

1. News Summary (3 page)

2018년 7월 13일

News	
WTI comment	소폭 하락...리비아 원유 수출 재개
Headline	산유국들 증산 이행에 IEA가 2019년 산유량 성장률 상향 조정
News 1.	이란 "美 제재로 서방 떠난 자리 러시아가 채울 것"
News 2.	-
News 3.	-
News 4.	-

Conclusion	
미국, 사우디, 러시아의 증산은 유가 약세 기조로 이어질 수밖에 없음	
佛 토탈, 英 BP도 이란 투자 유보한 상황에서 미-러 관계에 긴장감 조성	
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	70.3	(0.1)	(3.6)	5.5	4.9	52.6
Dubai	\$/bbl	72.6	(2.9)	(3.2)	(1.3)	5.7	57.4
Gasoline	\$/bbl	82.1	(2.5)	(1.7)	(1.5)	0.0	37.5
Diesel	\$/bbl	84.5	(2.9)	(2.5)	(3.2)	(0.2)	43.6
Complex margin	\$/bbl	6.2	0.1	0.7	(0.1)	(1.7)	(1.8)
1M lagging	\$/bbl	4.4	(1.6)	(1.6)	(1.0)	(10.4)	(2.7)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	655	(2.2)	(1.5)	0.7	7.7	56.6
Butadiene	\$/t	1,650	0.0	2.5	(4.1)	28.9	69.2
HDPE	\$/t	1,340	0.0	0.0	(1.5)	0.0	24.1
MEG	\$/t	898	(0.2)	0.3	(1.9)	(13.7)	6.3
PX	\$/t	989	(0.2)	0.4	2.1	5.2	27.4
SM	\$/t	1,374	0.7	2.1	(5.0)	4.6	18.1
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.80	(1.1)	(1.4)	(5.4)	0.5	(3.2)
Natural rubber	\$/t	1,290	0.0	0.0	(4.4)	(5.8)	(11.6)
Cotton	C/lbs	89.2	4.7	6.6	(4.5)	6.6	34.1

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	07/09	\$/t	1,290	2.4	6.2	1.2	47.4
Propylene	07/09	\$/t	965	(1.5)	(4.7)	0.8	27.8
Benzene	07/09	\$/t	820	1.5	(4.1)	(2.4)	10.4
Toluene	07/09	\$/t	795	1.3	(2.5)	8.2	26.2
Xylene	07/09	\$/t	815	1.9	(3.0)	7.6	32.5
PP	07/09	\$/t	1,263	(1.6)	(1.6)	3.7	22.9
PVC	07/09	\$/t	935	0.0	1.6	(2.6)	7.5
ABS	07/09	\$/t	1,960	(2.0)	(4.9)	(1.0)	9.5
SBR	07/09	\$/t	1,770	(0.6)	(6.8)	7.3	22.1
SM	07/09	\$/t	1,368	0.4	(10.3)	0.6	17.9
BPA	07/09	\$/t	1,735	(1.7)	(7.6)	(2.9)	15.9
Caustic	07/09	\$/t	475	0.0	(13.6)	(24.1)	5.0
2-EH	07/09	\$/t	1,100	0.0	0.0	(2.7)	20.9
Caprolactam	07/09	\$/t	2,140	0.5	0.9	(3.6)	32.9
Solar				%	%	%	%
Polysilicon	07/11	\$/kg	11.1	(0.3)	(11.8)	(27.8)	(19.7)
Module	07/11	\$/W	0.26	(1.5)	(7.7)	(13.0)	(20.4)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	82.7	0.1	0.5	0.3	7.1	2.1
Shell	EUR	2,631	(0.2)	0.5	1.3	11.1	26.7
Petrochina	CNY	7.64	0.7	2.8	(2.4)	(1.2)	(1.9)
Gazprom	RUB	145.1	0.2	(0.3)	2.0	(0.6)	16.2
Petrobras	BRL	18.0	3.1	0.5	16.1	(17.2)	38.7
Refinery							
Phillips66	USD	111.1	0.4	0.9	(3.8)	8.3	35.1
Valero	USD	106.8	0.4	(0.7)	(9.5)	6.2	57.0
JX	JPY	765.4	(3.6)	(1.3)	3.2	13.8	57.5
Neste Oil	EUR	67.4	0.8	3.2	(2.6)	21.3	87.6

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	81.5	0.9	(1.1)	(6.8)	(3.3)	(1.0)
DowDuPont	USD	66.3	(0.1)	0.3	(5.1)	(0.3)	(0.0)
SABIC	SAR	126.8	(0.5)	2.6	0.2	8.6	25.0
Formosa Pla.	TWD	106.0	0.0	(6.6)	(1.4)	(0.5)	18.2
Shin-Etsu	JPY	10,335	0.4	3.8	(5.0)	(5.6)	2.0
Renewable							
Wacker	EUR	116.8	(1.4)	0.3	0.1	(19.3)	22.3
First Solar	USD	54.70	(0.0)	2.6	1.6	(23.2)	30.9
GCL-Poly	HKD	0.69	1.5	1.5	(13.8)	(33.0)	(17.9)
Tesla Motors	USD	316.7	(0.7)	2.4	(7.6)	7.7	(3.9)

4. Coverage Summary

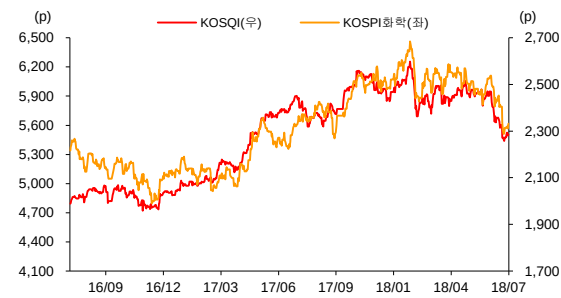
	07/12	1D	1W	1M	3M	6M	12M
KOSPI	2,285	0.2	1.2	(7.4)	(6.9)	(8.6)	(4.6)
KOSPI화학	5,618	0.9	1.9	(8.1)	(8.4)	(10.1)	3.9
LG화학	323,500	(0.8)	0.9	(15.0)	(13.3)	(22.3)	8.2
롯데케미칼	346,500	3.4	5.3	(8.9)	(18.3)	(8.9)	(1.1)
한화케미칼	20,300	(1.0)	(2.2)	(20.5)	(30.8)	(39.9)	(36.2)
금호석유화학	113,500	2.3	0.9	11.8	19.0	6.1	53.6
KCC	317,000	0.5	(0.3)	(10.3)	(11.2)	(22.2)	(23.4)
OCI	97,000	(0.5)	(0.7)	(15.3)	(40.9)	(48.0)	10.6
SKC	43,400	0.2	3.3	2.6	16.0	(5.2)	26.3
SK이노베이션	190,500	0.0	0.5	(11.4)	(5.2)	(6.2)	15.1
S-Oil	106,000	0.0	3.4	(4.9)	(8.6)	(9.8)	2.9
GS	50,700	(0.8)	(0.8)	(14.9)	(15.5)	(22.4)	(29.0)
SK가스	90,600	0.8	(0.8)	(4.9)	(6.7)	(2.6)	(24.2)
포스코대우	20,400	(3.8)	(1.2)	(15.5)	(13.2)	(5.3)	(8.3)
LG상사	22,600	(0.7)	1.3	(17.8)	(13.7)	(26.6)	(24.4)
한국전력	31,500	1.6	(0.5)	(10.1)	(8.7)	(15.8)	(25.9)
한국가스공사	60,600	1.0	6.3	(5.3)	22.4	34.4	19.3

