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1. News Summary (3 page)

2016년 1월 12일

News		Conclusion
WTI comment	주요 IB의 전망 하향으로 유가급락	
Headline	Formosa, 1월 PE 가격 결국 인하하기로 결정	하락 결정에도 불구하고 여전히 PE spread는 고점을 유지하는 상황임
News 1.	OCI, 텍사스 태양광 발전소 Alamo 7을 2,714억원에 매각 결정	지속적인 현금확보는 긍정적, 다만 사용처에 대해서는 추후확인 필요
News 2.	S-Oil, 한국석유공사 부지에 1-2차 고도화/화학설비 건설 시작	S-Oil의 capex 진행 및 재무부담은 올 해부터 본격화될 수 있음
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	31.4	(5.3)	(14.6)	(11.8)	(32.7)	(31.8)
Dubai	$/bbl	28.1	(3.6)	(13.7)	(22.5)	(40.4)	(38.5)
Gasoline	$/bbl	51.1	(3.1)	(8.3)	(10.4)	(21.5)	(8.4)
Diesel	$/bbl	38.3	(3.7)	(11.5)	(22.4)	(35.8)	(38.2)
Complex margin	$/bbl	10.0	(0.3)	0.0	0.1	2.3	2.1
1M lagging	$/bbl	(1.7)	(1.3)	(3.5)	(3.3)	(10.4)	13.8
Petrochemical			%	%	%	%	%
Naphtha	$/t	361	(5.9)	(13.2)	(16.1)	(25.7)	(14.4)
Butadiene	$/t	730	0.0	4.3	6.6	(8.2)	(2.0)
HDPE	$/t	1,075	(1.4)	0.0	2.9	(7.3)	(6.9)
MEG	$/t	576	(1.0)	(1.4)	1.9	(16.8)	(19.0)
PX	$/t	710	(2.1)	(4.5)	(6.3)	(13.2)	(6.7)
SM	$/t	911	(1.7)	0.3	0.7	(0.2)	8.6
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.40	(3.1)	2.7	22.3	(17.3)	(29.0)
Natural rubber	$/t	1,060	1.9	(4.5)	(7.8)	(17.2)	(24.8)
Cotton	C/lbs	61.5	0.2	(1.8)	(3.0)	(0.3)	(4.7)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	01/11	$/t	1,095	0.5	0.5	24.4	15.3
Propylene	01/11	$/t	625	(3.8)	(3.8)	34.4	(7.4)
Benzene	01/11	$/t	583	0.4	(3.3)	(2.9)	(1.3)
Toluene	01/11	$/t	630	0.0	0.0	(5.3)	11.5
Xylene	01/11	$/t	640	2.4	(5.2)	(5.9)	8.5
PP	01/11	$/t	830	(0.6)	(5.1)	(16.6)	(26.5)
PVC	01/11	$/t	715	0.0	(2.1)	(9.5)	(10.1)
ABS	01/11	$/t	1,130	0.0	4.9	(5.8)	(25.9)
SBR	01/11	$/t	1,200	4.3	9.6	(4.4)	(18.6)
SM	01/11	$/t	955	4.9	1.1	1.3	8.8
BPA	01/11	$/t	1,205	(4.2)	(12.2)	(24.1)	(34.1)
Caustic	01/11	$/t	285	0.0	0.9	(9.5)	9.6
2-EH	01/11	$/t	685	0.7	3.0	(13.3)	(29.4)
Caprolactam	01/11	$/t	1,250	(0.8)	(2.7)	(7.4)	(30.4)
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)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	73.7	(1.3)	(4.9)	(0.9)	(7.0)	(20.0)
Shell	EUR	1,354	(1.5)	(10.7)	(6.8)	(25.2)	(35.7)
Petrochina	CNY	7.70	(3.6)	(5.3)	(7.2)	(9.6)	(36.2)
Gazprom	RUB	131.4	(3.4)	(2.6)	(1.8)	(8.6)	(7.3)
Petrobras	BRL	6.1	(2.9)	(11.4)	(16.0)	(30.8)	(35.2)
Refinery							
Phillips66	USD	76.2	1.3	(4.9)	(8.0)	(8.8)	13.2
Valero	USD	69.1	1.2	(1.2)	2.3	7.6	42.0
JX	JPY	467.8	0.0	(8.8)	(8.3)	(5.2)	5.2
Neste Oil	EUR	27.0	1.8	(0.3)	4.2	25.5	32.8

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	63.9	0.5	(6.1)	(6.8)	(12.5)	(7.3)
Dow Chemical	USD	45.4	(1.9)	(9.1)	(14.9)	(3.6)	2.2
SABIC	SAR	70.6	2.5	(6.1)	(19.3)	(20.8)	(10.0)
Formosa Pla.	TWD	71.7	0.4	(1.0)	(0.4)	(5.2)	(0.1)
Shin-Etsu	JPY	6,183	0.0	(4.6)	(9.2)	(9.4)	(20.3)
Renewable							
Wacker	EUR	67.9	(2.0)	(10.2)	(8.0)	(10.6)	(20.4)
Yingli	USD	3.60	(3.5)	(19.3)	(36.3)	(30.1)	(82.4)
Tesla	USD	207.9	(1.5)	(7.0)	(4.2)	(5.8)	0.6
BYD	CNY	57.9	(2.6)	(1.5)	(6.0)	(5.0)	50.6

