750.0	658.0	737.1	735.1	654.3
	Change, %			5.4	8.8	(3.2)	(5.6)	(11.0)	1.4	(9.4)	(9.2)	2.0
	MEG		460.0	428.5	413.5	319.5	272.0	292.5	363.0	287.8	261.3	359.3
	Change, %			7.4	11.2	44.0	69.1	57.3	26.7	59.8	76.1	28.0
	PVC		465.0	446.0	396.0	452.0	447.0	485.0	435.5	327.8	423.9	434.7
	Change, %			4.3	17.4	2.9	4.0	(4.1)	6.8	41.9	9.7	7.0
	PP		657.5	643.5	623.5	619.5	617.0	625.0	548.0	616.8	578.9	607.5
	Change, %			2.2	5.5	6.1	6.6	5.2	20.0	6.6	13.6	8.2
	2-EH		520.0	516.0	496.0	512.0	494.5	430.0	380.5	437.0	372.9	486.6
	Change, %			0.8	4.8	1.6	5.2	20.9	36.7	19.0	39.5	6.9
	ABS		1,540.0	1,421.0	1,386.0	1,212.0	1,209.5	1,030.0	1,150.5	938.1	947.6	1,309.5
	Change, %			8.4	11.1	27.1	27.3	49.5	33.9	64.2	62.5	17.6
	SBR	BD spread	365.0	325.0	565.0	725.0	545.0	275.0	(100.0)	454.7	366.2	489.0
	Change, %			12.3	(35.4)	(49.7)	(33.0)	32.7	(465.0)	(19.7)	(0.3)	(25.4)
	SM		885.0	768.5	686.0	694.5	634.5	672.5	720.5	607.7	665.1	767.4
	Change, %			15.2	29.0	27.4	39.5	31.6	22.8	45.6	33.1	15.3
	Caustic											
	Change, %											
	PX		342.5	343.5	368.5	354.5	354.5	422.5	370.5	349.9	390.9	368.4
	Change, %			(0.3)	(7.1)	(3.4)	(3.4)	(18.9)	(7.6)	(2.1)	(12.4)	(7.0)
PO	propylene spread	1,192.5	1,202.5	772.5	722.5	635.0	707.5	747.5	913.4	691.1	671.2	
Change, %			(0.8)	54.4	65.1	87.8	68.6	59.5	30.6	72.5	77.7	
Caprolactam	benzene spread	922.5	975.0	1,010.0	802.5	1,015.0	745.0	1,027.5	891.6	698.2	1,068.5	
Change, %			(5.4)	(8.7)	15.0	(9.1)	23.8	(10.2)	3.5	32.1	(13.7)	
PTA	px spread	88.8	85.3	74.8	74.8	78.0	59.3	44.0	58.0	60.4	74.2	
Change, %			4.1	18.7	18.7	13.8	49.8	101.7	53.0	46.9	19.6	

자료 : Ciscem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	09/07	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA		
											17E	18E	17E	18E	17E	18E	
Petrochemical																	
DowDuPont	USD	64.7	(0.3)	(3.0)	1.3	1.1	2.4	20.0	13.0	151,091	18.2	15.4	2.7	2.6	11.4	9.8	
Eastman	USD	84.8	(0.3)	(1.6)	0.4	5.0	7.5	27.0	12.8	12,290	11.3	10.5	2.5	2.3	8.7	8.3	
BASF	EUR	83.9	0.6	2.9	2.8	(0.1)	(7.1)	12.9	(5.0)	92,391	14.4	14.2	2.3	2.2	7.9	7.7	
Akzo Nobel	EUR	78.6	(0.3)	2.3	1.7	3.9	22.2	24.9	32.3	23,961	18.2	17.6	3.1	3.1	10.1	9.7	