투자의견	TP	%	P/E	P/B
* 추정치는 12M fwd 기준임				
* 모든 coverage 업체의 실적은 연결기준임				
매수	400,000	23.6	12.78	1.44
매수	400,000	15.4	10.76	0.98
매수	30,000	47.8	9.12	0.50
매수	150,000	32.2	10.58	1.47
매수	400,000	26.2	27.48	0.49
매수	140,000	44.3	7.38	0.70
매수	50,000	15.2	11.84	1.03
매수	230,000	20.7	11.20	0.95
매수	140,000	32.1	12.10	1.77
매수	80,000	57.8	4.70	0.57
매수	130,000	43.5	8.56	0.61
매수	25,000	22.5	10.70	0.80
매수	38,000	68.1	8.37	0.64
매수	45,000	42.9	7.62	0.25
매수	75,000	23.8	9.40	0.79

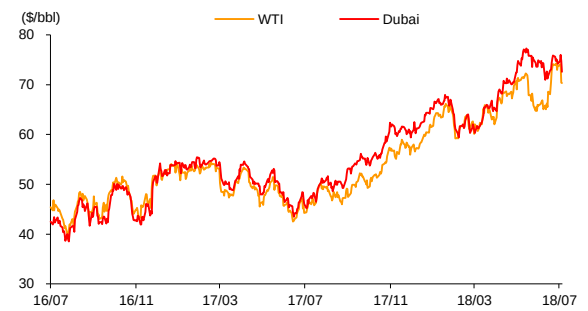
• 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확히 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
• 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
• 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
• 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

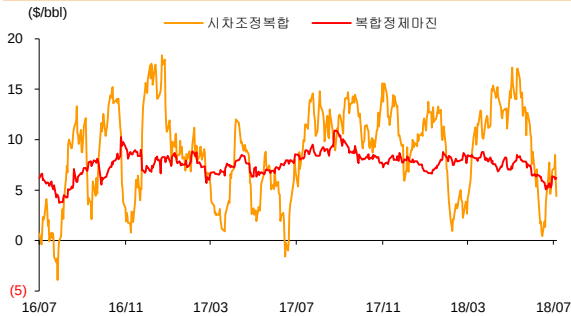
KOSPI/KOSPI화학



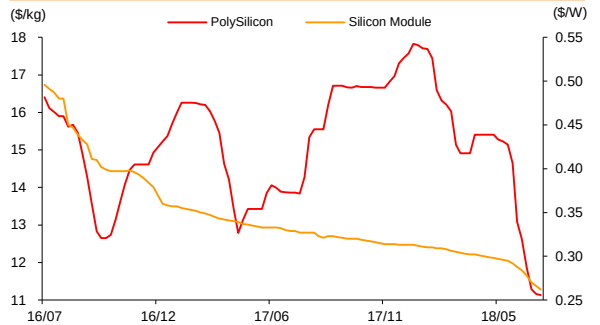
WTI/Dubai



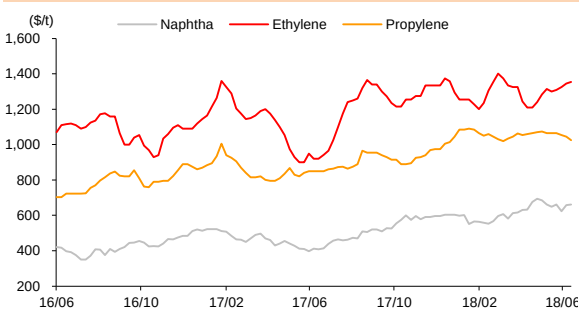
Complex & 1M lagging margin



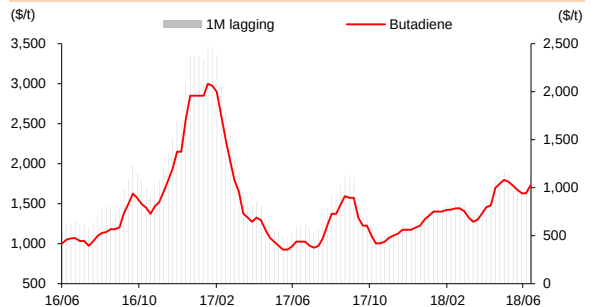
Polysilicon & Module prices



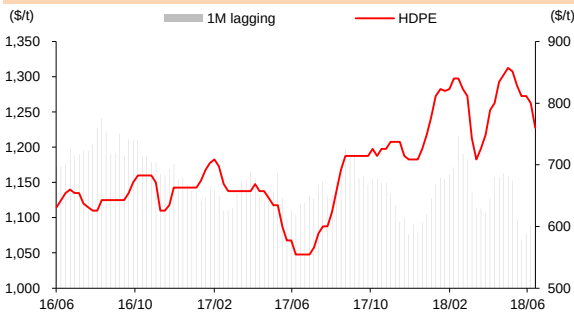
Naphtha/Ethylene/Propylene prices



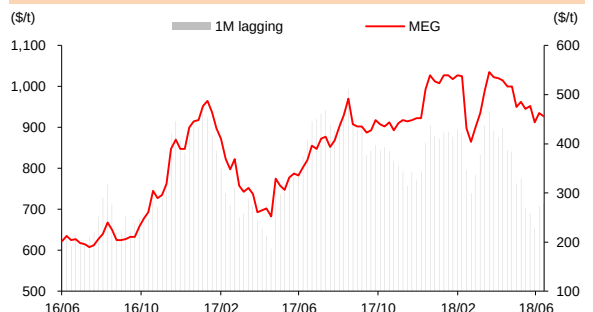
Butadiene price & 1M lagging naphtha spread



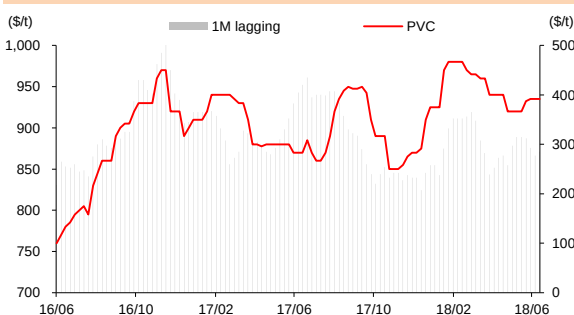
HDPE price & 1M lagging naphtha spread



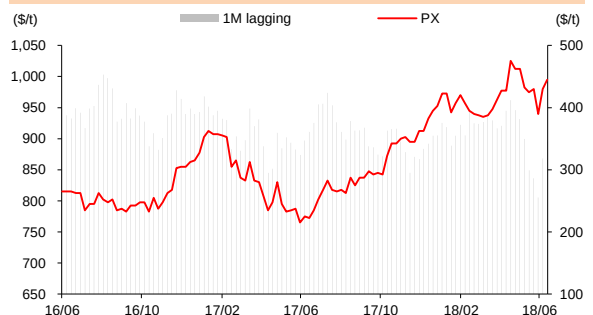
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