4. Coverage Summary

	01/11	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,895	(1.2)	(1.2)	(2.8)	(6.2)	(6.7)	(1.6)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,242	(1.4)	(1.4)	0.9	3.7	4.6	44.5				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	322,500	(2.3)	(5.6)	(1.2)	13.6	24.5	80.7	매수	380,000	17.8	14.37	1.76
롯데케미칼	258,000	(2.5)	5.3	12.2	(2.6)	(3.9)	73.7	매수	290,000	12.4	11.47	1.07
한화케미칼	26,300	(3.0)	(1.5)	(1.1)	21.5	32.2	128.7	매수	30,000	14.1	9.30	0.75
금호석유화학	51,800	(1.9)	(1.0)	(6.8)	(21.4)	(26.8)	(39.5)	매수	70,000	35.1	11.46	1.06
KCC	401,500	(1.1)	(1.1)	(9.3)	(9.2)	(14.8)	(19.5)	매수	550,000	37.0	12.48	0.62
OCI	71,700	0.0	(1.4)	(3.0)	(18.5)	(39.5)	(1.2)	매수	85,000	18.5	17.06	0.71
SKC	32,250	0.8	(1.8)	(5.6)	(12.8)	(12.7)	18.8	매수	43,000	33.3	9.75	0.78
국도화학	58,200	1.2	2.5	0.7	(16.5)	(13.9)	41.3	매수	100,000	71.8	7.20	0.70
SK이노베이션	126,500	(3.1)	0.4	(0.8)	12.4	16.1	49.0	매수	140,000	10.7	6.91	0.67
S-Oil	78,000	(0.9)	0.0	4.0	12.1	25.2	60.5	매수	85,000	9.0	12.66	1.46
GS	48,300	(2.2)	(1.6)	(4.2)	(1.2)	(0.8)	26.6	매수	60,000	24.2	6.23	0.79
SK가스	67,800	(2.0)	(4.5)	(3.8)	(19.2)	(22.7)	(25.2)	매수	90,000	32.7	7.48	0.60
대우인터내셔널	15,000	(1.0)	(5.1)	(12.0)	(34.9)	(40.1)	(49.7)	매수	22,000	46.7	8.31	0.71
LG상사	32,550	(4.5)	(3.6)	(3.7)	(3.1)	(11.3)	12.8	매수	40,000	22.9	10.48	0.85

SK securities Happiness Partner

SKS Energy Daily

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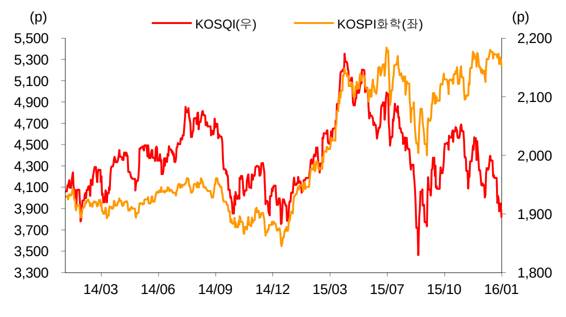
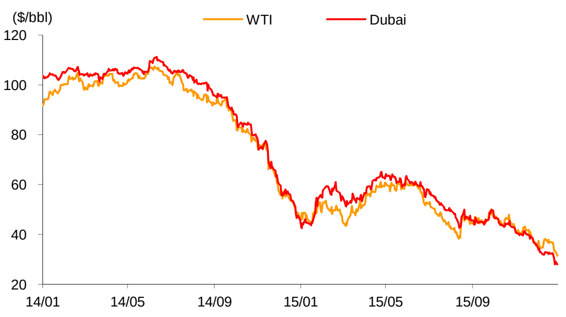
Key Chart