Arkema	EUR	93.7	0.6	2.6	(2.9)	0.8	4.3	11.5	0.8	8,511	13.7	12.6	1.7	1.6	6.2	5.9	
Lanxess	EUR	62.9	1.0	0.4	(6.6)	(7.9)	(2.2)	28.2	0.9	6,901	16.5	14.3	2.2	2.0	7.4	7.5	
Sumitomo Chemical	JPY	658	1.7	(0.2)	3.8	10.8	0.0	37.4	18.3	10,039	10.3	9.7	1.2	1.1	7.5	7.2	
Mitsubishi Chemical	JPY	998	(0.9)	(2.5)	4.6	14.1	12.5	56.7	31.6	13,854	9.2	9.1	1.2	1.1	6.2	6.1	
Shin-Etsu Chemical	JPY	9,630	(0.7)	(1.0)	(3.8)	(5.4)	(0.3)	28.4	6.2	38,352	19.4	17.3	1.8	1.7	8.2	7.2	
Asahi Kasei	JPY	1,272	(0.1)	(3.5)	(2.8)	13.0	16.5	51.8	24.7	16,437	14.9	14.1	1.4	1.3	7.2	6.9	
JSR	JPY	2,098	0.4	(2.1)	9.4	9.5	8.7	35.2	13.8	4,372	15.9	15.1	1.2	1.2	8.3	7.7	
Nitto Denko	JPY	9,487	0.4	(2.2)	(7.1)	5.5	2.3	37.3	5.8	15,193	18.7	17.2	2.2	2.0	8.3	7.7	
SABIC	SAR	99.6	0.3	0.7	1.9	0.4	2.3	18.5	8.9	79,684	14.9	14.4	1.8	1.7	7.5	7.4	
Yansab	SAR	56.4	(0.2)	0.1	3.9	(0.0)	(4.0)	25.9	3.6	8,460	14.4	13.6	2.4	2.3	8.9	8.5	
Formosa Plastics	TWD	95.8	0.4	2.0	3.0	5.6	5.4	19.6	7.4	20,382	14.6	15.0	1.9	1.8	19.0	19.5	
Formosa Fiber	TWD	95.6	0.5	0.7	3.1	4.7	(0.9)	11.9	(0.7)	18,728	12.9	13.3	1.7	1.7	10.3	10.7	
Nan Ya Plastics	TWD	75.5	0.7	(0.9)	(0.7)	5.0	4.3	21.0	6.0	20,013	15.4	15.9	1.7	1.7	16.3	15.8	
Sinopec Shanghai	CNY	6.39	(1.2)	(1.1)	(9.9)	(2.4)	(1.7)	4.9	(0.8)	9,314	12.1	11.5	2.4	2.1	6.7	6.7	
Sinopec Yizheng(Fiber)	CNY	3.20	0.0	0.0	(2.1)	(13.5)	(18.2)	(17.7)	(22.0)	6,297	#N/A	#N/A	47.1	6.9	7.2	38.3	17.7
Reliance	INR	818	(0.6)	2.6	1.2	22.2	25.4	60.8	51.2	83,176	18.8	15.4	1.8	1.6	11.9	9.6	
Industries Qatar	QAR	88.5	0.2	(2.8)	(6.1)	(9.7)	(21.7)	(17.6)	(24.7)	14,568	14.3	12.5	1.6	1.5	50.5	46.0	
PTT Chemical	THB	77.0	1.3	0.7	6.9	7.7	6.6	28.3	22.2	10,395	10.4	10.5	1.3	1.2	5.5	5.3	
Petronas	MYR	7.4	0.1	3.4	5.3	2.8	(1.1)	10.4	6.0	14,061	16.3	16.3	2.0	1.9	8.9	8.8	
LG화학	KRW	370,000	(0.5)	(2.4)	7.6	27.4	33.6	48.3	41.8	23,166	14.4	13.8	1.8	1.6	6.3	5.9	
롯데케미칼	KRW	406,000	0.5	1.6	3.2	16.8	9.1	49.0	10.0	12,342	6.3	6.2	1.2	1.0	4.2	3.7	
한화케미칼	KRW	35,700	1.0	1.0	6.4	20.8	41.4	45.4	44.5	5,218	6.1	6.4	1.0	0.9	7.6	7.1	
금호석유	KRW	78,700	(1.1)	(0.1)	4.0	3.6	3.4	16.8	(4.0)	2,127	15.0	13.2	1.5	1.3	10.0	8.7	
SKC	KRW	38,100	2.0	3.3	4.8	26.2	20.4	38.8	15.5	1,268	10.5	9.2	0.9	0.9	9.2	7.7	
국도화학	KRW	51,500	1.2	(4.8)	(8.4)	(2.3)	0.6	(11.4)	(6.2)	265	8.4	9.0	0.7	0.6	4.9	5.0	