News Comment

Headline	(출처: Platts)
제목	산유국들 증산 이행에 IEA가 2019년 산유량 성장을 상향 조정
결론	미국, 사우디, 러시아의 증산은 유가 약세 기조로 이어질 수밖에 없음
세부	1) 러시아와 사우디가 증산에 동참하며 6월 산유량을 합산 50만b/d로 늘림 2) OPEC 산유량도 4개월래 최고치를 기록하며 6월에 3,187만b/d를 기록 3) IEA, "사우디가 '16년 산유량 쿼터를 깨고 43만b/d 늘린 1,046만b/d 생산" 4) IEA는 비OPEC의 2019년 산유량이 180만b/d 늘어날 것으로 상향 전망함 5) 미국, 사우디, 러시아의 증산은 유가 약세 기조로 이어질 수밖에 없음

Issue 1	(출처: 연합뉴스)
제목	이란 "美 제재로 서방 떠난 자리 러시아가 채울 것"
결론	佛 토탈, 英 BP도 이란 투자 유보한 상황에서 미-러 관계에 긴장감 조성
세부	1) 이란 외무 담당 수석보좌관인 아크바르 벨라야티가 러시아를 방문함 2) 벨라야티, "러시아가 이란 석유, 가스 분야에 \$500억 투자 준비가 됨" 3) 벨라야티, "로스네프트, 가스프롬이 \$100억을 투자하는 협상도 진행중" 4) 벨라야티, "러시아, 이란, 터키가 시리아 위해 아스타나 합의 지켜야 함" 5) 佛 토탈, 英 BP도 이란 투자 유보한 상황에서 미-러 관계에 긴장감 조성

Issue 3
제목
결론
세부
1)
2)
3)
4)
5)

Issue 5
제목
결론
세부
1)
2)
3)
4)
5)

WTI Comment	(출처: 이데일리)
제목	소폭 하락...리비아 원유 수출 재개
상승	
요인	
하락	리비아의 원유 수출 재개
요인	

Issue 2
제목
결론
세부
1)
2)
3)
4)
5)

Issue 4
제목
결론
세부
1)
2)
3)
4)
5)

Issue 6
제목
결론
세부
1)
2)
3)
4)
5)

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.857	0.857	0.855	0.851	0.811	0.820	0.876	0.833	0.904	0.887	0.829
	Change, %		0.0	0.2	0.6	5.6	4.6	(2.2)	2.9	(5.2)	(3.3)	3.4
	USD/JPY	112.6	112.0	110.6	110.4	107.3	111.1	113.2	112.6	108.8	112.1	108.9
	Change, %		0.5	1.7	2.0	4.9	1.3	(0.5)	(0.1)	3.5	0.4	3.4
	USD/KRW	1,126.0	1,120.2	1,118.4	1,077.1	1,069.6	1,064.9	1,145.0	1,066.7	1,160.5	1,130.9	1,078.7
	Change, %		0.5	0.7	4.5	5.3	5.7	(1.7)	5.6	(3.0)	(0.4)	4.4
Agriculture	Corn	336.5	331.3	343.5	377.5	388.8	346.3	376.3	350.8	358.5	359.4	372.8
	Change, %		1.6	(2.0)	(10.9)	(13.4)	(2.8)	(10.6)	(4.1)	(6.1)	(6.4)	(9.7)
	Soybean	830.0	829.8	835.5	954.0	1,060.8	944.0	1,016.8	951.8	987.5	975.9	990.8
	Change, %		0.0	(0.7)	(13.0)	(21.8)	(12.1)	(18.4)	(12.8)	(15.9)	(14.9)	(16.2)
	Wheat	482.5	469.8	504.0	534.5	481.0	420.5	522.5	427.0	436.4	436.0	477.3
	Change, %		2.7	(4.3)	(9.7)	0.3	14.7	(7.7)	13.0	10.6	10.7	1.1
	Rice	11.8	11.8	12.2	11.9	12.9	11.6	11.6	11.7	10.3	11.1	12.2
	Change, %		0.2	(3.3)	(0.8)	(8.1)	2.2	2.2	1.3	14.4	7.0	(3.1)
	Oats	257.5	256.0	258.3	242.3	237.5	249.5	300.3	241.0	196.3	252.3	246.2
	Change, %		0.6	(0.3)	6.3	8.4	3.2	(14.2)	6.8	31.2	2.1	4.6
	Palm Oil	2,138.0	2,156.0	2,270.0	2,330.0	2,392.0	2,474.0	2,679.0	2,444.0	2,653.8	2,787.3	2,416.1
	Change, %		(0.8)	(5.8)	(8.2)	(10.6)	(13.6)	(20.2)	(12.5)	(19.4)	(23.3)	(11.5)
	Cocoa	2,489.0	2,484.0	2,446.0	2,413.0	2,542.0	1,914.0	1,782.0	1,892.0	2,854.0	2,005.2	2,397.1
	Change, %		0.2	1.8	3.1	(2.1)	30.0	39.7	31.6	(12.8)	24.1	3.8
MYR/mt	Cotton	89.2	85.2	83.7	95.2	83.7	81.7	68.1	78.6	65.6	73.5	83.7
	Change, %		4.7	6.6	(6.3)	6.6	9.3	31.0	13.5	36.1	21.4	6.6
	Sugar	11.1	11.3	11.5	12.4	12.1	14.2	13.5	15.2	18.2	15.8	12.6
	Change, %		(1.9)	(3.5)	(10.3)	(8.0)	(21.9)	(17.9)	(26.9)	(39.0)	(29.9)	(12.1)
	Coffee	108.7	109.2	106.3	117.4	117.9	122.3	126.0	126.2	136.1	133.0	118.5
	Change, %		(0.5)	2.3	(7.4)	(7.8)	(11.1)	(13.7)	(13.9)	(20.1)	(18.3)	(8.3)
Energy	WTI	70.3	70.4	72.9	66.4	67.1	64.3	45.5	60.4	43.4	51.0	65.9
	Change, %		(0.1)	(3.6)	6.0	4.9	9.4	54.6	16.4	62.1	38.0	6.7
	Brent	74.5	73.4	77.4	75.9	72.0	69.9	47.7	66.9	45.1	54.9	71.5
	Change, %		1.4	(3.8)	(1.9)	3.4	6.6	55.9	11.3	65.2	35.7	4.1
	Natural Gas	2.8	2.8	2.8	2.9	2.7	3.2	3.0	3.0	2.6	3.0	2.8
	Change, %		(1.1)	(1.4)	(4.8)	4.1	(12.6)	(6.3)	(5.3)	9.6	(7.5)	(1.5)
	Ethanol	1.4	1.4	1.4	1.4	1.5	1.4	1.6	1.3	1.5	1.5	1.4
	Change, %		0.9	0.6	(2.3)	(5.8)	4.0	(9.0)	6.9	(6.8)	(5.7)	(1.9)
	RBOB Gasoline	207.2	206.1	212.9	209.0	205.5	185.0	152.1	179.9	140.0	162.9	199.6
	Change, %		0.5	(2.7)	(0.9)	0.8	12.0	36.2	15.1	48.0	27.2	3.8
	Coal	118.1	117.9	116.6	115.6	93.7	105.9	83.2	100.8	65.5	88.2	104.2
	Change, %		0.1	1.2	2.2	26.1	11.5	41.9	17.1	80.3	33.8	13.3
Metal	Gold	1,247.4	1,241.9	1,257.9	1,296.0	1,334.8	1,338.0	1,220.5	1,302.6	1,248.5	1,258.6	1,313.7
	Change, %		0.4	(0.8)	(3.7)	(6.5)	(6.8)	2.2	(4.2)	(0.1)	(0.9)	(5.0)
	Silver	15.9	15.8	16.1	16.9	16.5	17.2	15.9	16.9	17.1	17.1	16.6
	Change, %		0.9	(0.6)	(5.4)	(3.1)	(7.5)	0.2	(5.9)	(6.8)	(6.6)	(4.0)
	Copper	6,228.0	6,145.0	6,345.0	7,222.0	6,821.0	7,110.0	5,905.0	7,247.0	4,872.0	6,199.4	6,904.4
	Change, %		1.4	(1.8)	(13.8)	(8.7)	(12.4)	5.5	(14.1)	27.8	0.5	(9.8)
	Nickel	970.4	958.6	977.0	1,029.0	897.1	803.7	592.4	809.1	646.4	680.2	917.5
	Change, %		1.2	(0.7)	(5.7)	8.2	20.7	63.8	19.9	50.1	42.7	5.8
	Zinc	2,581.0	2,563.0	2,700.0	3,199.0	3,094.0	3,383.5	2,833.0	3,319.0	2,097.5	2,888.5	3,208.8
	Change, %		0.7	(4.4)	(19.3)	(16.6)	(23.7)	(8.9)	(22.2)	23.1	(10.6)	(19.6)
	Lead	2,194.0	2,183.0	2,356.0	2,462.0	2,331.0	2,538.8	2,309.0	2,482.8	1,868.3	2,315.7	2,442.3
	Change, %		0.5	(6.9)	(10.9)	(5.9)	(13.6)	(5.0)	(11.6)	17.4	(5.3)	(10.2)
	Aluminum	13,970.0	13,825.0	13,880.0	14,745.0	14,245.0	14,935.0	14,045.0	15,020.0	12,373.5	14,556.6	14,354.4
	Change, %		1.0	0.6	(5.3)	(1.9)	(6.5)	(0.5)	(7.0)	12.9	(4.0)	(2.7)
	Cobalt	70,250.0	70,250.0	72,250.0	80,750.0	92,000.0	74,947.0	59,190.0	75,205.0	25,480.1	55,906.9	83,944.3
	Change, %		0.0	(2.8)	(13.0)	(23.6)	(6.3)	18.7	(6.6)	175.7	25.7	(16.3)
	HR Coil	918.0	916.0	912.0	911.0	858.0	669.0	624.0	662.0	519.3	620.1	821.9
	Change, %		0.2	0.7	0.8	7.0	37.2	47.1	38.7	76.8	48.1	11.7
	Scrap	398.0	395.0	388.0	408.0	385.0	384.0	340.0	367.0	275.7	344.7	389.2
	Change, %		0.8	2.6	(2.5)	3.4	3.6	17.1	8.4	44.4	15.4	2.3