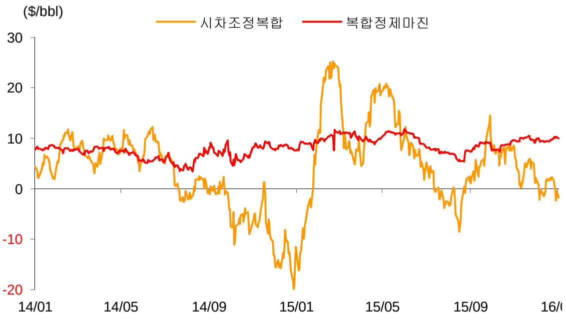
KOSPI/KOSPI화학



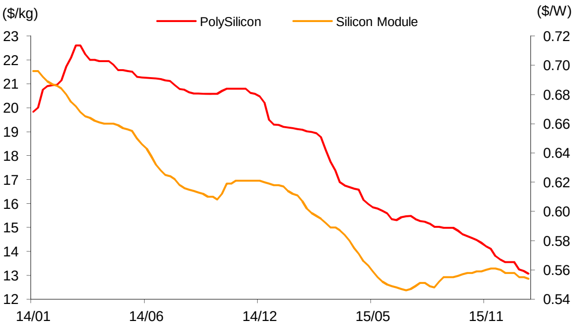
WTI/Dubai



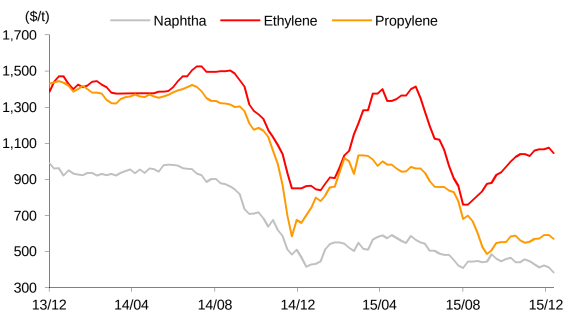
Complex & 1M lagging margin



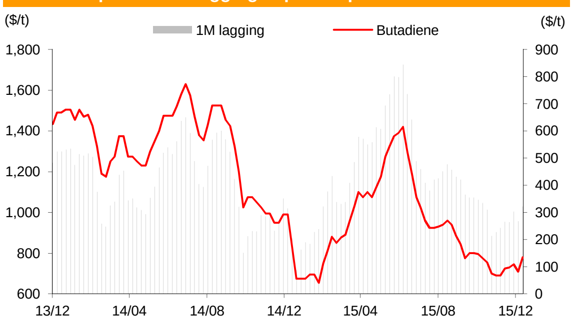
Polysilicon & Module prices



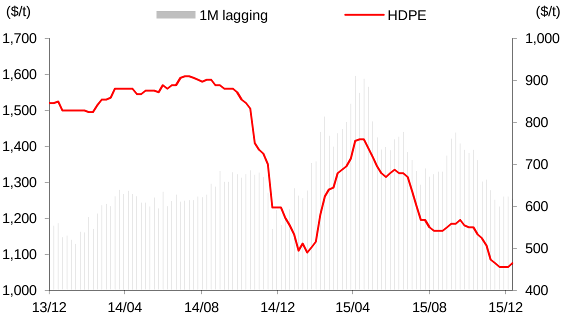
Naphtha/Ethylene/Propylene prices



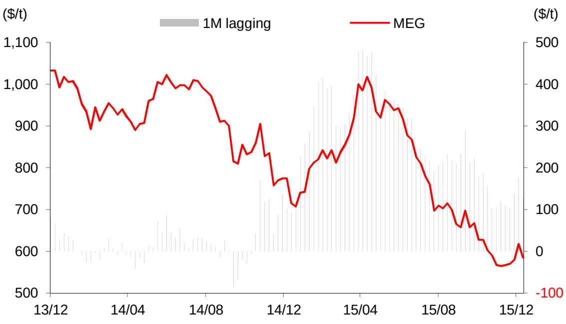
Butadiene price & 1M lagging naphtha spread



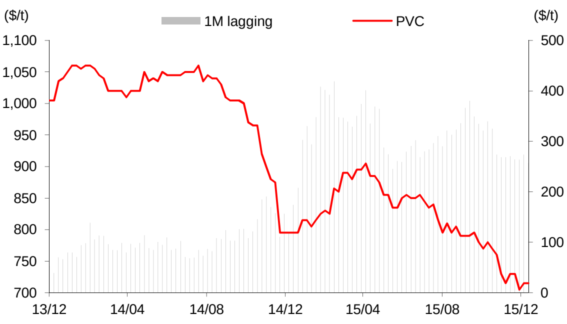
HDPE price & 1M lagging naphtha spread



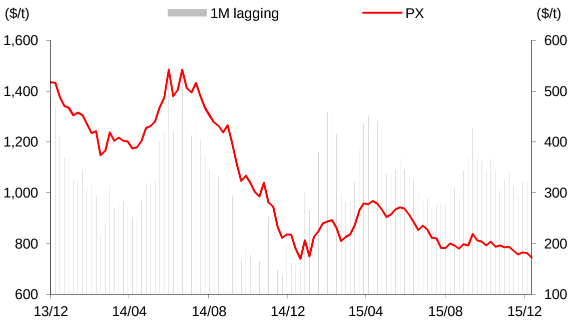
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

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News Comment

Headline	(출처: Platts)
제목	Formosa, 1월 PE 가격 결국 인하하기로 결정
결론	하락 결정에도 불구하고 여전히 PE spread는 고점을 유지하는 상황임
세부	
	1) C5/lbs 인상 추진 → 시장상황 고려해 인상결정 연기 → C3/lbs 인하 결정
	2) 미국 수요와 재고상황 양호하지만 유가 하락분을 반영한 결과물임
	3) 또한 미국 수입물량 증대되고 있는 부분도 부담으로 작용
	4) 미국 내 또 다른 화학업체 역시 인하결정으로 변경할 가능성 대두
	5) 하락 결정에도 불구하고 여전히 PE spread는 고점을 유지하는 상황임

