

1. News Summary (3 page)

2016년 1월 7일

News	Conclusion
WTI comment	공급과잉 우려로 유가 하락
Headline	롯데케미칼, 자회사 타이탄케미칼 IPO 진행
News 1.	SK이노베이션, TAC필름 사업 매각 추진
News 2.	Formosa, 미국 1월 PE 가격 인상 결정 연기하기로
News 3.	[주간가격] 태양광 제품가격, 폴리하락/모듈보합/셀상승 기조 유지 중
News 4.	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	34.0	(5.6)	(7.2)	(9.8)	(31.3)	(29.1)
Dubai	\$/bbl	30.8	(2.8)	(6.0)	(19.8)	(36.5)	(36.0)
Gasoline	\$/bbl	54.9	(2.6)	0.3	(1.9)	(18.6)	(6.4)
Diesel	\$/bbl	41.3	(1.2)	(5.9)	(21.6)	(34.2)	(36.2)
Complex margin	\$/bbl	10.3	0.0	0.8	0.7	1.6	2.5
1M lagging	\$/bbl	0.1	(0.4)	(2.0)	(4.9)	(10.1)	20.0
Petrochemical			%	%	%	%	%
Naphtha	\$/t	410	(3.1)	(1.5)	(8.5)	(10.7)	(4.0)
Butadiene	\$/t	710	0.0	1.4	6.0	(20.2)	(23.2)
HDPE	\$/t	1,075	0.0	0.0	2.9	(7.3)	(6.9)
MEG	\$/t	591	1.4	(4.5)	5.3	(9.4)	(19.3)
PX	\$/t	743	(0.3)	(0.6)	(3.8)	(4.6)	(5.5)
SM	\$/t	931	1.9	3.4	4.4	6.3	5.4
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.27	(2.5)	2.4	7.1	(19.6)	(33.5)
Natural rubber	\$/t	1,050	(2.8)	(6.3)	(10.3)	(18.6)	(26.6)
Cotton	C/lbs	62.0	(1.1)	(3.1)	(4.3)	0.1	(5.5)

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	01/04	\$/t	1,090	(0.9)	1.4	24.6	9.5
Propylene	01/04	\$/t	650	0.0	5.7	42.9	(3.7)
Benzene	01/04	\$/t	580	3.1	(6.1)	0.4	(17.1)
Toluene	01/04	\$/t	630	0.0	(3.8)	(3.8)	(3.1)
Xylene	01/04	\$/t	625	(4.2)	(7.4)	(8.1)	1.6
PP	01/04	\$/t	835	1.2	(5.6)	(16.9)	(26.8)
PVC	01/04	\$/t	715	1.4	0.0	(9.5)	(10.1)
ABS	01/04	\$/t	1,130	2.7	1.1	(7.0)	(28.7)
SBR	01/04	\$/t	1,150	6.0	4.1	(6.5)	(23.1)
SM	01/04	\$/t	910	0.0	(0.8)	(1.1)	(6.7)
BPA	01/04	\$/t	1,258	(3.8)	(13.0)	(17.4)	(29.8)
Caustic	01/04	\$/t	285	0.0	(1.7)	(9.5)	3.6
2-EH	01/04	\$/t	680	0.0	(0.7)	(13.9)	(39.8)
Caprolactam	01/04	\$/t	1,260	(1.9)	(3.1)	(6.7)	(34.4)
Solar				%	%	%	%
Polysilicon	01/06	\$/kg	13.1	(0.8)	(3.5)	(10.7)	(31.9)
Module	01/06	\$/W	0.55	(0.2)	(0.7)	(0.7)	(10.2)

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	77.5	(0.8)	(0.8)	(1.8)	(0.5)	(13.7)
Shell	EUR	1,498	(1.9)	(3.1)	(5.6)	(14.2)	(28.0)
Petrochina	CNY	8.31	3.0	(1.2)	(3.1)	1.0	(28.9)
Gazprom	RUB	135.9	(0.4)	(0.1)	(1.3)	(1.4)	(2.1)
Petrobras	BRL	6.4	(4.2)	(4.5)	(14.9)	(21.9)	(23.2)
Refinery							
Phillips66	USD	78.0	(3.7)	(4.9)	(13.5)	(5.5)	18.2
Valero	USD	70.7	(0.7)	(1.3)	(1.0)	10.5	48.2
JX	JPY	486.5	(3.6)	(4.3)	(5.7)	4.9	7.1
Neste Oil	EUR	27.3	0.0	(1.2)	4.0	24.7	37.1

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	65.8	(3.0)	(7.0)	(10.6)	(5.6)	(1.9)
Dow Chemical	USD	48.5	(2.2)	(6.2)	(9.1)	2.9	11.5
SABIC	SAR	70.5	(3.2)	(7.8)	(19.4)	(11.0)	(8.5)
Formosa Pla.	TWD	73.0	0.1	(0.7)	(2.4)	1.4	5.8
Shin-Etsu	JPY	6,413	(0.9)	(3.1)	(5.7)	(0.8)	(16.1)
Renewable							
Wacker	EUR	72.5	(4.0)	(6.5)	(7.5)	0.0	(16.2)
Yingli	USD	3.86	(6.5)	(18.7)	(41.5)	(16.1)	(82.3)
Tesla	USD	219.0	(2.0)	(8.0)	(4.9)	(9.3)	3.7
BYD	CNY	60.4	1.8	(8.5)	(2.3)	0.7	49.8

4. Coverage Summary

	01/06	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,925	(0.3)	(1.8)	(1.9)	(4.7)	(5.6)	0.5				* 추정치는 12M fwd 기준임	
KOSPI화학	5,353	0.6	0.1	2.9	4.7	6.2	45.7				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	338,000	(0.4)	2.9	10.3	17.0	30.5	93.7	매수	380,000	12.4	15.06	1.85
롯데케미칼	260,000	4.0	6.8	9.9	(1.5)	(4.1)	67.2	매수	290,000	11.5	11.56	1.08
한화케미칼	28,000	5.9	2.9	7.7	28.7	49.7	145.6	매수	30,000	7.1	9.90	0.80
금호석유화학	53,000	1.5	1.7	(7.5)	(14.8)	(26.0)	(34.0)	매수	70,000	32.1	11.72	1.08
KCC	407,500	(0.6)	(2.4)	(8.4)	(4.8)	(15.5)	(22.7)	매수	550,000	35.0	12.66	0.63
OCI	73,400	(0.3)	(2.1)	(6.7)	(13.6)	(35.0)	(1.6)	매수	85,000	15.8	17.47	0.73
SKC	31,300	(1.1)	(7.4)	(10.1)	(17.7)	(17.2)	18.3	매수	43,000	37.4	9.46	0.76
국도화학	58,000	2.5	(2.2)	(1.0)	(17.6)	(15.7)	44.5	매수	100,000	72.4	7.18	0.69
SK이노베이션	126,000	(0.8)	(3.1)	(2.3)	10.5	11.0	53.7	매수	140,000	11.1	6.89	0.67
S-Oil	77,100	(1.9)	(2.9)	1.2	9.2	22.0	59.8	매수	85,000	10.2	12.51	1.44
GS	47,600	(4.0)	(6.1)	(5.0)	(3.2)	(4.5)	21.7	매수	60,000	26.1	6.14	0.78
SK가스	70,400	(1.0)	(3.6)	(8.2)	(14.9)	(20.6)	(20.4)	매수	90,000	27.8	7.77	0.63
대우인터내셔널	15,900	(1.5)	(2.8)	(13.1)	(26.9)	(40.3)	(47.0)	매수	22,000	38.4	8.80	0.75
LG상사	33,050	(1.3)	(2.2)	(5.4)	3.3	(15.6)	13.8	매수	40,000	21.0	10.64	0.86

* 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.