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		07/12	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	70.3	70.4	72.9	66.6	67.1	63.8	46.1	53.7	43.4	50.9	65.9
	Change, %		(0.1)	(3.6)	5.5	4.9	10.2	52.6	30.9	62.2	38.2	6.7
	Dubai	72.6	74.8	74.9	73.5	68.6	66.5	46.1	53.8	41.3	53.1	68.5
	Change, %		(2.9)	(3.2)	(1.3)	5.7	9.1	57.4	34.8	75.7	36.7	5.9
Crude Oil	Gasoline(휘발유)	82.1	84.2	83.5	83.4	82.1	78.9	59.7	69.8	56.3	68.0	81.2
Product	Change, %		(2.5)	(1.7)	(1.5)	0.0	4.1	37.5	17.5	45.9	20.7	1.1
	Kerosene(등유)	86.6	89.4	88.9	87.1	86.4	80.9	57.0	66.4	52.9	65.2	84.0
	Change, %		(3.1)	(2.5)	(0.6)	0.3	7.1	52.1	30.4	63.8	32.8	3.1
	Diesel(경유)	84.5	87.0	86.7	87.3	84.7	80.2	58.9	65.5	52.1	65.6	83.1
	Change, %		(2.9)	(2.5)	(3.2)	(0.2)	5.3	43.6	29.0	62.1	28.8	1.7
	Bunker-C	69.8	71.3	70.9	68.3	61.1	58.8	44.9	52.1	35.5	49.7	62.5
	Change, %		(2.1)	(1.5)	2.3	14.3	18.8	55.5	34.1	96.5	40.6	11.6
	Naphtha	71.4	73.0	73.1	70.9	66.9	66.4	43.5	53.5	42.6	53.7	67.6
	Change, %		(2.2)	(2.3)	0.7	6.7	7.6	64.2	33.6	67.6	32.9	5.7
Dubai	Gasoline(휘발유)	9.5	9.5	8.6	9.9	13.4	12.4	13.6	16.0	14.9	14.9	12.7
Spread	Change		0.1	0.9	(0.3)	(3.9)	(2.9)	(4.1)	(6.5)	(5.4)	(5.4)	(3.1)
	Kerosene(등유)	14.1	14.7	13.9	13.6	17.8	14.4	10.9	12.6	11.6	12.1	15.5
	Change		(0.6)	0.1	0.4	(3.7)	(0.3)	3.2	1.5	2.5	1.9	(1.4)
	Diesel(경유)	11.9	12.3	11.8	13.8	16.1	13.7	12.8	11.7	10.8	12.5	14.5
	Change		(0.3)	0.2	(1.9)	(4.1)	(1.8)	(0.8)	0.3	1.1	(0.6)	(2.6)
	Bunker-C	(2.8)	(3.4)	(4.0)	(5.2)	(7.6)	(7.8)	(1.2)	(1.8)	(5.8)	(3.4)	(6.0)
	Change		0.7	1.3	2.5	4.8	5.0	(1.5)	(1.0)	3.0	0.7	3.2
	Naphtha	(1.2)	(1.8)	(1.9)	(2.6)	(1.7)	(0.2)	(2.6)	(0.4)	1.3	0.6	(1.0)
	Change		0.6	0.7	1.4	0.6	(1.0)	1.5	(0.8)	(2.5)	(1.8)	(0.2)
Refining	Simple(단순)	2.3	2.0	1.4	1.5	2.0	1.0	4.0	3.8	1.9	3.2	2.1
Margin	Change		0.3	0.9	0.8	0.3	1.3	(1.7)	(1.5)	0.4	(0.9)	0.2
	Complex(복합)	6.2	6.1	5.5	6.3	7.9	6.7	8.0	8.3	7.0	8.0	7.4
	Change		0.1	0.7	(0.1)	(1.7)	(0.5)	(1.8)	(2.0)	(0.8)	(1.8)	(1.2)
	Complex(lagging)	4.4	6.0	6.0	5.4	14.8	13.8	7.1	18.0	8.5	8.9	9.5
	Change		(1.6)	(1.6)	(1.0)	(10.4)	(9.4)	(2.7)	(13.6)	(4.1)	(4.5)	(5.1)