WTI Comment	(출처: 연합뉴스)
제목	주요 IB의 전망 하향으로 유가급락
상승 요인	
하락 요인	모건스탠리, 달러화 추가강세로 유가 추가하락($20~25/bbl) 경고 BoA, 2016년 유가 전망치 기존 $48/bbl에서 $45/bbl 하향 조정

Issue 1	(출처: 각종언론)
제목	OCI, 텍사스 태양광 발전소 Alamo 7을 2,714억원에 매각 결정
결론	지속적인 현금확보는 긍정적, 다만 사용처에 대해서는 추후확인 필요
세부	
	1) 미국 텍사스에 건설 중인 106MW 규모 Alamo 7을 콘에디슨에 매각
	2) 매각대금 2,714억원. 재무구조 개선 및 향후 투자재원 마련이 매각 사유임
	3) Alamo 7은 Alamo 프로젝트 중 두 번째로 큰 발전소, 올 9월 완공 예정임
	4) 윤석환 OCI 솔라파워 사장, "확보된 재원 차기북미지역 발전소에 사용"
	5) 지속적인 현금확보는 긍정적, 다만 사용처에 대해서는 추후확인 필요

Issue 2	(출처: 각종언론)
제목	S-Oil, 한국석유공사 부지에 1-2차 고도화/화학설비 건설 시작
결론	S-Oil의 capex 진행 및 재무부담은 올 해부터 본격화될 수 있음
세부	
	1) 한국석유공사, 3,259억원 사업비로 석유비축기지 2단계 지하화 사업 본격
	2) 기존 상부 저장탱크와 부지는 S-Oil에 매각한 바 있음
	3) S-Oil은 3~4월 1차 공사시작, 총 5조원 투자해 RFCC 건설. 프로필렌 생산
	4) 2차로는 2018년 이후 3조원 추가투자해 downstream 설비 건설할 것
	5) S-Oil의 capex 진행 및 재무부담은 올 해부터 본격화될 수 있음

Issue 3	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

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)