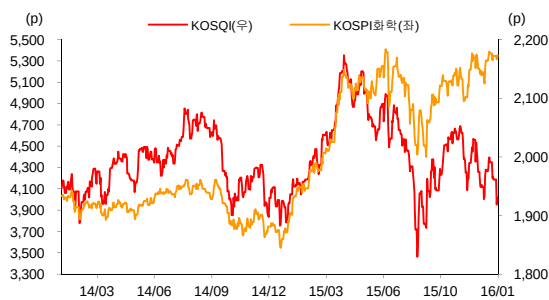
* 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.

* 본 보고서는 기관투자가 또는 제 3자에게 사전 제공된 사실이 없습니다.

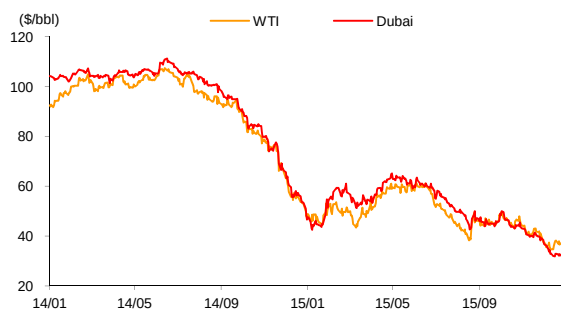
* 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

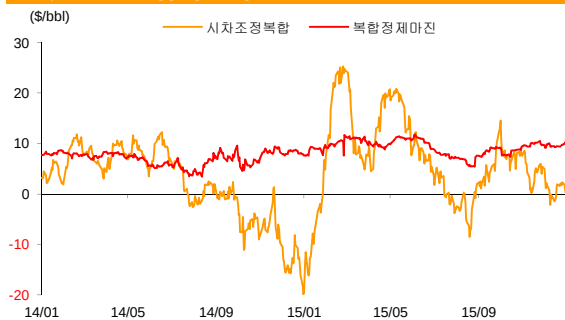
KOSPI/KOSPI화학



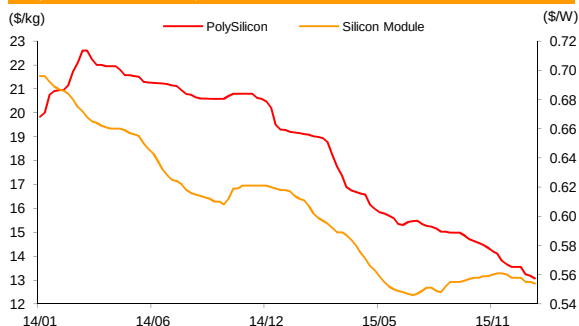
WTI/Dubai



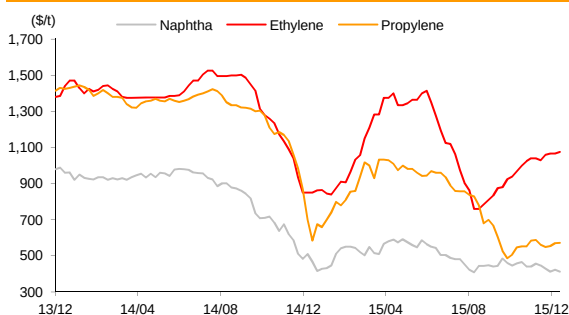
Complex & 1M lagging margin



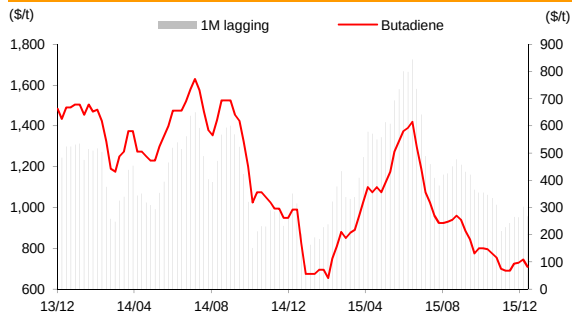
Polysilicon & Module prices



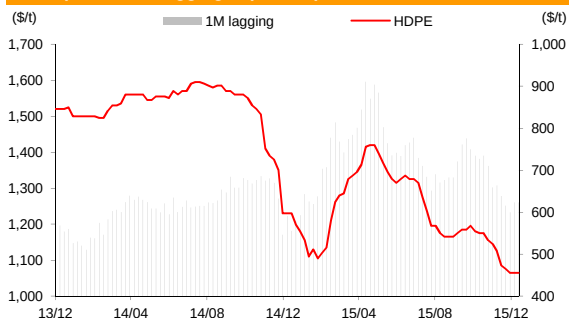
Naphtha/Ethylene/Propylene prices



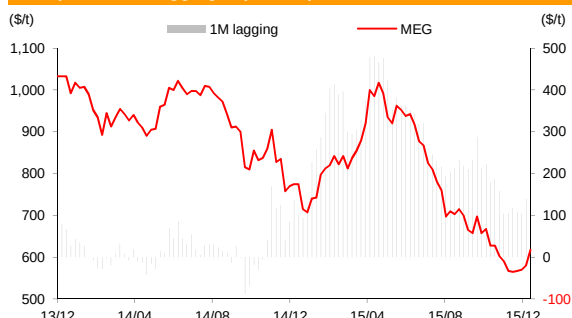
Butadiene price & 1M lagging naphtha spread



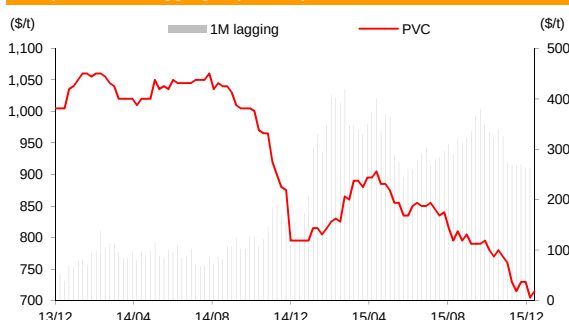
HDPE price & 1M lagging naphtha spread



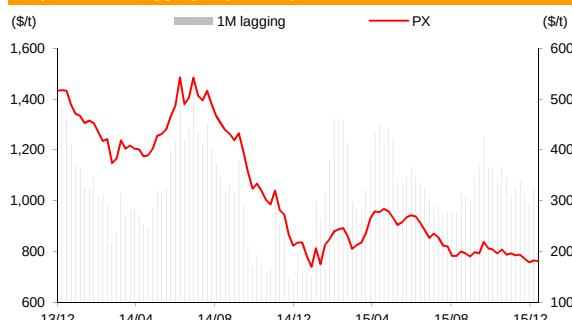
MEG price & 1M lagging naphtha spread



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: 조선비즈)
제목	롯데케미칼, 자회사 타이탄케미칼 IPO 진행
결론	롯데케미칼 현금유입 이슈, 다만 삼성화학계열 인수대금 사용 가능성
세부	1) Bloomberg 통신 보도, 익명이 고위 관계자 "올 해 2분기 전 IPO 추진" 2) "말레이시아 시장 내에서 롯데 타이탄 주식 거래되도록 할 것." 3) 자금조달규모는 약 \$5억(6천억원) 수준이 될 것으로 추정됨 4) 최근 2년간 \$5억 넘는 말레이시아 IPO는 한 건 밖에 없었음 5) 롯데케미칼 현금유입 이슈, 다만 삼성화학계열 인수대금 사용 가능성

WTI Comment	(출처: 연합뉴스)
제목	공급과잉 우려로 유가 하락
상승	미국 원유재고 509만bbl 감소, 예측치 30만bbl 증대를 대폭 하회
요인	
하락	미국 휘발유 재고 1,058만bbl 급증, 1993년 5월 이후 최대폭
요인	OPEC의 이란대표, 이란-사우디 대립으로 감산논의 불가능해질 것
	중국 12월 서비스업 활동 17개월 만에 최저