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			07/12	07/11	07/10	07/09	07/06	07/05	07/04	07/03	07/02	06/29
Spot Price	Naphtha	CFR Japan	655.3	669.9	680.4	671.3	665.0	665.5	669.0	664.6	663.1	658.8
	Ethylene	CFR SE Asia	1,280.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0	1,260.0
	Propylene	FOB Korea	1,035.0	1,035.0	1,040.0	1,040.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,055.0
	Butadiene	FOB Korea	1,650.0	1,650.0	1,610.0	1,610.0	1,610.0	1,610.0	1,600.0	1,600.0	1,600.0	1,600.0
	HDPE	CFR FE Asia	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,350.0	1,350.0
	LDPE	CFR FE Asia	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,175.0
	LLDPE	CFR FE Asia	1,110.0	1,115.0	1,115.0	1,120.0	1,120.0	1,135.0	1,140.0	1,140.0	1,140.0	1,150.0
	MEG	CFR China	898.0	900.0	891.0	894.0	893.0	895.0	902.0	896.0	895.0	905.0
	PP	CFR FE Asia	1,230.0	1,230.0	1,230.0	1,235.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0
	PX	CFR China	989.0	991.0	995.3	989.0	988.5	984.8	987.8	987.8	982.7	973.7
	PTA	CFR China	848.0	852.0	852.0	852.0	850.0	850.0	850.0	845.0	845.0	845.0
	Benzene	FOB Korea	831.0	834.7	834.7	831.7	832.0	832.3	828.7	820.7	819.2	813.7
	Toluene	FOB Korea	747.0	747.0	752.0	751.0	747.0	740.0	744.0	745.0	745.0	746.0
	Xylene	FOB Korea	814.0	823.0	831.0	831.0	833.0	834.0	840.0	837.0	833.0	831.5
	SM	FOB Korea	1,374.0	1,364.0	1,353.0	1,337.0	1,349.0	1,346.0	1,323.0	1,315.0	1,298.0	1,311.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	Naphtha	CFR Japan	662.0	658.5	649.5	582.5	553.0	409.0	484.5	399.5	493.5	615.5
	Change, %			0.5	1.9	13.6	19.7	61.9	36.6	65.7	34.1	7.6
	Ethylene	CFR SE Asia	1,290.0	1,260.0	1,215.0	1,275.0	1,220.0	875.0	990.0	1,040.9	1,090.9	1,235.6
	Change, %			2.4	6.2	1.2	5.7	47.4	30.3	23.9	18.2	4.4
	Propylene	CFR SE Asia	965.0	980.0	1,012.5	957.5	995.0	755.0	815.0	705.7	823.6	1,054.4
	Change, %			(1.5)	(4.7)	0.8	(3.0)	27.8	18.4	36.8	17.2	(8.5)
	Butadiene	CFR SE Asia	1,680.0	1,580.0	1,675.0	1,225.0	1,390.0	975.0	2,100.0	1,116.8	1,481.1	1,432.8
	Change, %			6.3	0.3	37.1	20.9	72.3	(20.0)	50.4	13.4	17.3
	Benzene	CFR SE Asia	820.0	807.5	855.0	840.0	882.5	742.5	822.5	646.7	838.8	869.4
	Change, %			1.5	(4.1)	(2.4)	(7.1)	10.4	(0.3)	26.8	(2.2)	(5.7)
	Toluene	CFR SE Asia	795.0	785.0	815.0	735.0	720.0	630.0	690.0	630.5	689.5	767.0
	Change, %			1.3	(2.5)	8.2	10.4	26.2	15.2	26.1	15.3	3.6
	Xylene	CFR SE Asia	815.0	800.0	840.0	757.5	765.0	615.0	675.0	627.7	668.8	780.6
	Change, %			1.9	(3.0)	7.6	6.5	32.5	20.7	29.8	21.9	4.4
Spread	Ethylene	-Naphtha	628.0	601.5	565.5	692.5	667.0	466.0	505.5	641.4	597.4	620.0
	Change, %			4.4	11.1	(9.3)	(5.8)	34.8	24.2	(2.1)	5.1	1.3
	Propylene	-Naphtha	303.0	321.5	363.0	375.0	442.0	346.0	330.5	306.2	330.1	438.8
	Change, %			(5.8)	(16.5)	(19.2)	(31.4)	(12.4)	(8.3)	(1.0)	(8.2)	(31.0)
	Butadiene	-Naphtha	1,018.0	921.5	1,025.5	642.5	837.0	566.0	1,615.5	717.3	987.6	817.3
	Change, %			10.5	(0.7)	58.4	21.6	79.9	(37.0)	41.9	3.1	24.6
	Benzene	-Naphtha	158.0	149.0	205.5	257.5	329.5	333.5	338.0	247.2	345.3	253.9
	Change, %			6.0	(23.1)	(38.6)	(52.0)	(52.6)	(53.3)	(36.1)	(54.2)	(37.8)
	Toluene	-Naphtha	133.0	126.5	165.5	152.5	167.0	221.0	205.5	231.0	196.0	151.5
	Change, %			5.1	(19.6)	(12.8)	(20.4)	(39.8)	(35.3)	(42.4)	(32.1)	(12.2)
	Xylene	-Naphtha	153.0	141.5	190.5	175.0	212.0	206.0	190.5	228.2	175.3	165.0
	Change, %			8.1	(19.7)	(12.6)	(27.8)	(25.7)	(19.7)	(33.0)	(12.7)	(7.3)