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2013avg.	2014avg.	2015acc.
F/X	**USD/EUR**	0.921	0.915	0.923	0.910	0.880	0.896	0.844	0.921	0.753	0.754	0.901
	Change, %		0.6	(0.2)	1.2	4.6	2.8	9.1	(0.0)	(3.9)	13.7	2.2
	USD/JPY	117.8	117.3	119.4	121.0	120.3	122.8	118.5	120.6	97.7	105.9	121.1
	Change, %		0.4	(1.4)	(2.7)	(2.1)	(4.1)	(0.6)	(2.3)	21.5	13.8	(2.7)
	USD/KRW	1,209.7	1,197.8	1,187.6	1,179.6	1,144.3	1,129.5	1,089.7	1,172.6	1,094.6	1,053.0	1,131.2
	Change, %		1.0	1.9	2.6	5.7	7.1	11.0	3.2	50.3	3.3	6.9
Agriculture	**Corn**	351.8	357.0	351.5	373.0	382.8	427.3	400.3	358.8	579.2	415.6	376.8
	Change, %		(1.5)	0.1	(5.7)	(8.1)	(17.7)	(12.1)	(2.0)	(39.6)	(5.9)	(6.7)
	Soybean	881.0	879.5	864.5	870.8	885.8	1,043.5	1,051.5	871.3	1,407.0	1,245.5	945.4
	Change, %		0.2	1.9	1.2	(0.5)	(15.6)	(16.2)	1.1	(7.5)	(22.3)	(6.8)
	Wheat	469.0	478.5	458.3	482.8	509.3	581.5	563.8	470.0	684.3	588.0	508.1
	Change, %		(2.0)	2.3	(2.8)	(7.9)	(19.3)	(16.8)	(0.2)	(22.2)	(2.6)	(7.7)
	Rice	11.5	11.6	11.5	11.1	13.0	10.9	11.3	11.6	15.5	14.0	11.1
	Change, %		(0.6)	0.3	4.4	(11.2)	6.3	1.9	(0.2)	4.4	(25.9)	4.4
	Oats	199.0	210.8	210.5	256.5	227.3	249.3	303.3	217.3	367.5	373.1	250.2
	Change, %		(5.6)	(5.5)	(22.4)	(12.4)	(20.2)	(34.4)	(8.4)	1.9	(14.3)	(20.5)
MYR/mt	**Palm Oil**	2,239.0	2,263.0	2,290.0	2,222.0	2,168.0	2,190.0	2,359.0	2,398.0	2,405.0	2,415.1	2,190.3
	Change, %		(1.1)	(2.2)	0.8	3.3	2.2	(5.1)	(6.6)	13.3	(12.8)	2.2
	Cocoa	2,902.0	3,017.0	3,124.0	3,348.0	3,049.0	3,302.0	2,968.0	3,211.0	2,403.9	3,006.8	3,091.6
	Change, %		(3.8)	(7.1)	(13.3)	(4.8)	(12.1)	(2.2)	(9.6)	21.2	7.4	(6.1)
	Cotton	61.5	61.4	62.6	63.7	61.6	65.5	60.8	63.3	83.3	76.4	63.3
	Change, %		0.2	(1.8)	(3.5)	(0.2)	(6.1)	1.2	(2.8)	12.6	(28.8)	(2.8)
	Sugar	14.2	14.5	15.0	14.6	14.3	12.4	14.9	15.2	17.5	16.3	13.1
	Change, %		(2.1)	(5.5)	(2.9)	(1.3)	14.0	(5.1)	(7.2)	(15.9)	(11.5)	7.7
	Coffee	114.5	119.0	123.9	118.1	131.6	123.0	180.1	126.7	126.0	177.1	132.6
	Change, %		(3.8)	(7.6)	(3.1)	(13.0)	(6.9)	(36.4)	(9.7)	(23.0)	50.5	(13.7)
Energy	**WTI**	31.4	33.2	36.8	35.6	49.6	52.7	48.4	37.0	98.0	92.9	48.8
	Change, %		(5.3)	(14.6)	(11.8)	(36.7)	(40.4)	(35.0)	(15.2)	7.2	(45.9)	(35.7)
	Brent	31.2	33.6	37.2	37.9	52.7	58.7	50.1	37.3	108.7	99.5	53.7
	Change, %		(7.0)	(16.1)	(17.7)	(40.7)	(46.9)	(37.7)	(16.3)	(0.3)	(48.3)	(41.9)
	Natural Gas	2.4	2.5	2.3	2.0	2.5	2.8	2.9	2.3	3.7	4.3	2.6
	Change, %		(3.1)	2.7	20.4	(4.2)	(13.5)	(18.7)	2.5	26.2	(31.7)	(8.9)
	Ethanol	1.3	1.3	1.4	1.5	1.5	1.6	1.5	1.4	2.3	2.1	1.5
	Change, %		(1.2)	(3.4)	(9.3)	(14.4)	(20.0)	(10.6)	(5.8)	(12.7)	(14.9)	(12.6)
	RBOB Gasoline	111.3	112.8	129.1	128.2	141.7	201.7	132.3	126.7	285.0	262.6	163.6
	Change, %		(1.3)	(13.8)	(13.1)	(21.4)	(44.8)	(15.9)	(12.2)	(0.9)	(48.5)	(32.0)
	Coal	43.4	43.4	43.3	43.1	42.1	41.0	46.8	43.3	56.1	57.5	45.2
	Change, %		(0.0)	0.0	0.6	3.1	5.7	(7.4)	0.0	(1.0)	(15.5)	(4.1)
Metal	**Gold**	1,094.2	1,104.1	1,074.6	1,074.7	1,157.3	1,163.7	1,222.5	1,061.4	1,410.4	1,266.5	1,160.6
	Change, %		(0.9)	1.8	1.8	(5.5)	(6.0)	(10.5)	3.1	(28.0)	(1.3)	(5.7)
	Silver	13.9	13.9	13.9	13.9	15.8	15.6	16.5	13.8	23.8	19.1	15.7
	Change, %		(0.5)	(0.1)	(0.4)	(12.5)	(11.1)	(16.0)	0.3	(35.8)	(18.9)	(11.8)
	Platinum	844.6	880.0	883.9	840.3	982.5	1,031.8	1,231.8	891.1	1,485.7	1,384.6	1,055.7