Issue 1	(출처: 더벨)
제목	SKI노베이션, TAC필름 사업 매각 추진
결론	1회성 비용 발생있겠지만 적자사업부 정리 및 현금확보는 긍정적 소식
세부	1) 비핵심자산 매각의 일환, 일본 코니카미놀타/중국 럭키필름과 협상 중 2) 2월 중순 경 매각 마무리 예상, "일본업체 관심 중 중국업체 비딩 가입" 3) 총복 증평에 약 1천억원 설비투자, 다만 일본업체에 밀려 적자 시고 4) 지난 해 페루 가스수송 법인, 타이오이올 지분, 인천 유류부지 매각했었음 5) 1회성 비용 발생있겠지만 적자사업부 정리 및 현금확보는 긍정적 소식

Issue 2	(출처: Platts)
제목	Formosa, 미국 1월 PE 가격 인상 결정 연기하기로
결론	PE spread 역사적 고점과 유사한 상황, 하락 가능성 높음
세부	1) 1월 가격 C5/lbs(약 \$110/t) 인상 결정 연기, 10월 이후 4개월 째임 2) 일부에서는 인하결정 나올 수 있다고 판단, 가격경쟁을 위해서임 3) 여전히 미국수요 좋고 재고도 많지 않지만, 유가하락이 압박 요인임 4) 원가하락이 크기 때문에 가격조정이 있어도 spread에는 부담이 없음 5) PE spread 역사적 고점과 유사한 상황, 하락 가능성 높음

Issue 3	(출처: PVinsights)
제목	[주간가격] 태양광 제품가격, 폴리하락/모듈보합/셀상승 기초 유지 중
결론	소재악화/발전강세의 스킵은 당분간 이어질 것으로 판단함
세부	1) 폴리 \$13.07/kg(WoW -0.83%), 모듈 \$0.554/W(WoW -0.18%) 2) 폴리: 중국재고물량 덩핑 지속 중, 위안화 절하도 압박 요인임 3) 모듈: 위안화 절하로 소폭 하락, 중국/일본 수요는 여전히 강세임 4) 셀: 1월 물량확보 위해 수요강세, 다만 1월 가격 피크설 많음 5) 소재악화/발전강세의 스킵은 당분간 이어질 것으로 판단함

Issue 4	
제목	
결론	
세부	1) 2) 3) 4) 5)