자료 : Ciscem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,227.5	1,262.5	1,287.5	1,182.5	1,297.5	1,047.5	1,142.5	1,134.6	1,142.5	1,258.1
	Change, %			(2.8)	(4.7)	3.8	(5.4)	17.2	7.4	8.2	7.4	(2.4)
	MEG	CFR SE Asia	927.5	935.0	945.0	990.0	897.5	820.0	847.5	660.8	850.6	978.9
	Change, %			(0.8)	(1.9)	(6.3)	3.3	13.1	9.4	40.4	9.0	(5.2)
	PVC	CFR SE Asia	935.0	935.0	920.0	960.0	980.0	870.0	920.0	823.4	899.9	942.5
	Change, %			0.0	1.6	(2.6)	(4.6)	7.5	1.6	13.6	3.9	(0.8)
	PP	CFR SE Asia	1,262.5	1,282.5	1,282.5	1,217.5	1,307.5	1,027.5	1,032.5	978.4	1,099.6	1,261.7
	Change, %			(1.6)	(1.6)	3.7	(3.4)	22.9	22.3	29.0	14.8	0.1
	2-EH	CFR Korea	1,100.0	1,100.0	1,100.0	1,130.0	1,125.0	910.0	865.0	772.4	970.0	1,118.1
	Change, %			0.0	0.0	(2.7)	(2.2)	20.9	27.2	42.4	13.4	(1.6)
	ABS	CFR SE Asia	1,960.0	2,000.0	2,060.0	1,980.0	2,070.0	1,790.0	1,635.0	1,347.1	1,844.7	2,030.7
	Change, %			(2.0)	(4.9)	(1.0)	(5.3)	9.5	19.9	45.5	6.3	(3.5)
	SBR	CFR SE Asia	1,770.0	1,780.0	1,900.0	1,650.0	1,750.0	1,450.0	2,000.0	1,483.0	1,980.5	1,753.7
	Change, %			(0.6)	(6.8)	7.3	1.1	22.1	(11.5)	19.4	(10.6)	0.9
	SM	CFR SE Asia	1,367.5	1,362.5	1,525.0	1,360.0	1,397.5	1,160.0	1,205.0	1,064.6	1,253.8	1,400.5
	Change, %			0.4	(10.3)	0.6	(2.1)	17.9	13.5	28.5	9.1	(2.4)
	Caustic	FOB NEA	475.0	475.0	550.0	626.0	590.0	452.5	422.5	316.6	491.2	574.3
	Change, %			0.0	(13.6)	(24.1)	(19.5)	5.0	12.4	50.0	(3.3)	(17.3)
	PX	CFR SE Asia	995.0	980.0	975.0	937.5	945.0	772.5	855.0	790.4	844.4	965.4
	Change, %			1.5	2.1	6.1	5.3	28.8	16.4	25.9	17.8	3.1
	PO	CFR China	1,735.0	1,765.0	1,877.5	1,787.5	1,962.5	1,497.5	1,562.5	1,396.8	1,601.2	1,877.6
	Change, %			(1.7)	(7.6)	(2.9)	(11.6)	15.9	11.0	24.2	8.4	(7.6)
	Caprolactam	CFR SE Asia	2,140.0	2,130.0	2,120.0	2,220.0	2,150.0	1,610.0	1,850.0	1,344.9	1,936.4	2,120.2
	Change, %			0.5	0.9	(3.6)	(0.5)	32.9	15.7	59.1	10.5	0.9
	PTA	CFR SE Asia	865.0	860.0	860.0	777.5	810.0	635.0	642.5	613.7	667.8	804.3
	Change, %			0.6	0.6	11.3	6.8	36.2	34.6	41.0	29.5	7.6
Spread	HDPE		565.5	604.0	638.0	600.0	744.5	638.5	658.0	735.1	649.0	642.6
	Change, %			(6.4)	(11.4)	(5.8)	(24.0)	(11.4)	(14.1)	(23.1)	(12.9)	(12.0)
	MEG		265.5	276.5	295.5	407.5	344.5	411.0	363.0	261.3	357.1	363.4
	Change, %			(4.0)	(10.2)	(34.8)	(22.9)	(35.4)	(26.9)	1.6	(25.7)	(26.9)
	PVC		273.0	276.5	270.5	377.5	427.0	461.0	435.5	423.9	406.4	327.0
	Change, %			(1.3)	0.9	(27.7)	(36.1)	(40.8)	(37.3)	(35.6)	(32.8)	(16.5)
	PP		600.5	624.0	633.0	635.0	754.5	618.5	548.0	578.9	606.1	646.2
	Change, %			(3.8)	(5.1)	(5.4)	(20.4)	(2.9)	9.6	3.7	(0.9)	(7.1)
	2-EH		438.0	441.5	450.5	547.5	572.0	501.0	380.5	372.9	476.5	502.6
	Change, %			(0.8)	(2.8)	(20.0)	(23.4)	(12.6)	15.1	17.5	(8.1)	(12.9)
	ABS		1,298.0	1,341.5	1,410.5	1,397.5	1,517.0	1,381.0	1,150.5	947.6	1,351.2	1,415.2
	Change, %			(3.2)	(8.0)	(7.1)	(14.4)	(6.0)	12.8	37.0	(3.9)	(8.3)
	SBR	BD spread	90.0	200.0	225.0	425.0	360.0	475.0	(100.0)	366.2	499.4	320.9
	Change, %			(55.0)	(60.0)	(78.8)	(75.0)	(81.1)	(190.0)	(75.4)	(82.0)	(72.0)
	SM		705.5	704.0	875.5	777.5	844.5	751.0	720.5	665.1	760.3	784.9
	Change, %			0.2	(19.4)	(9.3)	(16.5)	(6.1)	(2.1)	6.1	(7.2)	(10.1)
	Caustic											
	Change, %											
	PX		333.0	321.5	325.5	355.0	392.0	363.5	370.5	390.9	351.0	349.9
	Change, %			3.6	2.3	(6.2)	(15.1)	(8.4)	(10.1)	(14.8)	(5.1)	(4.8)
	PO	propylene spread	770.0	785.0	865.0	830.0	967.5	742.5	747.5	691.1	777.6	823.2
	Change, %			(1.9)	(11.0)	(7.2)	(20.4)	3.7	3.0	11.4	(1.0)	(6.5)
	Caprolactam	benzene spread	1,320.0	1,322.5	1,265.0	1,380.0	1,267.5	867.5	1,027.5	698.2	1,097.6	1,250.7
	Change, %			(0.2)	4.3	(4.3)	4.1	52.2	28.5	89.1	20.3	5.5
	PTA	px spread	168.5	174.0	177.5	121.3	148.5	94.3	44.0	60.4	76.7	128.5
	Change, %			(3.2)	(5.1)	39.0	13.5	78.8	283.0	178.9	119.7	31.1