	Change, %		(4.0)	(4.5)	0.5	(14.0)	(18.1)	(31.4)	(5.2)	(11.2)	(11.5)	(20.0)
	Palladium	479.1	494.9	540.0	542.7	711.1	652.4	803.0	563.0	725.9	803.4	691.9
	Change, %		(3.2)	(11.3)	(11.7)	(32.6)	(26.6)	(40.3)	(14.9)	1.7	11.4	(30.8)
	Copper	4,387.0	4,485.0	4,609.5	4,703.0	5,295.0	5,590.0	6,090.0	4,705.0	7,352.6	6,828.1	5,503.1
	Change, %		(2.2)	(4.8)	(6.7)	(17.1)	(21.5)	(28.0)	(6.8)	(7.2)	(14.4)	(20.3)
	Uranium	34.5	34.5	34.5	36.2	37.3	36.3	35.4	34.4	38.5	33.5	36.9
	Change, %		0.0	0.1	(4.6)	(7.5)	(4.8)	(2.5)	0.3	(20.9)	2.5	(6.4)
	HR Coil	397.0	401.0	395.0	364.0	416.0	471.0	594.0	391.0	630.4	653.2	461.5
	Change, %		(1.0)	0.5	9.1	(4.6)	(15.7)	(33.2)	1.5	3.1	(10.4)	(14.0)
	Scrap	250.0	250.0	250.0	250.0	225.0	270.0	355.0	250.0	396.9	401.3	252.9
	Change, %		0.0	0.0	0.0	11.1	(7.4)	(29.6)	0.0	(1.2)	(16.5)	(1.2)
	Zinc	1,482.0	1,509.0	1,568.0	1,552.0	1,836.0	2,011.0	2,156.0	1,609.0	1,940.3	2,165.0	1,941.9
	Change, %		(1.8)	(5.5)	(4.5)	(19.3)	(26.3)	(31.3)	(7.9)	(1.2)	6.0	(23.7)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		01/11	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	**WTI**	31.4	33.2	36.8	35.6	46.7	51.4	46.1	53.2	93.1	48.8	34.5
	Change, %		(5.3)	(14.6)	(11.8)	(32.7)	(38.9)	(31.8)	(41.0)	(66.3)	(35.6)	(9.0)
	Dubai	28.1	29.1	32.5	36.2	47.1	56.9	45.7	53.6	96.7	50.8	30.3
	Change, %		(3.6)	(13.7)	(22.5)	(40.4)	(50.7)	(38.5)	(47.6)	(71.0)	(44.7)	(7.4)
Crude Oil Product	**Gasoline(휘발유)**	51.1	52.7	55.7	57.0	65.1	78.4	55.8	64.8	110.9	69.5	53.8
	Change, %		(3.1)	(8.3)	(10.4)	(21.5)	(34.9)	(8.4)	(21.1)	(54.0)	(26.5)	(5.0)
	Kerosene(등유)	39.2	40.7	44.3	49.7	59.0	68.0	62.2	71.2	112.6	64.7	41.8
	Change, %		(3.6)	(11.5)	(21.1)	(33.6)	(42.4)	(37.0)	(45.0)	(65.2)	(39.5)	(6.3)
	Diesel(경유)	38.3	39.8	43.3	49.4	59.6	67.8	62.0	70.2	112.8	64.8	40.9
	Change, %		(3.7)	(11.5)	(22.4)	(35.8)	(43.5)	(38.2)	(45.4)	(66.0)	(40.9)	(6.3)
	Bunker-C	23.1	23.9	26.5	29.3	38.1	50.2	40.8	48.8	86.5	45.3	24.7
	Change, %		(3.2)	(12.9)	(21.0)	(39.4)	(54.0)	(43.3)	(52.6)	(73.3)	(48.9)	(6.2)
	Naphtha	40.1	41.6	44.4	45.9	48.9	54.4	42.9	48.0	94.3	52.6	42.7
	Change, %		(3.5)	(9.6)	(12.6)	(17.9)	(26.2)	(6.5)	(16.5)	(57.5)	(23.7)	(6.0)
Dubai Spread	**Gasoline(휘발유)**	23.0	23.6	23.2	20.8	18.0	21.5	10.1	11.2	14.2	18.7	23.5
	Change		(0.6)	(0.2)	2.2	5.0	1.5	12.9	11.9	8.8	4.3	(0.5)
	Kerosene(등유)	11.1	11.5	11.7	13.5	11.9	11.1	16.5	17.6	15.9	14.0	11.5
	Change		(0.4)	(0.6)	(2.3)	(0.8)	0.0	(5.4)	(6.5)	(4.8)	(2.9)	(0.4)
	Diesel(경유)	10.2	10.7	10.7	13.2	12.6	10.8	16.3	16.6	16.0	14.0	10.5
	Change		(0.4)	(0.5)	(2.9)	(2.3)	(0.6)	(6.1)	(6.4)	(5.8)	(3.8)	(0.3)
	Bunker-C	(5.0)	(5.2)	(6.0)	(6.9)	(9.0)	(6.7)	(4.9)	(4.8)	(10.3)	(5.5)	(5.7)
	Change		0.3	1.1	2.0	4.0	1.7	(0.0)	(0.1)	5.3	0.6	0.7
	Naphtha	12.1	12.5	11.8	9.7	1.8	(2.5)	(2.8)	(5.6)	(2.4)	1.8	12.4
	Change		(0.4)	0.2	2.3	10.3	14.6	14.8	17.6	14.5	10.2	(0.3)
Refining Margin	**Simple(단순)**	4.0	4.0	3.6	3.4	1.2	1.7	3.3	3.3	(0.1)	3.3	3.8
	Change		(0.1)	0.4	0.6	2.8	2.3	0.7	0.7	4.1	0.7	0.2
	Complex(복합)	10.0	10.3	10.0	9.9	7.7	8.0	7.8	8.0	7.1	9.3	10.1
	Change		(0.3)	0.0	0.1	2.3	2.0	2.1	2.0	2.9	0.7	(0.1)
	Complex(lagging)	(1.7)	(0.5)	1.8	1.6	8.6	4.2	(15.5)	(14.3)	2.2	6.5	0.0
	Change		(1.3)	(3.5)	(3.3)	(10.4)	(6.0)	13.8	12.6	(4.0)	(8.2)	(1.8)