Issue 5	
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	2013avg.	2014avg.	2015acc.
F/X	USD/EUR	0.928	0.930	0.915	0.919	0.887	0.905	0.841	0.921	0.753	0.754	0.901
	Change, %		(0.3)	1.4	0.9	4.6	2.6	10.3	0.7	(3.9)	13.7	2.9
	USD/JPY	118.5	119.1	120.5	123.1	120.2	122.6	118.4	120.6	97.7	105.9	121.1
	Change, %		(0.5)	(1.7)	(3.8)	(1.5)	(3.3)	0.1	(1.7)	21.5	13.8	(2.1)
	USD/KRW	1,197.2	1,188.2	1,172.7	1,156.5	1,166.2	1,126.4	1,098.7	1,172.6	1,094.6	1,053.0	1,131.2
	Change, %		0.8	2.1	3.5	2.7	6.3	9.0	2.1	50.3	3.3	5.8
Agriculture	Corn	353.3	353.0	359.0	376.3	398.3	418.5	405.0	358.8	579.2	415.6	376.8
	Change, %		0.1	(1.6)	(6.1)	(11.3)	(15.6)	(12.8)	(1.5)	(39.6)	(5.9)	(6.3)
	Soybean	875.8	867.8	875.5	906.0	888.0	1,033.8	1,051.0	871.3	1,407.0	1,245.5	945.4
	Change, %		0.9	0.0	(3.3)	(1.4)	(15.3)	(16.7)	0.5	(7.5)	(22.3)	(7.4)
	Wheat	462.8	461.3	469.8	471.3	526.3	588.5	591.8	470.0	684.3	588.0	508.1
	Change, %		0.3	(1.5)	(1.8)	(12.1)	(21.4)	(21.8)	(1.5)	(22.2)	(2.6)	(8.9)
	Rice	11.6	11.7	11.5	11.2	13.4	10.6	11.4	11.6	15.5	14.0	11.1
	Change, %		(0.8)	0.3	3.5	(13.4)	9.6	1.9	0.1	4.4	(25.9)	4.7
	Oats	212.0	210.3	218.3	260.5	219.0	252.5	304.5	217.3	367.5	373.1	250.2
	Change, %		0.8	(2.9)	(18.6)	(3.2)	(16.0)	(30.4)	(2.4)	1.9	(14.3)	(15.3)
MYR/mt	Palm Oil	2,268.0	2,275.0	2,292.0	2,189.0	2,320.0	2,228.0	2,309.0	2,398.0	2,405.0	2,415.1	2,190.3
	Change, %		(0.3)	(1.0)	3.6	(2.2)	1.8	(1.8)	(5.4)	13.3	(12.8)	3.5
	Cocoa	2,981.0	3,059.0	3,229.0	3,369.0	3,092.0	3,285.0	2,902.0	3,211.0	2,403.9	3,006.8	3,091.6
	Change, %		(2.5)	(7.7)	(11.5)	(3.6)	(9.3)	2.7	(7.2)	21.2	7.4	(3.6)
	Cotton	62.0	62.7	64.0	63.2	61.1	66.4	60.2	63.3	83.3	76.4	63.3
	Change, %		(1.1)	(3.1)	(1.9)	1.4	(6.7)	3.0	(2.0)	12.6	(28.8)	(2.0)
	Sugar	14.4	14.6	15.2	15.5	13.6	12.5	14.9	15.2	17.5	16.3	13.1
	Change, %		(1.0)	(4.8)	(6.8)	5.8	15.5	(3.0)	(5.4)	(15.9)	(11.5)	9.7
	Coffee	120.0	123.0	123.7	124.0	128.1	123.3	174.9	126.7	126.0	177.1	132.6
	Change, %		(2.5)	(3.0)	(3.3)	(6.4)	(2.7)	(31.4)	(5.3)	(23.0)	50.5	(9.6)
Energy	WTI	34.0	36.0	36.6	40.0	48.5	52.5	47.9	37.0	98.0	92.9	48.8
	Change, %		(5.6)	(7.2)	(15.0)	(30.0)	(35.3)	(29.1)	(8.3)	7.2	(45.9)	(30.4)
	Brent	34.2	36.4	36.5	43.0	51.9	56.5	51.1	37.3	108.7	99.5	53.7
	Change, %		(6.0)	(6.1)	(20.4)	(34.1)	(39.5)	(33.0)	(8.2)	(0.3)	(48.3)	(36.2)
	Natural Gas	2.3	2.3	2.2	2.2	2.5	2.8	2.9	2.3	3.7	4.3	2.6
	Change, %		(2.5)	2.4	3.7	(8.2)	(17.7)	(22.8)	(3.0)	26.2	(31.7)	(13.8)
	Ethanol	1.3	1.4	1.4	1.5	1.6	1.6	1.5	1.4	2.3	2.1	1.5
	Change, %		(1.5)	(3.3)	(11.5)	(16.6)	(18.6)	(10.8)	(4.6)	(12.7)	(14.9)	(11.6)
	RBOB Gasoline	116.2	125.7	123.0	127.0	143.6	192.4	135.4	126.7	285.0	262.6	163.6
	Change, %		(7.6)	(5.5)	(8.5)	(19.1)	(39.6)	(14.2)	(8.3)	(0.9)	(48.5)	(29.0)
	Coal	43.6	43.3	43.3	43.0	42.1	40.8	47.2	43.3	56.1	57.5	45.2
	Change, %		0.7	0.7	1.5	3.8	6.9	(7.5)	0.7	(1.0)	(15.5)	(3.5)
Metal	Gold	1,093.7	1,077.7	1,061.5	1,086.8	1,147.2	1,170.4	1,218.5	1,061.4	1,410.4	1,266.5	1,160.6
	Change, %		1.5	3.0	0.6	(4.7)	(6.6)	(10.2)	3.0	(28.0)	(1.3)	(5.8)
	Silver	14.0	14.0	13.9	14.6	15.9	15.8	16.5	13.8	23.8	19.1	15.7
	Change, %		0.1	0.8	(3.8)	(11.9)	(11.1)	(15.3)	1.4	(35.8)	(18.9)	(10.9)
	Platinum	877.0	889.5	871.5	880.5	936.1	1,063.8	1,221.5	891.1	1,485.7	1,384.6	1,055.7
	Change, %		(1.4)	0.6	(0.4)	(6.3)	(17.6)	(28.2)	(1.6)	(11.2)	(11.5)	(16.9)
	Palladium	509.0	535.6	544.5	567.3	706.8	683.1	802.9	563.0	725.9	803.4	691.9
	Change, %		(5.0)	(6.5)	(10.3)	(28.0)	(25.5)	(36.6)	(9.6)	1.7	11.4	(26.4)
	Copper	4,620.0	4,645.0	4,735.0	4,612.0	5,185.0	5,590.0	6,145.0	4,705.0	7,352.6	6,828.1	5,503.1
	Change, %		(0.5)	(2.4)	0.2	(10.9)	(17.4)	(24.8)	(1.8)	(7.2)	(14.4)	(16.0)
	Uranium	35.0	35.0	34.4	36.1	37.0	36.3	35.2	34.4	38.5	33.5	36.9
	Change, %		0.0	1.7	(3.0)	(5.4)	(3.6)	(0.6)	1.7	(20.9)	2.5	(5.0)
	HR Coil	398.0	395.0	391.0	368.0	419.0	466.0	605.0	391.0	630.4	653.2	461.5
	Change, %		0.8	1.8	8.2	(5.0)	(14.6)	(34.2)	1.8	3.1	(10.4)	(13.8)
	Scrap	250.0	250.0	250.0	161.0	245.0	270.0	355.0	250.0	396.9	401.3	252.9
	Change, %		0.0	0.0	55.3	2.0	(7.4)	(29.6)	0.0	(1.2)	(16.5)	(1.2)
	Zinc	1,546.0	1,573.0	1,632.0	1,552.0	1,657.0	2,014.0	2,175.0	1,609.0	1,940.3	2,165.0	1,941.9
	Change, %		(1.7)	(5.3)	(0.4)	(6.7)	(23.2)	(28.9)	(3.9)	(1.2)	6.0	(20.4)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		01/06	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	WTI	34.0	36.0	36.6	37.7	49.4	52.7	47.9	53.2	93.1	48.8	35.9
	Change, %		(5.6)	(7.2)	(9.8)	(31.3)	(35.6)	(29.1)	(36.2)	(63.5)	(30.4)	(5.5)
	Dubai	30.8	31.7	32.7	38.4	48.4	58.2	48.1	53.6	96.7	50.8	31.8
	Change, %		(2.8)	(6.0)	(19.8)	(36.5)	(47.1)	(36.0)	(42.6)	(68.2)	(39.4)	(3.2)
Crude Oil	Gasoline(휘발유)	54.9	56.3	54.7	55.9	67.4	80.4	58.6	64.8	110.9	69.5	55.4
Product	Change, %		(2.6)	0.3	(1.9)	(18.6)	(31.7)	(6.4)	(15.3)	(50.6)	(21.1)	(1.0)
	Kerosene(등유)	42.3	42.8	44.9	52.6	62.1	69.0	65.0	71.2	112.6	64.7	43.4
	Change, %		(1.3)	(5.8)	(19.6)	(31.9)	(38.7)	(34.9)	(40.6)	(62.4)	(34.7)	(2.6)
	Diesel(경유)	41.3	41.8	43.9	52.7	62.8	69.1	64.8	70.2	112.8	64.8	42.4
	Change, %		(1.2)	(5.9)	(21.6)	(34.2)	(40.2)	(36.2)	(41.1)	(63.4)	(36.2)	(2.6)
	Bunker-C	25.0	25.7	25.7	32.2	39.2	51.2	42.3	48.8	86.5	45.3	25.6
	Change, %		(2.8)	(2.6)	(22.3)	(36.3)	(51.2)	(40.8)	(48.7)	(71.1)	(44.7)	(2.5)
	Naphtha	44.0	45.2	44.1	47.4	50.2	55.9	44.2	48.0	94.3	52.6	44.3
	Change, %		(2.7)	(0.2)	(7.1)	(12.3)	(21.3)	(0.3)	(8.4)	(53.3)	(16.3)	(0.6)
Dubai	Gasoline(휘발유)	24.1	24.7	21.9	17.6	18.9	22.2	10.5	11.2	14.2	18.7	23.6
Spread	Change		(0.6)	2.2	6.5	5.2	1.9	13.6	12.9	9.9	5.4	0.5
	Kerosene(등유)	11.5	11.2	12.1	14.3	13.7	10.9	16.9	17.6	15.9	14.0	11.6
	Change		0.4	(0.6)	(2.8)	(2.2)	0.7	(5.4)	(6.0)	(4.4)	(2.4)	(0.1)
	Diesel(경유)	10.6	10.2	11.1	14.3	14.3	10.9	16.7	16.6	16.0	14.0	10.6
	Change		0.4	(0.6)	(3.8)	(3.8)	(0.3)	(6.1)	(6.0)	(5.5)	(3.4)	(0.1)
	Bunker-C	(5.8)	(5.9)	(7.1)	(6.2)	(9.2)	(7.0)	(5.8)	(4.8)	(10.3)	(5.5)	(6.1)
	Change		0.2	1.3	0.4	3.4	1.2	0.1	(0.9)	4.5	(0.2)	0.4
	Naphtha	13.3	13.6	11.4	9.1	1.8	(2.3)	(3.9)	(5.6)	(2.4)	1.8	12.5
	Change		(0.3)	1.9	4.2	11.5	15.5	17.2	18.8	15.7	11.4	0.8
Refining	Simple(단순)	3.8	3.7	3.0	3.6	1.8	1.6	2.9	3.3	(0.1)	3.3	3.6
Margin	Change		0.1	0.8	0.2	2.1	2.3	0.9	0.6	3.9	0.5	0.3
	Complex(복합)	10.3	10.3	9.5	9.6	8.7	8.2	7.8	8.0	7.1	9.3	10.1
	Change		0.0	0.8	0.7	1.6	2.1	2.5	2.3	3.2	1.0	0.2
	Complex(lagging)	0.1	0.5	2.1	5.0	10.2	5.3	(19.8)	(14.3)	2.2	6.5	1.2
	Change		(0.4)	(2.0)	(4.9)	(10.1)	(5.1)	20.0	14.4	(2.1)	(6.4)	(1.1)