자료 : Ciscchem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	07/12	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	66.3	(0.1)	0.3	(5.1)	(0.3)	(12.1)	(0.0)	(7.0)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	99.2	0.0	(0.3)	(9.4)	(6.6)	1.8	15.6	7.1	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	81.5	0.9	(1.1)	(6.8)	(3.3)	(13.8)	(1.0)	(11.2)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	73.3	(0.6)	(0.9)	(4.7)	(5.8)	(3.5)	(5.3)	0.4	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	101.9	(0.0)	1.2	(0.5)	(5.7)	(0.2)	5.1	0.3	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	67.0	0.3	0.7	(5.3)	8.2	(3.0)	(1.5)	1.1	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	609	(1.5)	0.5	(7.0)	0.2	(28.7)	(6.2)	(24.8)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	917	(2.1)	1.9	(8.6)	(10.1)	(29.2)	(6.4)	(25.9)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,335	0.4	3.8	(5.0)	(5.6)	(13.5)	2.0	(9.7)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,399	(0.5)	1.3	(6.9)	(2.2)	(6.3)	14.2	(3.7)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	1,919	(0.8)	4.3	(6.6)	(18.1)	(15.6)	(2.5)	(13.5)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	7,941	0.9	(1.1)	(9.2)	(3.4)	(22.0)	(19.0)	(20.7)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	126.8	(0.5)	2.6	0.2	8.6	24.9	25.0	25.0	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	75.2	0.0	(0.1)	3.0	5.2	22.3	37.9	27.5	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	106.0	0.0	(6.6)	(1.4)	(0.5)	4.4	18.2	7.4	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	114.0	0.0	(2.1)	(1.7)	3.2	5.1	24.5	10.7	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	84.7	1.0	(3.8)	(0.7)	(0.1)	4.4	9.4	8.7	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.52	0.9	1.1	(3.8)	(6.4)	(20.5)	(17.9)	(12.8)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fiber)	CNY	1.88	1.6	2.2	(8.3)	(7.8)	(35.6)	(41.6)	(29.6)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,082	4.2	12.2	8.5	16.5	14.1	43.3	19.0	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	113.6	(0.0)	1.0	2.8	0.1	7.2	15.3	17.1	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	77.5	0.0	7.6	(11.4)	(19.9)	(16.2)	12.3	(8.8)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.5	(0.1)	0.8	2.4	0.6	5.6	23.6	10.8	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	323,500	(0.8)	0.9	(15.0)	(14.4)	(24.1)	8.0	(20.1)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	346,500	3.4	5.3	(8.9)	(19.0)	(12.2)	(1.0)	(5.8)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	20,300	(1.0)	(2.2)	(20.5)	(31.8)	(37.6)	(33.9)	(35.8)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	113,500	2.3	0.9	11.8	16.5	9.7	56.3	14.1	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	43,400	0.2	3.3	2.6	15.0	(4.5)	15.7	(7.7)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	58,000	2.1	1.4	(14.7)	(5.8)	(10.6)	10.9	(8.1)	359	#N/A	N/A	#N/A	N/A	#N/A	N/A
효성	KRW	6,320	2.6	6.6	(16.6)	(29.8)	(24.1)	11.5	(16.6)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			0.4	1.4	(4.9)	(4.1)	(7.8)	7.1	(3.8)							
Refinery																
Valero	USD	106.8	0.4	(0.7)	(9.5)	6.2	10.4	57.0	16.2	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	71.5	2.0	3.7	2.9	13.0	19.0	65.2	30.2	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemical	TWD	118.5	(0.4)	(0.4)	(3.7)	(1.3)	(1.3)	14.5	2.6	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	133.7	0.6	1.4	(4.0)	21.4	12.2	38.6	16.9	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	70.5	0.8	1.3	(6.6)	(5.0)	(1.3)	31.2	6.9	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	43.9	(0.4)	(0.1)	4.8	33.8	(0.2)	42.6	6.1	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	67.9	1.0	1.0	(6.8)	25.3	29.3	150.5	32.6	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	111.1	0.4	0.9	(3.8)	8.3	5.9	35.1	9.9	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	33.0	(0.7)	(0.5)	(0.8)	16.1	(4.8)	33.3	6.2	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	765.4	(3.6)	(1.3)	3.2	13.8	(1.8)	57.5	5.3	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,780.0	2.2	26.0	26.3	25.6	6.9	72.8	5.6	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	67.4	0.8	3.2	(2.6)	21.3	20.0	87.6	26.3	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	81.1	0.9	3.2	2.0	16.7	9.4	22.8	13.9	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	43.4	0.4	2.7	(5.4)	(0.4)	(2.1)	(11.7)	(1.9)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	190,500	0.0	0.5	(11.4)	(6.8)	(5.2)	16.5	(6.8)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	106,000	0.0	3.4	(4.9)	(9.8)	(6.6)	3.9	(9.4)	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	50,700	(0.8)	(0.8)	(14.9)	(17.4)	(21.8)	(28.9)	(18.5)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			0.2	2.5	(2.1)	9.5	4.0	40.5	8.4							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	07/12	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