효성	KRW	7,000	1.3	(4.9)	3.9	3.2	(20.9)	37.3	2.9	4,952	9.3	8.1	1.4	1.2	7.4	6.6	
Average			0.3	(0.3)	1.0	5.6	5.0	25.4	10.6								
Refinery																	
Valero	USD	68.9	1.1	1.1	1.3	10.5	4.9	22.8	0.8	30,413	16.5	12.6	1.6	1.6	6.7	5.8	
Conoco Phillips	USD	45.1	0.1	3.3	(0.1)	3.6	(5.5)	8.8	(10.0)	54,897	223.3	36.8	1.8	1.9	9.1	6.8	
Formosa Petrochemical	TWD	107.0	0.5	0.5	0.5	0.0	(0.9)	12.0	(4.5)	34,067	16.4	18.9	3.2	3.2	9.7	11.3	
Andeavor	USD	100.8	1.2	0.6	3.7	12.7	20.7	26.4	15.2	15,808	18.4	13.7	1.6	1.5	9.2	7.0	
Marathon Petroleum	USD	52.6	0.5	0.3	(4.1)	(0.6)	4.9	22.1	4.5	26,644	19.4	15.6	2.1	2.1	8.7	7.5	
Devon Energy	USD	32.4	(0.9)	3.2	(0.0)	1.5	(25.6)	(26.7)	(29.1)	17,024	19.0	15.7	2.4	2.1	8.3	7.5	
Hollyfrontier	USD	31.9	2.0	1.9	4.6	32.5	16.3	26.9	(2.7)	5,653	23.7	15.1	1.2	1.2	9.0	6.8	
Phillips 66	USD	84.0	0.8	0.3	(1.2)	9.2	8.5	5.6	(2.7)	42,987	20.4	15.2	1.9	1.9	10.1	8.4	
Murphy Oil	USD	24.8	1.1	9.4	(4.2)	2.8	(10.6)	(11.0)	(20.4)	4,278	#N/A	#N/A	387.3	0.9	1.0	4.6	4.5
JX Holdings	JPY	537.1	0.8	0.9	9.0	10.3	(4.1)	33.2	8.6	16,964	8.4	7.9	0.8	0.8	8.3	7.9	
Idemitsu	JPY	2,777.0	(0.3)	3.4	5.6	(14.3)	(27.7)	43.0	(10.6)	5,324	6.3	6.3	0.7	0.7	8.1	7.8	
Nesteoil	EUR	36.3	(0.1)	(2.0)	4.0	4.3	7.4	(2.4)	(0.5)	0	13.9	13.9	2.2	2.1	7.9	8.3	
Ashland	USD	61.3	(0.0)	(1.2)	(3.3)	(8.0)	5.1	5.0	14.7	3,827	14.8	18.8	1.0	1.0	8.4	9.2	
Fuchs Petrolub	EUR	47.9	1.5	2.5	(0.2)	(3.3)	10.4	16.9	20.1	7,402	24.6	23.2	4.9	4.4	14.1	13.3	
SK이노베이션	KRW	187,000	1.1	(0.8)	5.9	17.6	21.4	23.0	27.6	15,336	7.8	7.7	1.0	0.9	4.7	4.2	
S-Oil	KRW	122,500	1.2	(2.4)	5.6	27.2	39.8	65.3	44.6	12,232	13.2	10.1	2.2	2.0	10.0	7.4	
GS	KRW	66,000	0.0	(6.5)	(11.3)	(9.3)	21.8	30.4	22.0	5,439	6.2	5.9	0.8	0.7	7.2	6.8	
Average			0.6	0.9	0.9	5.7	5.1	17.7	4.6								

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	09/07	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	79	0.3	3.5	(1.4)	(2.3)	(4.2)	(10.4)	(12.4)	334,858	23.2	20.5	1.9	1.9	9.8	9.4
BP	GBP	450	0.7	1.1	(4.0)	(1.5)	(2.8)	3.8	(11.7)	116,158	20.9	16.2	1.2	1.2	6.0	5.4
Shell	EUR	2,158	1.1	1.4	(1.8)	4.3	0.6	13.8	(3.8)	234,492	16.5	14.7	1.2	1.2	6.4	5.9
Chevron	USD	112	0.0	3.9	1.8	7.7	(0.0)	8.7	(5.0)	211,861	27.9	23.7	1.4	1.4	8.1	7.3