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			01/06	01/05	01/04	01/01	12/31	12/30	12/29	12/28	12/25	12/24
Spot Price	Naphtha	CFR Japan	409.9	422.9	416.5	410.5	410.5	416.3	412.3	416.5	423.0	423.0
	Ethylene	CFR SE Asia	1,085.0	1,085.0	1,085.0	1,085.0	1,085.0	1,085.0	1,085.0	1,085.0	1,085.0	1,085.0
	Propylene	FOB Korea	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0
	Butadiene	FOB Korea	710.0	710.0	700.0	700.0	700.0	700.0	700.0	705.0	710.0	710.0
	HDPE	CFR FE Asia	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,055.0	1,055.0	1,055.0
	LDPE	CFR FE Asia	1,090.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,090.0	1,070.0	1,070.0	1,070.0
	LLDPE	CFR FE Asia	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,040.0	1,040.0	1,040.0
	MEG	CFR China	591.0	583.0	584.0	616.0	616.0	619.0	615.0	613.0	585.0	585.0
	PP	CFR FE Asia	815.0	815.0	815.0	815.0	815.0	815.0	815.0	815.0	815.0	815.0
	PX	CFR China	742.7	744.7	743.3	745.5	745.5	747.0	740.3	742.5	747.8	747.8
	PTA	CFR China	573.0	573.0	571.0	571.0	571.0	571.0	569.0	572.0	572.0	572.0
	Benzene	FOB Korea	588.0	590.0	595.0	596.0	596.0	590.0	582.0	580.0	577.5	577.5
	Toluene	FOB Korea	608.0	607.0	614.0	609.0	609.0	610.5	601.0	598.0	603.0	603.0
	Xylene	FOB Korea	627.0	637.0	637.0	637.0	637.0	643.0	644.0	644.0	644.0	644.0
	SM	FOB Korea	931.0	914.0	908.0	900.0	900.0	900.0	895.0	895.0	895.0	891.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	Naphtha	CFR Japan	413.5	423.5	446.5	445.0	445.5	467.0	413.5	865.9	493.0	413.5
	Change, %			(2.4)	(7.4)	(7.1)	(7.2)	(11.5)	0.0	(52.2)	(16.1)	0.0
	Ethylene	CFR SE Asia	1,090.0	1,100.0	1,075.0	875.0	815.0	995.0	1,090.0	1,401.1	1,103.7	1,090.0
	Change, %			(0.9)	1.4	24.6	33.7	9.5	0.0	(22.2)	(1.2)	0.0
	Propylene	CFR SE Asia	650.0	650.0	615.0	455.0	660.0	675.0	650.0	1,254.2	770.0	592.5
	Change, %			0.0	5.7	42.9	(1.5)	(3.7)	0.0	(48.2)	(15.6)	9.7
	Butadiene	CFR SE Asia	720.0	695.0	640.0	795.0	890.0	940.0	720.0	1,281.7	877.5	720.0
	Change, %			3.6	12.5	(9.4)	(19.1)	(23.4)	0.0	(43.8)	(17.9)	0.0
	Benzene	CFR SE Asia	580.0	562.5	617.5	577.5	590.0	700.0	580.0	1,243.1	690.0	580.0
	Change, %			3.1	(6.1)	0.4	(1.7)	(17.1)	0.0	(53.3)	(15.9)	0.0
	Toluene	CFR SE Asia	630.0	630.0	655.0	655.0	600.0	650.0	630.0	1,082.5	700.8	630.0
	Change, %			0.0	(3.8)	(3.8)	5.0	(3.1)	0.0	(41.8)	(10.1)	0.0
	Xylene	CFR SE Asia	625.0	652.5	675.0	680.0	650.0	615.0	625.0	1,055.7	699.3	625.0
	Change, %			(4.2)	(7.4)	(8.1)	(3.8)	1.6	0.0	(40.8)	(10.6)	0.0
Spread	Ethylene	-Naphtha	676.5	676.5	628.5	430.0	369.5	528.0	676.5	535.2	610.6	676.5
	Change, %			0.0	7.6	57.3	83.1	28.1	0.0	26.4	10.8	0.0
	Propylene	-Naphtha	236.5	226.5	168.5	10.0	214.5	208.0	236.5	388.3	277.0	179.0
	Change, %			4.4	40.4	2,265.0	10.3	13.7	0.0	(39.1)	(14.6)	32.1
	Butadiene	-Naphtha	306.5	271.5	193.5	350.0	444.5	473.0	306.5	415.9	384.5	306.5
	Change, %			12.9	58.4	(12.4)	(31.0)	(35.2)	0.0	(26.3)	(20.3)	0.0
	Benzene	-Naphtha	166.5	139.0	171.0	132.5	144.5	233.0	166.5	377.3	197.0	166.5
	Change, %			19.8	(2.6)	25.7	15.2	(28.5)	0.0	(55.9)	(15.5)	0.0
	Toluene	-Naphtha	216.5	206.5	208.5	210.0	154.5	183.0	216.5	216.6	207.8	216.5
	Change, %			4.8	3.8	3.1	40.1	18.3	0.0	(0.1)	4.2	0.0
	Xylene	-Naphtha	211.5	229.0	228.5	235.0	204.5	148.0	211.5	189.9	206.3	211.5
	Change, %			(7.6)	(7.4)	(10.0)	3.4	42.9	0.0	11.4	2.5	0.0

자료 : Cischem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차임

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	HDPE	CFR SE Asia	1,065.0	1,065.0	1,085.0	1,185.0	1,165.0	1,230.0	1,065.0	1,524.9	1,230.1	1,065.0
	Change, %			0.0	(1.8)	(10.1)	(8.6)	(13.4)	0.0	(30.2)	(13.4)	0.0
	MEG	CFR SE Asia	617.5	580.0	565.0	657.5	702.5	775.0	617.5	934.1	780.8	617.5
	Change, %			6.5	9.3	(6.1)	(12.1)	(20.3)	0.0	(33.9)	(20.9)	0.0
	PVC	CFR SE Asia	715.0	705.0	715.0	790.0	810.0	795.0	715.0	1,013.9	820.8	715.0
	Change, %			1.4	0.0	(9.5)	(11.7)	(10.1)	0.0	(29.5)	(12.9)	0.0
	PP	CFR SE Asia	835.0	825.0	885.0	1,005.0	985.0	1,140.0	835.0	1,503.0	1,109.8	835.0
	Change, %			1.2	(5.6)	(16.9)	(15.2)	(26.8)	0.0	(44.4)	(24.8)	0.0
	2-EH	CFR Korea	680.0	680.0	685.0	790.0	900.0	1,130.0	680.0	1,397.1	930.1	680.0
	Change, %			0.0	(0.7)	(13.9)	(24.4)	(39.8)	0.0	(51.3)	(26.9)	0.0
	ABS	CFR SE Asia	1,130.0	1,100.0	1,117.5	1,215.0	1,275.0	1,585.0	1,130.0	1,897.7	1,431.1	1,130.0
	Change, %			2.7	1.1	(7.0)	(11.4)	(28.7)	0.0	(40.5)	(21.0)	0.0
	SBR	CFR SE Asia	1,150.0	1,085.0	1,105.0	1,230.0	1,200.0	1,495.0	1,150.0		1,332.1	1,150.0
	Change, %			6.0	4.1	(6.5)	(4.2)	(23.1)	0.0		(13.7)	0.0
	SM	CFR SE Asia	910.0	910.0	917.5	920.0	980.0	975.0	910.0	1,547.1	1,100.7	910.0
	Change, %			0.0	(0.8)	(1.1)	(7.1)	(6.7)	0.0	(41.2)	(17.3)	0.0
	Caustic	FOB NEA	285.0	285.0	290.0	315.0	317.5	275.0	285.0	310.0	296.8	285.0
	Change, %			0.0	(1.7)	(9.5)	(10.2)	3.6	0.0	(8.1)	(4.0)	0.0
	PX	CFR SE Asia	762.5	765.0	787.5	792.5	800.0	835.0	762.5	1,228.5	842.9	762.5
	Change, %			(0.3)	(3.2)	(3.8)	(4.7)	(8.7)	0.0	(37.9)	(9.5)	0.0
	PO	CFR China	1,257.5	1,307.5	1,445.0	1,522.5	1,570.0	1,792.5	1,257.5	2,179.2	1,683.4	1,257.5
	Change, %			(3.8)	(13.0)	(17.4)	(19.9)	(29.8)	0.0	(42.3)	(25.3)	0.0
	Caprolactam	CFR SE Asia	1,260.0	1,285.0	1,300.0	1,350.0	1,340.0	1,920.0	1,260.0	2,233.4	1,581.5	1,260.0
	Change, %			(1.9)	(3.1)	(6.7)	(6.0)	(34.4)	0.0	(43.6)	(20.3)	0.0
	PTA	CFR SE Asia	585.0	577.5	620.0	597.5	565.0	655.0	585.0	911.7	648.0	585.0
	Change, %			1.3	(5.6)	(2.1)	3.5	(10.7)	0.0	(35.8)	(9.7)	0.0
Spread	HDPE		651.5	641.5	638.5	740.0	719.5	763.0	651.5	659.0	737.1	651.5
	Change, %			1.6	2.0	(12.0)	(9.5)	(14.6)	0.0	(1.1)	(11.6)	0.0
	MEG		204.0	156.5	118.5	212.5	257.0	308.0	204.0	68.2	287.8	204.0
	Change, %			30.4	72.2	(4.0)	(20.6)	(33.8)	0.0	199.0	(29.1)	0.0
	PVC		301.5	281.5	268.5	345.0	364.5	328.0	301.5	148.0	327.8	301.5
	Change, %			7.1	12.3	(12.6)	(17.3)	(8.1)	0.0	103.7	(8.0)	0.0
	PP		421.5	401.5	438.5	560.0	539.5	673.0	421.5	637.1	616.8	421.5
	Change, %			5.0	(3.9)	(24.7)	(21.9)	(37.4)	0.0	(33.8)	(31.7)	0.0
	2-EH		266.5	256.5	238.5	345.0	454.5	663.0	266.5	531.3	437.0	266.5
	Change, %			3.9	11.7	(22.8)	(41.4)	(59.8)	0.0	(49.8)	(39.0)	0.0
	ABS		716.5	676.5	671.0	770.0	829.5	1,118.0	716.5	1,031.9	938.1	716.5
	Change, %			5.9	6.8	(6.9)	(13.6)	(35.9)	0.0	(30.6)	(23.6)	0.0
	SBR	BD spread	430.0	390.0	465.0	435.0	310.0	555.0	430.0		454.7	430.0
	Change, %			10.3	(7.5)	(1.1)	38.7	(22.5)	0.0		(5.4)	0.0
	SM		496.5	486.5	471.0	475.0	534.5	508.0	496.5	681.2	607.7	496.5
	Change, %			2.1	5.4	4.5	(7.1)	(2.3)	0.0	(27.1)	(18.3)	0.0
	Caustic											
	Change, %											
	PX		349.0	341.5	341.0	347.5	354.5	368.0	349.0	362.6	349.9	349.0
	Change, %			2.2	2.3	0.4	(1.6)	(5.2)	0.0	(3.8)	(0.2)	0.0
	PO	propylene spread	607.5	657.5	830.0	1,067.5	910.0	1,117.5	607.5	925.0	913.4	665.0
	Change, %			(7.6)	(26.8)	(43.1)	(33.2)	(45.6)	0.0	(34.3)	(33.5)	(8.6)
	Caprolactam	benzene spread	680.0	722.5	682.5	772.5	750.0	1,220.0	680.0	990.3	891.6	680.0
	Change, %			(5.9)	(0.4)	(12.0)	(9.3)	(44.3)	0.0	(31.3)	(23.7)	0.0
	PTA	px spread	51.3	42.0	68.8	42.8	5.0	70.5	51.3	51.8	58.0	51.3
	Change, %			22.0	(25.5)	19.9	925.0	(27.3)	0.0	(1.0)	(11.7)	0.0