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

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Petrochemical Price Data

Daily Price			01/11	01/08	01/07	01/06	01/05	01/04	01/01	12/31	12/30	12/29
Spot Price	**Naphtha**	CFR Japan	361.4	383.9	377.3	409.9	422.9	416.5	410.5	410.5	416.3	412.3
	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	555.0	555.0	580.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0
	Butadiene	FOB Korea	730.0	730.0	715.0	710.0	710.0	700.0	700.0	700.0	700.0	700.0
	HDPE	CFR FE Asia	1,075.0	1,090.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0
	LDPE	CFR FE Asia	1,120.0	1,110.0	1,090.0	1,090.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,090.0
	LLDPE	CFR FE Asia	1,080.0	1,070.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0
	MEG	CFR China	576.0	582.0	577.0	591.0	583.0	584.0	616.0	616.0	619.0	615.0
	PP	CFR FE Asia	780.0	780.0	800.0	815.0	815.0	815.0	815.0	815.0	815.0	815.0
	PX	CFR China	709.7	724.7	723.0	742.7	744.7	743.3	745.5	745.5	747.0	740.3
	PTA	CFR China	562.0	564.0	571.0	573.0	573.0	571.0	571.0	571.0	571.0	569.0
	Benzene	FOB Korea	554.0	574.0	565.0	588.0	590.0	595.0	596.0	596.0	590.0	582.0
	Toluene	FOB Korea	562.0	583.0	577.0	608.0	607.0	614.0	609.0	609.0	610.5	601.0
	Xylene	FOB Korea	595.0	614.0	612.0	627.0	637.0	637.0	637.0	637.0	643.0	644.0
	SM	FOB Korea	911.0	927.0	927.0	931.0	914.0	908.0	900.0	900.0	900.0	895.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**Naphtha**	CFR Japan	384.5	413.5	429.0	486.0	445.5	416.5	413.5	865.9	493.0	399.0
	Change, %			*(7.0)*	*(10.4)*	*(20.9)*	*(13.7)*	*(7.7)*	*(7.0)*	*(55.6)*	*(22.0)*	*(3.6)*
	Ethylene	CFR SE Asia	1,095.0	1,090.0	1,090.0	880.0	815.0	950.0	1,090.0	1,401.1	1,103.7	1,092.5
	Change, %			*0.5*	*0.5*	*24.4*	*34.4*	*15.3*	*0.5*	*(21.8)*	*(0.8)*	*0.2*
	Propylene	CFR SE Asia	625.0	650.0	650.0	465.0	630.0	675.0	650.0	1,254.2	770.0	581.3
	Change, %			*(3.8)*	*(3.8)*	*34.4*	*(0.8)*	*(7.4)*	*(3.8)*	*(50.2)*	*(18.8)*	*7.5*
	Butadiene	CFR SE Asia	740.0	720.0	675.0	725.0	910.0	775.0	720.0	1,281.7	877.5	730.0
	Change, %			*2.8*	*9.6*	*2.1*	*(18.7)*	*(4.5)*	*2.8*	*(42.3)*	*(15.7)*	*1.4*
	Benzene	CFR SE Asia	582.5	580.0	602.5	600.0	585.0	590.0	580.0	1,243.1	690.0	581.3
	Change, %			*0.4*	*(3.3)*	*(2.9)*	*(0.4)*	*(1.3)*	*0.4*	*(53.1)*	*(15.6)*	*0.2*
	Toluene	CFR SE Asia	630.0	630.0	630.0	665.0	645.0	565.0	630.0	1,082.5	700.8	630.0
	Change, %			*0.0*	*0.0*	*(5.3)*	*(2.3)*	*11.5*	*0.0*	*(41.8)*	*(10.1)*	*0.0*
	Xylene	CFR SE Asia	640.0	625.0	675.0	680.0	650.0	590.0	625.0	1,055.7	699.3	632.5
	Change, %			*2.4*	*(5.2)*	*(5.9)*	*(1.5)*	*8.5*	*2.4*	*(39.4)*	*(8.5)*	*1.2*
Spread	**Ethylene**	-Naphtha	710.5	676.5	661.0	394.0	369.5	533.5	676.5	535.2	610.6	693.5
	Change, %			*5.0*	*7.5*	*80.3*	*92.3*	*33.2*	*5.0*	*32.8*	*16.4*	*2.5*
	Propylene	-Naphtha	240.5	236.5	221.0	(21.0)	184.5	258.5	236.5	388.3	277.0	182.3
	Change, %			*1.7*	*8.8*	*(1,245.2)*	*30.4*	*(7.0)*	*1.7*	*(38.1)*	*(13.2)*	*32.0*
	Butadiene	-Naphtha	355.5	306.5	246.0	239.0	464.5	358.5	306.5	415.9	384.5	331.0
	Change, %			*16.0*	*44.5*	*48.7*	*(23.5)*	*(0.8)*	*16.0*	*(14.5)*	*(7.5)*	*7.4*
	Benzene	-Naphtha	198.0	166.5	173.5	114.0	139.5	173.5	166.5	377.3	197.0	182.3
	Change, %			*18.9*	*14.1*	*73.7*	*41.9*	*14.1*	*18.9*	*(47.5)*	*0.5*	*8.6*
	Toluene	-Naphtha	245.5	216.5	201.0	179.0	199.5	148.5	216.5	216.6	207.8	231.0
	Change, %			*13.4*	*22.1*	*37.2*	*23.1*	*65.3*	*13.4*	*13.3*	*18.2*	*6.3*
	Xylene	-Naphtha	255.5	211.5	246.0	194.0	204.5	173.5	211.5	189.9	206.3	233.5
	Change, %			*20.8*	*3.9*	*31.7*	*24.9*	*47.3*	*20.8*	*34.6*	*23.9*	*9.4*