Total	EUR	44	0.7	2.0	1.1	(2.2)	(7.1)	(0.6)	(9.0)	132,967	13.4	12.4	1.2	1.2	6.3	5.5
Sinopec	CNY	6	(0.7)	(0.8)	(1.3)	(2.1)	5.9	19.2	10.2	107,431	13.9	13.0	1.0	0.9	4.5	4.3
Petrochina	CNY	8	(0.6)	(0.2)	(1.2)	4.4	0.0	8.0	1.8	215,337	59.9	34.4	1.2	1.2	6.8	6.6
CNOOC	CNY	11	(1.1)	0.4	(1.4)	(3.5)	(15.6)	(7.9)	(12.0)	52,908	12.4	10.8	0.9	0.8	3.7	3.5
Gazprom	RUB	118	0.7	(0.0)	(1.3)	(0.8)	(11.2)	(17.6)	(23.7)	48,990	4.3	3.8	0.2	0.2	3.7	3.4
Rosneft	RUB	306	1.0	0.7	(3.2)	(0.6)	(7.0)	(15.9)	(24.0)	56,898	9.4	6.7	0.8	0.7	4.9	4.2
Anadarko	USD	42	(0.4)	3.0	(5.0)	(10.6)	(33.2)	(26.3)	(39.5)	23,630	#N/A	#N/A	1.6	1.6	6.7	6.0
Petrobras	BRL	15	0.0	10.0	10.8	16.7	(1.1)	7.4	1.0	64,260	11.4	8.8	0.6	0.6	5.4	4.9
Lukoil	USD	2,876	(1.5)	(2.2)	(1.4)	6.3	(6.3)	(6.7)	(16.6)	43,039	5.8	5.4	0.6	0.6	N/A	N/A
Kinder	USD	19	(1.0)	(1.0)	(5.0)	2.5	(11.5)	(15.7)	(7.6)	47,497	29.6	27.3	1.2	1.2	11.5	11.1
Statoil	NOK	149	0.0	1.4	(1.0)	(0.5)	0.4	10.9	(5.9)	63,098	16.7	17.9	1.6	1.6	3.4	3.3
BHP	AUD	27	(1.4)	(0.2)	4.5	17.9	7.2	33.3	9.1	110,721	18.4	19.2	2.0	1.9	6.8	6.9
PTT E&P	THB	91	2.5	3.4	3.7	3.4	(0.5)	14.6	(6.0)	10,856	13.6	12.5	0.9	0.9	3.2	3.0
Petronas gas	MYR	18	(1.0)	(1.1)	(3.5)	(4.3)	(7.1)	(17.3)	(14.6)	8,554	20.3	19.0	2.9	2.7	11.6	10.7
Chesapeake	USD	4	2.9	6.3	(11.0)	(19.4)	(26.4)	(43.2)	(44.9)	3,515	5.6	4.9	#N/A	#N/A	16.8	7.2
Noble Energy	USD	25	(0.2)	5.9	(1.4)	(11.5)	(29.8)	(29.2)	(33.9)	12,246	#N/A	#N/A	1.2	1.2	8.3	6.9
Average		0	0.1	1.9	(1.1)	0.2	(7.5)	(3.6)	(12.4)							
PV																
WACKER	EUR	112.2	1.0	4.2	5.4	18.3	7.6	38.4	13.5	7,015	30.5	23.2	1.9	1.8	7.0	6.6
GCL-Poly	HKD	0.9	0.0	(1.1)	(3.3)	7.4	(14.7)	(21.6)	(6.5)	2,069	6.6	6.3	0.6	0.5	6.1	5.7
SunPower	USD	9.4	0.4	6.6	(3.5)	20.3	23.9	(7.7)	42.5	1,314	#N/A	#N/A	1.8	1.9	41.5	13.7
Canadian Solar	USD	16.4	1.9	4.1	(7.3)	30.3	22.2	21.8	34.2	948	10.3	6.8	0.9	0.9	9.5	8.4
JA Solar	USD	7.4	1.4	10.8	16.7	14.9	56.1	(1.1)	55.5	352	16.1	16.1	1.7	1.7	4.0	3.2
Yingli	USD	2.4	3.5	(3.3)	1.7	28.1	5.3	(38.1)	(8.8)	43	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	47.5	0.2	1.0	(2.3)	28.5	45.4	23.3	47.9	4,955	22.7	42.4	0.9	0.9	8.3	9.3