자료 : Ciscem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	01/06	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											15	16E	15	16E	15	16E
Petrochemical																
Dow Chemical	USD	48.5	(2.2)	(6.2)	(9.1)	2.9	(4.2)	11.5	(5.9)	56,146	14.8	14.0	2.6	2.4	8.0	8.0
Du Pont	USD	63.4	(1.4)	(5.9)	(6.5)	14.8	5.6	(5.9)	(4.8)	55,547	23.0	19.8	5.4	5.3	12.1	11.8
Eastman	USD	65.8	(1.9)	(2.9)	(10.2)	(6.0)	(16.1)	(10.5)	(2.5)	9,780	9.1	8.7	2.3	2.0	7.3	7.1
BASF	EUR	65.8	(3.0)	(7.0)	(10.6)	(5.6)	(15.6)	(1.9)	(7.0)	64,974	13.1	12.6	2.1	2.0	7.0	6.9
Akzo Nobel	EUR	59.0	(1.4)	(5.3)	(7.2)	0.3	(8.5)	4.2	(4.4)	15,707	14.9	14.1	2.5	2.2	8.0	7.6
Arkema	EUR	59.6	(2.9)	(8.5)	(10.0)	(3.8)	(6.5)	14.8	(7.8)	4,769	13.6	11.5	1.2	1.2	5.8	5.5
Lanxess	EUR	39.8	(2.3)	(6.8)	(11.7)	(9.2)	(25.2)	12.9	(6.8)	3,915	17.8	13.5	1.6	1.4	5.7	5.1
Sumitomo Chemical	JPY	629	0.0	(10.3)	(12.9)	(6.8)	(13.4)	37.3	(10.3)	8,779	11.9	10.3	1.2	1.1	7.3	7.0
Mitsubishi Chemical	JPY	731	(1.9)	(5.6)	(7.9)	11.0	(5.1)	28.4	(5.6)	9,283	15.1	11.0	1.1	1.0	6.4	6.2
Shin-Etsu Chemical	JPY	6,413	(0.9)	(3.1)	(5.7)	(0.8)	(13.9)	(16.1)	(3.1)	23,363	18.7	17.4	1.3	1.3	6.5	6.1
Asahi Kasei	JPY	831	(2.1)	1.0	0.9	(5.0)	(14.5)	(21.9)	1.0	9,832	12.3	11.1	1.0	1.0	5.7	5.5
JSR	JPY	1,817	(2.0)	(4.3)	(4.3)	0.1	(15.7)	(8.6)	(4.3)	3,463	14.0	12.7	1.1	1.1	5.8	5.3
Nitto Denko	JPY	8,253	(3.8)	(7.4)	(4.1)	3.7	(18.0)	26.4	(7.4)	12,090	15.1	14.3	2.0	1.9	7.1	6.8
SABIC	SAR	70.5	(3.2)	(7.8)	(19.4)	(11.0)	(26.4)	(8.5)	(7.9)	56,331	11.1	10.5	1.3	1.3	6.0	5.8
Yansab	SAR	27.3	(6.5)	(14.7)	(38.4)	(40.2)	(49.8)	(34.3)	(15.7)	4,096	13.1	8.7	1.0	1.0	7.5	6.4
Formosa Plastics	TWD	73.0	0.1	(0.7)	(2.4)	1.4	1.1	5.8	(5.2)	13,986	15.8	15.9	1.5	1.5	23.0	22.7
Formosa Fiber	TWD	68.6	0.1	(2.7)	(2.6)	(2.7)	(6.0)	8.0	(7.3)	12,102	16.2	15.8	1.3	1.3	13.1	13.1
Nan Ya Plastics	TWD	57.5	0.0	(2.5)	(3.8)	(3.4)	(18.6)	(7.0)	(5.7)	13,725	12.5	13.1	1.4	1.3	12.7	12.8
Sinopec Shanghai	CNY	6.05	4.1	(8.9)	(7.5)	(5.2)	(23.9)	34.1	(6.6)	8,168	23.4	21.3	3.4	3.0	9.8	9.5
Sinopec Yizheng(Fiber)	CNY	7.40	3.5	(11.8)	(15.3)	(23.0)	(28.6)	29.8	(9.3)	14,138	#N/A	N/A	#N/A	N/A	47.2	24.7
Reliance	INR	1,032	2.7	2.8	6.9	14.9	1.6	23.5	1.7	50,011	12.5	11.1	1.3	1.2	9.8	8.3
Industries Qatar	QAR	106.0	1.1	(2.8)	(3.4)	(14.0)	(23.1)	(36.9)	(4.6)	17,611	12.9	12.7	1.9	1.9	51.6	53.3
PTT Chemical	THB	49.3	(0.5)	(1.5)	(3.4)	(12.8)	(27.6)	(7.1)	(1.5)	6,073	7.8	7.5	0.9	0.8	5.7	5.3
Petronas	MYR	7.5	0.5	3.6	11.1	21.0	17.2	49.7	3.2	13,552	22.0	19.4	2.5	2.4	11.2	9.8
LG화학	KRW	338,000	(0.4)	2.9	9.4	18.4	24.3	103.6	2.9	18,622	19.4	15.9	1.9	1.7	7.4	6.6
롯데케미칼	KRW	260,000	4.0	6.8	7.7	(5.1)	(7.0)	78.1	6.8	7,409	8.3	7.8	1.2	1.0	4.1	3.9
한화케미칼	KRW	28,000	5.9	2.9	6.9	30.8	46.2	153.4	2.9	3,770	19.0	12.3	1.0	0.9	10.9	9.1
금호석유	KRW	53,000	1.5	1.7	(8.6)	(13.8)	(26.7)	(34.6)	1.7	1,342	12.1	9.8	1.1	1.0	8.9	7.4
SKC	KRW	31,300	(1.1)	(7.4)	(9.5)	(18.4)	(16.2)	17.0	(7.4)	958	3.8	8.0	0.8	0.7	7.1	6.9
국도화학	KRW	58,000	2.5	(2.2)	(1.4)	(18.8)	(13.2)	45.5	(2.2)	280	6.1	6.9	0.8	0.7	4.1	3.8
효성	KRW	2,645	1.9	1.3	(4.5)	(9.4)	(10.2)	(1.1)	1.3	3,401	8.7	7.1	1.3	1.1	7.2	6.5
Average			(0.3)	(3.7)	(5.7)	(3.1)	(10.9)	15.8	(3.9)							
Refinery																
Valero	USD	70.7	(0.7)	(1.3)	(1.0)	10.5	8.1	48.2	(0.1)	34,023	8.1	9.3	1.6	1.4	4.2	4.8
Conoco Phillips	USD	45.4	(4.3)	(2.7)	(11.4)	(17.8)	(23.2)	(27.9)	(2.9)	55,991	#N/A	N/A	#N/A	N/A	8.7	7.4
Formosa Petrochemical	TWD	77.0	0.9	(0.8)	2.0	(3.8)	(2.5)	18.3	(2.3)	22,077	17.9	19.1	2.7	2.7	12.0	12.4
Tesoro	USD	106.4	0.1	2.0	(5.3)	3.2	16.2	48.1	0.9	12,806	7.4	11.4	2.4	2.1	4.6	5.9