E&P/Shale																
Exxon Mobil	USD	83	0.1	0.5	0.3	7.1	(5.5)	2.1	(1.1)	350,096	16.6	15.2	1.8	1.7	7.6	7.1
BP	GBP	571	0.1	(1.9)	(1.2)	13.3	6.8	26.8	9.3	150,943	13.9	13.0	1.5	1.4	5.3	5.1
Shell	EUR	2,631	(0.2)	0.5	1.3	11.1	2.2	26.7	6.1	294,994	12.3	11.0	1.4	1.4	5.8	5.5
Chevron	USD	124	0.6	0.2	(2.2)	4.2	(7.0)	19.6	(0.7)	237,456	15.5	14.9	1.6	1.5	6.3	6.1
Total	EUR	53	0.2	(0.8)	1.8	8.9	9.6	23.7	15.7	165,800	11.8	11.0	1.3	1.2	5.5	5.2
Sinopec	CNY	6	(0.5)	0.6	(1.2)	(8.5)	(11.2)	4.4	3.6	114,016	10.1	9.7	1.0	1.0	3.8	3.8
Petrochina	CNY	8	0.7	2.8	(2.4)	(1.2)	(12.7)	(1.9)	(5.6)	201,448	24.9	21.1	1.1	1.1	5.5	5.4
CNOOC	CNY	9	0.3	3.5	(10.3)	(19.9)	(20.4)	(14.5)	(11.2)	73,608	9.1	9.2	1.2	1.1	3.9	3.9
Gazprom	RUB	145	0.2	(0.3)	2.0	(0.6)	0.8	16.2	11.2	55,184	3.2	3.2	0.2	0.3	2.6	2.6
Rosneft	RUB	406	(0.8)	0.1	5.7	22.1	25.3	26.8	39.4	69,212	7.7	6.6	0.9	0.9	4.6	4.4
Anadarko	USD	74	0.5	1.5	3.3	17.4	24.9	68.2	37.4	37,957	24.8	20.5	4.0	3.5	7.0	6.1
Petrobras	BRL	18	3.1	0.5	16.1	(17.2)	3.8	38.7	11.5	65,685	6.8	6.0	0.7	0.7	4.3	4.1
Lukoil	USD	4,236	(1.0)	(5.1)	1.8	6.5	8.4	45.3	27.0	58,093	5.4	5.6	0.8	0.7	N/A	N/A
Kinder	USD	18	1.0	2.6	6.5	17.5	(7.6)	(7.1)	(0.2)	47,497	20.8	18.7	1.2	1.2	10.8	10.6
Equinor ASA	NOK	218	(1.4)	(0.8)	0.6	9.7	17.4	55.3	24.5	89,863	14.0	13.0	2.0	1.9	3.4	3.3
BHP	AUD	34	(0.6)	2.1	(0.4)	13.3	6.5	34.9	13.5	126,180	14.8	16.6	2.1	2.1	6.1	6.4
PTT E&P	THB	134	(1.5)	1.1	(1.8)	13.6	20.7	60.0	34.0	16,029	13.1	12.3	1.3	1.3	4.0	3.7
Petronas gas	MYR	18	0.8	2.3	1.7	(1.6)	(5.8)	(4.8)	2.4	8,780	18.8	18.5	2.7	2.6	10.3	10.2
Chesapeake	USD	5	(0.6)	(2.8)	6.4	62.5	19.6	9.6	29.3	4,668	6.2	6.8	1,280.0	6.1	6.5	6.2
Noble Energy	USD	36	0.2	3.2	4.9	14.1	11.5	29.1	23.4	17,416	30.8	22.2	1.6	1.5	7.9	6.6
Average		0	0.1	0.5	1.6	8.6	4.4	23.0	13.5							
PV																
WACKER	EUR	116.8	(1.4)	0.3	0.1	(19.3)	(32.2)	22.3	(28.0)	7,113	16.9	15.0	1.8	1.7	5.9	5.6
GCL-Poly	HKD	0.7	1.5	1.5	(13.8)	(33.0)	(53.4)	(17.9)	(50.7)	1,634	6.2	5.4	0.4	0.4	6.3	5.8
SunPower	USD	8.0	0.5	1.0	1.4	(2.1)	(12.4)	(21.6)	(5.5)	1,123	#N/A	#N/A	#N/A	#N/A	20.7	12.1
Canadian Solar	USD	13.1	0.3	5.2	5.3	(19.2)	(21.1)	(20.2)	(22.5)	765	8.7	8.7	0.8	0.7	7.8	8.4
JA Solar	USD	7.5	0.3	10.4	4.3	6.7	1.1	22.1	0.0	355	#N/A	#N/A	#N/A	#N/A	4.9	7.0
Yingli	USD	0.4	(4.9)	62.5	(73.8)	(75.9)	(79.3)	(82.0)	(75.2)	8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	54.7	(0.0)	2.6	1.6	(23.2)	(25.5)	30.9	(19.0)	5,731	32.2	17.8	1.0	1.0	9.7	5.3
한화큐셀	USD	5.7	1.6	5.0	(12.8)	(21.7)	(22.3)	(19.6)	(18.8)	474	10.2	21.1	#N/A	#N/A	7.8	8.0
OCI	KRW	97,000	(0.5)	(0.7)	(15.3)	(42.4)	(45.7)	15.5	(28.7)	2,057	0.0	9.7	0.0	0.7	0.0	4.5
웅진에너지	KRW	3,530	0.3	4.9	(32.4)	(47.2)	(56.0)	(51.9)	(57.1)	93	N/A	0.0	0.7	0.0	4.5	0.0
신성솔라에너지	KRW	1,350	(0.7)	2.7	(21.3)	(18.4)	(33.2)	(37.1)	(29.5)	208	N/A	0.7	0.0	4.5	0.0	6.8
Average			(0.3)	8.7	(14.2)	(26.9)	(34.5)	(14.5)	(30.5)							
Gas Company																
Towngas China	HKD	7.9	4.4	5.2	6.9	10.9	29.5	49.2	26.0	2,790	15.5	13.8	1.3	1.2	12.8	11.6
Kulun	HKD	6.9	(1.1)	0.7	(2.8)	(0.3)	(14.0)	(3.1)	(15.4)	7,086	9.9	8.5	1.1	1.0	5.7	5.1
Beijing Enterprise	HKD	38.6	2.3	3.1	(9.7)	(6.4)	(15.6)	(7.2)	(16.9)	6,199	6.8	6.1	0.7	0.6	11.9	11.3
ENN Energy	HKD	80.6	2.2	2.7	0.7	12.5	49.1	49.1	44.6	11,144	18.0	15.1	3.6	3.1	10.5	9.2
China Resources Gas	HKD	34.2	1.8	3.6	12.3	21.5	35.7	12.1	20.6	9,691	18.0	16.1	3.1	2.6	9.8	8.9
China Gas Holdings	HKD	34.1	6.4	10.0	(2.2)	21.0	56.6	80.0	57.6	21,555	22.0	18.5	5.1	4.3	16.5	14.0
Shenzen Gas	HKD	15.0	0.5	3.2	(13.1)	(11.0)	(5.1)	10.5	0.7	4,025	9.1	7.9	1.2	1.1	5.8	5.0
Shann Xi	CNY	7.2	2.1	7.3	(1.0)	3.5	(14.9)	(16.4)	(14.8)	1,202	16.5	14.5	1.4	1.3	#N/A	#N/A
Suntien	HKD	2.3	0.4	7.1	(13.4)	(11.4)	8.7	37.8	9.2	1,070	5.9	5.2	0.7	0.7	8.3	7.2
China Oil & Gas	HKD	0.6	0.0	3.4	(9.1)	3.4	(25.9)	5.3	(29.4)	446	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			1.9	4.6	(3.1)	4.4	10.4	21.7	8.2							
EV																
LG 화학	KRW	323,500	(0.8)	0.9	(15.0)	(14.4)	(24.1)	8.0	(20.1)	20,308	12.2	11.1	1.4	1.3	5.7	5.1
삼성SDI	KRW	233,500	3.8	8.6	1.5	23.2	8.4	35.4	14.2	14,279	21.7	15.7	1.4	1.3	15.0	11.7
Panasonic	JPY	1404.0	0.4	(0.2)	(12.1)	(7.8)	(17.8)	(7.8)	(14.9)	30,630	12.8	11.3	1.8	1.6	4.7	4.3
GS Yuasa	JPY	495.0	0.8	1.4	(4.4)	(13.2)	(14.1)	(0.2)	(11.8)	1,821	14.3	13.2	1.1	1.0	6.6	6.2
NEC	JPY	2933.0	(1.3)	(1.3)	(4.0)	0.6	(6.0)	(1.2)	(3.5)	6,794	22.3	12.5	0.8	0.8	7.0	5.4
BYD Auto	CNY	46.5	2.3	2.1	(7.0)	(16.8)	(30.6)	(6.7)	(28.5)	18,242	27.3	20.4	2.2	2.0	12.2	10.4
Tesla Motors	USD	316.7	(0.7)	2.4	(7.6)	7.7	(5.8)	(3.9)	1.7	53,775	#N/A	#N/A	136.3	10.6	9.8	20.1
Kandi Technologies	USD	4.2	0.0	(1.7)	(8.6)	(14.6)	(41.3)	1.8	(37.9)	216	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			0.6	1.5	(7.2)	(4.4)	(16.4)	3.2	(12.6)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임