한화큐셀	USD	7.3	0.0	(1.6)	(14.3)	10.3	(8.5)	(38.4)	(10.5)	608	73.0	42.9	#N/A	#N/A	7.4	7.4
OCI	KRW	103,000	(1.0)	4.8	8.3	18.1	19.1	22.9	30.9	2,179	16.3	21.9	0.7	0.7	8.1	7.6
웅진에너지	KRW	9,730	(2.5)	10.2	16.2	42.9	91.9	27.0	105.5	215	N/A	0.7	0.7	8.1	7.6	9.3
신성솔라에너지	KRW	2,070	0.2	(1.4)	(8.4)	7.8	7.0	(12.3)	(6.3)	318	N/A	0.7	8.1	7.6	9.3	8.1
Average			0.5	3.1	0.8	20.6	23.2	1.3	27.1							
Gas Company																
Towngas China	HKD	5.2	(0.8)	(2.6)	(7.7)	6.4	11.7	20.8	26.5	1,828	11.7	10.8	1.0	0.9	11.4	10.6
Kulun	HKD	7.6	(0.1)	0.1	(0.5)	10.2	8.7	31.5	30.9	7,841	11.6	10.9	1.3	1.2	5.9	5.8
Beijing Enterprise	HKD	41.7	1.0	(4.6)	2.8	7.5	(2.5)	0.8	13.8	6,735	8.1	7.5	0.8	0.8	15.1	14.1
ENN Energy	HKD	53.0	(0.6)	5.2	(0.7)	21.4	23.4	31.7	66.0	7,330	13.7	12.2	2.7	2.3	8.7	7.9
China Resources Gas	HKD	27.1	(0.6)	(1.8)	(8.3)	8.6	4.2	4.2	24.3	7,713	15.4	13.8	2.9	2.6	9.2	8.4
China Gas Holdings	HKD	20.1	4.9	1.5	5.2	54.0	61.4	63.8	90.6	12,748	18.3	15.6	4.0	3.4	14.6	12.6
Shenzen Gas	HKD	14.3	1.7	(0.4)	2.4	9.0	27.2	11.9	26.7	3,704	11.8	11.3	1.3	1.3	9.3	8.8
Shann Xi	CNY	8.7	(0.3)	0.5	(0.9)	0.8	(9.9)	(17.0)	(9.1)	1,495	18.4	16.5	1.8	1.6	#N/A	#N/A
Suntien	HKD	1.8	2.3	3.5	4.1	16.6	22.2	55.8	76.0	837	6.8	5.8	0.6	0.6	9.6	8.2
China Oil & Gas	HKD	0.6	0.0	1.8	1.8	1.8	(11.1)	(3.4)	(8.2)	417	9.7	8.4	0.9	0.8	6.3	5.7
Average			0.8	0.3	(0.2)	13.6	13.5	20.0	33.7							
EV																
LG화학	KRW	370,000	(0.5)	(2.4)	7.6	27.4	33.6	48.3	41.8	23,166	13.7	13.4	1.8	1.6	6.5	6.2
삼성SDI	KRW	193,000	0.3	(1.8)	6.6	19.9	54.4	81.2	77.1	11,771	19.9	12.9	1.2	1.1	22.9	14.3
Panasonic	JPY	1482.5	1.4	1.2	(2.7)	0.7	18.8	41.3	24.6	33,518	19.3	14.8	2.0	1.8	6.2	5.4
GS Yuasa	JPY	537.0	0.9	(1.6)	3.9	6.1	(0.4)	29.4	10.5	2,047	16.2	14.9	1.3	1.2	7.3	6.8
NEC	JPY	289.0	0.0	(0.7)	(4.3)	(0.3)	3.6	5.1	(6.8)	6,938	18.1	16.2	0.9	0.8	6.8	6.1
BYD Auto	CNY	49.6	(1.5)	2.2	1.3	(1.8)	(2.8)	(15.9)	(0.2)	19,379	26.2	19.3	2.5	2.2	12.2	10.0
Tesla Motors	USD	350.6	1.8	(1.5)	(1.3)	(2.5)	41.0	73.8	64.1	58,512	#N/A	#N/A	11.7	10.2	74.4	26.0
Kandi Technologies	USD	4.0	0.0	0.0	0.0	(4.8)	(1.3)	(36.6)	(19.4)	190	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			0.3	(0.6)	1.4	5.6	18.4	28.3	24.0							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임