Marathon Petroleum	USD	48.7	(3.7)	(6.8)	(12.4)	(2.6)	(11.0)	10.5	(6.0)	25,966	8.1	9.0	2.0	1.8	4.5	4.6
Devon Energy	USD	30.2	(8.0)	(2.5)	(25.5)	(30.9)	(46.7)	(47.5)	(5.6)	12,416	12.1	736.8	1.0	1.1	5.2	7.3
Hollyfrontier	USD	38.8	(5.6)	(2.5)	(19.0)	(22.7)	(14.1)	6.8	(2.7)	7,100	7.6	9.1	1.3	1.2	4.2	4.8
Phillips 66	USD	78.0	(3.7)	(4.9)	(13.5)	(5.5)	(4.3)	18.2	(4.6)	41,624	9.9	10.7	1.8	1.6	5.9	6.3
Murphy Oil	USD	20.1	(10.9)	(8.3)	(21.0)	(28.5)	(50.7)	(56.8)	(10.4)	3,461	#N/A	N/A	#N/A	N/A	4.0	4.6
JX Holdings	JPY	486.5	(3.6)	(4.3)	(5.7)	4.9	(5.4)	7.1	(4.3)	10,236	336.7	8.2	0.6	0.6	13.9	10.1
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	(15.0)	(0.6)	0.0	1,151	#N/A	N/A	#N/A	N/A	#N/A	N/A
Idemitsu	JPY	1,909.0	(3.0)	(1.5)	(9.0)	1.1	(20.4)	(3.0)	(1.5)	2,575	19.5	6.5	0.5	0.5	13.1	8.9
Tonengeneral	JPY	999.0	(2.5)	(2.3)	(16.9)	(18.5)	(12.9)	(0.3)	(2.3)	4,760	27.1	10.1	1.4	1.3	37.1	9.9
Nesteoil	EUR	27.3	0.0	(1.2)	4.0	24.7	25.2	37.1	(1.2)	0	11.7	11.7	2.3	2.1	7.9	7.4
Ashland	USD	101.0	(1.4)	(3.0)	(10.7)	(2.5)	(16.5)	(13.3)	(1.6)	6,387	14.7	13.5	2.2	2.3	8.0	7.8
Fuchs Petrolub	EUR	42.7	(1.1)	(2.0)	(1.9)	2.7	11.9	32.3	(2.0)	5,917	24.6	22.5	5.9	5.0	14.1	12.9
SK이노베이션	KRW	126,000	(0.8)	(3.1)	(2.7)	12.5	13.0	58.5	(3.1)	9,686	10.0	9.1	0.7	0.7	6.3	6.1
S-Oil	KRW	77,100	(1.9)	(2.9)	3.6	10.5	23.2	71.0	(2.9)	7,216	11.4	10.4	1.6	1.5	7.3	7.3
GS	KRW	47,600	(4.0)	(6.1)	(4.3)	(2.7)	(5.6)	24.1	(6.1)	3,677	8.1	6.7	0.7	0.6	7.4	6.5
Average			(2.9)	(2.8)	(7.9)	(3.4)	(6.9)	12.1	(3.1)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	01/06	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 15 16E	PBR 15 16E	EV/EBITDA 15 16E
E&P/Shale													
Exxon Mobil	USD	77	(0.8)	(0.8)	(1.8)	(0.5)	(6.1)	(13.7)	(0.6)	322,503	19.9 20.5	1.9 1.9	8.3 8.1
BP	GBP	343	(1.3)	(3.3)	(4.5)	(9.2)	(20.0)	(12.2)	(3.0)	92,302	14.0 14.6	0.9 0.9	5.2 4.7
Shell	EUR	1,498	(1.9)	(3.1)	(5.6)	(14.2)	(16.2)	(28.0)	(1.9)	141,046	12.5 11.3	0.8 0.8	4.4 4.1
Chevron	USD	86	(4.0)	(4.5)	(4.1)	(1.1)	(9.2)	(20.3)	(4.3)	161,987	24.9 23.0	1.1 1.1	6.5 6.0
Total	EUR	40	(1.0)	(4.3)	(8.5)	(10.4)	(7.3)	(0.4)	(3.6)	104,305	10.3 12.0	1.0 1.0	5.4 5.3
Sinopec	CNY	5	3.4	(1.4)	(2.6)	3.4	(33.2)	(30.0)	(1.2)	86,175	14.8 12.1	0.9 0.9	5.4 4.9
Petrochina	CNY	8	3.0	(1.2)	(3.1)	1.0	(36.1)	(28.9)	(0.5)	218,743	31.4 26.1	1.3 1.2	7.4 7.1
CNOOC	CNY	15	3.3	(6.8)	(9.7)	(7.4)	(25.8)	(32.0)	(6.1)	8,035	34.5 31.9	1.5 1.4	12.0 11.3
Gazprom	RUB	136	(0.4)	(0.1)	(1.3)	(1.4)	(4.9)	(2.1)	(0.1)	43,178	2.7 2.7	0.3 0.2	2.2 2.4
Rosneft	RUB	252	(0.3)	(0.3)	0.4	1.6	13.3	26.0	(0.3)	35,890	6.5 6.1	0.8 0.7	3.3 3.3
Anadarko	USD	44	(9.8)	(9.5)	(23.0)	(36.2)	(42.7)	(41.8)	(9.9)	22,241	#N/A N/A #N/A N/A	1.5 1.6	8.5 8.1
Petrobras	BRL	6	(4.2)	(4.5)	(14.9)	(21.9)	(44.3)	(23.2)	(4.5)	23,851	8.9 6.6	0.3 0.3	6.1 5.6
Lukoil	USD	2,378	(0.1)	1.4	(4.5)	6.3	(3.3)	1.4	1.4	27,052	5.8 5.2	0.3 0.3	N/A N/A
Kinder	USD	15	(5.2)	1.6	(12.2)	(53.5)	(60.6)	(63.8)	(1.0)	47,497	22.7 20.4	0.9 0.9	10.5 9.8
Statoil	NOK	118	(2.1)	(4.6)	(7.2)	(14.2)	(13.2)	(7.3)	(4.6)	41,942	18.2 15.7	1.1 1.1	2.7 2.6
BHP	AUD	17	(2.4)	(5.2)	(4.4)	(28.2)	(34.1)	(34.7)	(4.0)	60,760	28.6 18.5	1.0 1.1	6.4 5.5
PTT E&P	THB	54	0.0	(5.7)	(12.6)	(22.6)	(49.3)	(49.5)	(5.7)	5,917	9.7 10.1	0.5 0.5	1.7 1.7
Petronas gas	MYR	22	(0.7)	(3.2)	(5.7)	(3.2)	2.6	0.9	(3.2)	9,823	24.0 23.3	3.9 3.7	13.7 13.4
Chesapeake	USD	5	(6.6)	6.4	2.9	(47.9)	(55.1)	(74.0)	4.0	3,113	#N/A N/A #N/A N/A	1.2 1.4	6.7 9.4
Noble Energy	USD	32	(5.8)	(1.6)	(6.4)	(8.2)	(21.1)	(24.4)	(3.8)	13,564	340.8 #N/A N/A	1.1 1.2	8.9 7.8
Average		0	(1.8)	(2.5)	(6.4)	(13.4)	(23.3)	(22.9)	(2.6)				
PV													
WACKER	EUR	72.5	(4.0)	(6.5)	(7.5)	0.0	(22.5)	(16.2)	(6.5)	4,065	21.6 18.9	1.6 1.5	5.1 4.8
GCL-Poly	HKD	1.2	0.0	0.0	(20.6)	(29.3)	(25.7)	(35.9)	(0.9)	2,757	8.8 6.6	0.9 0.8	8.1 6.9
REC	NOK	107.5	0.0	0.0	0.0	0.0	1.4	5.4	0.0	519	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A
SunEdison	USD	5.5	(2.7)	8.7	51.4	(36.6)	(81.0)	(68.7)	8.3	1,745	#N/A N/A #N/A N/A	0.4 0.4	#N/A N/A 25.8
Canadian Solar	USD	27.3	(0.8)	(4.7)	10.9	40.5	5.6	22.4	(5.8)	1,527	11.2 10.4	1.8 1.5	9.3 6.9
JA Solar	USD	9.2	(3.3)	(3.8)	1.4	9.9	19.6	17.2	(5.1)	465	6.5 6.2	0.5 0.5	3.8 3.5
Trina Solar	USD	11.0	0.2	0.2	7.5	7.5	0.4	25.1	(0.2)	1,014	12.3 8.1	0.9 0.8	7.4 5.5
Solar City	USD	50.2	(0.5)	(1.2)	39.5	6.2	(3.0)	1.4	(1.6)	4,899	#N/A N/A #N/A N/A	5.4 5.9	#N/A N/A #N/A N/A
Yingli	USD	3.9	(6.5)	(18.7)	(41.5)	(16.1)	(63.9)	(82.3)	(14.8)	70	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A	9.4 9.1
First Solar	USD	69.5	(3.5)	3.8	16.2	42.2	57.3	70.1	5.3	7,016	15.5 16.6	1.3 1.2	7.6 9.9
한화솔라원	USD	21.9	0.0	(0.1)	11.9	20.9	42.9	108.2	(0.4)	#N/A N/A	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A
OCI	KRW	73,400	(0.3)	(2.1)	(9.8)	(12.2)	(33.0)	3.7	(2.1)	1,455	8.0 15.4	0.6 0.6	11.5 9.3
웅진에너지	KRW	1,720	(0.6)	(0.6)	(7.0)	6.8	1.5	23.7	(0.6)	106	N/A 0.6	0.6 11.5	9.3 8.7
신성솔라에너지	KRW	1,950	0.3	(3.5)	(1.0)	50.6	59.2	89.3	(3.5)	122	N/A 0.6	11.5 9.3	8.7 7.1
Average			(1.5)	(2.0)	3.7	6.5	(2.9)	11.7	(2.0)				
Gas Company													
Towngas China	HKD	4.3	(1.4)	(4.9)	(9.3)	(15.7)	(37.6)	(43.9)	(4.4)	1,478	9.0 8.1	0.8 0.7	11.0 9.4
Kulun	HKD	6.7	(0.3)	(3.0)	(2.8)	13.5	(8.7)	(11.1)	(2.8)	6,987	14.2 12.0	1.0 0.9	6.0 5.5
Beijing Enterprise	HKD	45.1	(0.6)	(4.2)	(4.0)	(5.7)	(19.5)	(25.5)	(3.9)	7,463	10.2 9.0	0.9 0.9	14.9 13.7
ENN Energy	HKD	38.8	(2.1)	(6.7)	(1.4)	(0.5)	(14.6)	(15.1)	(6.3)	5,411	13.9 12.0	2.5 2.1	9.2 8.1
China Resources Gas	HKD	21.0	(2.8)	(7.9)	(3.0)	3.7	(5.2)	7.8	(9.3)	6,024	15.6 13.4	2.5 2.2	9.6 8.4
China Gas Holdings	HKD	10.6	(0.9)	(6.9)	0.4	(7.4)	(11.7)	(11.7)	(5.5)	6,762	14.1 11.6	2.5 2.1	11.5 9.7
Shenzen Gas	HKD	13.9	(0.4)	(3.9)	4.8	18.8	14.1	20.9	(3.2)	3,400	12.8 12.1	1.3 1.2	9.9 9.7
Shann Xi	CNY	11.9	3.6	(6.7)	(3.9)	4.2	(25.4)	5.9	(5.2)	2,028	20.8 17.4	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A
Suntien	HKD	1.2	1.6	1.6	(2.4)	(12.1)	(17.9)	(31.1)	0.0	594	9.4 7.6	0.5 0.5	7.7 6.2
China Oil & Gas	HKD	0.5	0.0	0.0	(8.6)	9.3	(13.1)	(43.4)	0.0	398	11.5 8.3	0.8 0.7	6.4 5.3
Average			(0.3)	(4.3)	(3.0)	0.8	(14.0)	(14.7)	(4.1)				
EV													
LG화학	KRW	338,000	(0.4)	2.9	9.4	18.4	24.3	103.6	2.9	18,622	18.3 14.7	1.9 1.7	7.5 6.9
삼성SDI	KRW	114,500	(0.4)	0.4	(3.0)	5.0	2.7	3.2	0.4	6,546	26.1 11.9	0.7 0.7	12.0 11.0
Panasonic	JPY	1197.0	(1.5)	(3.5)	(12.1)	(4.9)	(26.3)	(13.4)	(3.5)	24,756	14.3 11.8	1.4 1.3	4.1 3.9
GS Yuasa	JPY	438.0	(1.1)	(3.1)	(6.0)	(11.0)	(8.9)	(13.4)	(3.1)	1,527	13.7 11.8	1.1 1.1	6.7 6.2
NEC	JPY	374.0	(0.8)	(2.9)	(7.9)	(3.1)	3.0	9.4	(2.9)	8,213	13.7 11.5	1.1 1.0	6.5 6.2
BYD Auto	CNY	60.4	1.8	(8.5)	(2.3)	0.7	19.1	49.8	(6.2)	19,264	65.2 53.3	5.2 4.6	20.7 17.3
Tesla Motors	USD	219.0	(2.0)	(8.0)	(4.9)	(9.3)	(21.7)	3.7	(8.7)	28,684	#N/A N/A 127.9	25.3 21.5	129.4 34.4
Kandi Technologies	USD	10.4	(2.2)	(3.7)	4.8	61.9	24.2	(14.4)	(4.8)	487	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A	#N/A N/A #N/A N/A
Average			(0.8)	(3.3)	(2.7)	7.2	2.0	16.1	(3.2)				

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임