자료 : Cischem, Platts, Bloomberg, SK증권
참고 : Spread는 Polymer와 Naphtha의 가격차이임

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**HDPE**	CFR SE Asia	1,075.0	1,065.0	1,075.0	1,185.0	1,165.0	1,200.0	1,065.0	1,524.9	1,230.1	1,070.0
	Change, %			0.9	0.0	(9.3)	(7.7)	(10.4)	0.9	(29.5)	(12.6)	0.5
	MEG	CFR SE Asia	585.0	617.5	567.5	697.5	715.0	715.0	617.5	934.1	780.8	601.3
	Change, %			(5.3)	3.1	(16.1)	(18.2)	(18.2)	(5.3)	(37.4)	(25.1)	(2.7)
	PVC	CFR SE Asia	715.0	715.0	730.0	790.0	795.0	795.0	715.0	1,013.9	820.8	715.0
	Change, %			0.0	(2.1)	(9.5)	(10.1)	(10.1)	0.0	(29.5)	(12.9)	0.0
	PP	CFR SE Asia	830.0	835.0	875.0	995.0	1,005.0	1,130.0	835.0	1,503.0	1,109.8	832.5
	Change, %			(0.6)	(5.1)	(16.6)	(17.4)	(26.5)	(0.6)	(44.8)	(25.2)	(0.3)
	2-EH	CFR Korea	685.0	680.0	665.0	790.0	885.0	970.0	680.0	1,397.1	930.1	682.5
	Change, %			0.7	3.0	(13.3)	(22.6)	(29.4)	0.7	(51.0)	(26.3)	0.4
	ABS	CFR SE Asia	1,130.0	1,130.0	1,077.5	1,200.0	1,275.0	1,525.0	1,130.0	1,897.7	1,431.1	1,130.0
	Change, %			0.0	4.9	(5.8)	(11.4)	(25.9)	0.0	(40.5)	(21.0)	0.0
	SBR	CFR SE Asia	1,200.0	1,150.0	1,095.0	1,255.0	1,230.0	1,475.0	1,150.0		1,332.1	1,175.0
	Change, %			4.3	9.6	(4.4)	(2.4)	(18.6)	4.3		(9.9)	2.1
	SM	CFR SE Asia	955.0	910.0	945.0	942.5	965.0	877.5	910.0	1,547.1	1,100.7	932.5
	Change, %			4.9	1.1	1.3	(1.0)	8.8	4.9	(38.3)	(13.2)	2.4
	Caustic	FOB NEA	285.0	285.0	282.5	315.0	315.0	260.0	285.0	310.0	296.8	285.0
	Change, %			0.0	0.9	(9.5)	(9.5)	9.6	0.0	(8.1)	(4.0)	0.0
	PX	CFR SE Asia	745.0	762.5	772.5	837.5	792.5	780.0	762.5	1,228.5	842.9	753.8
	Change, %			(2.3)	(3.6)	(11.0)	(6.0)	(4.5)	(2.3)	(39.4)	(11.6)	(1.2)
	PO	CFR China	1,205.0	1,257.5	1,372.5	1,587.5	1,470.0	1,827.5	1,257.5	2,179.2	1,683.4	1,231.3
	Change, %			(4.2)	(12.2)	(24.1)	(18.0)	(34.1)	(4.2)	(44.7)	(28.4)	(2.1)
	Caprolactam	CFR SE Asia	1,250.0	1,260.0	1,285.0	1,350.0	1,360.0	1,795.0	1,260.0	2,233.4	1,581.5	1,255.0
	Change, %			(0.8)	(2.7)	(7.4)	(8.1)	(30.4)	(0.8)	(44.0)	(21.0)	(0.4)
	PTA	CFR SE Asia	582.5	585.0	597.5	627.5	565.0	602.5	585.0	911.7	648.0	583.8
	Change, %			(0.4)	(2.5)	(7.2)	3.1	(3.3)	(0.4)	(36.1)	(10.1)	(0.2)
Spread	**HDPE**		690.5	651.5	646.0	699.0	719.5	783.5	651.5	659.0	737.1	671.0
	Change, %			6.0	6.9	(1.2)	(4.0)	(11.9)	6.0	4.8	(6.3)	2.9
	MEG		200.5	204.0	138.5	211.5	269.5	298.5	204.0	68.2	287.8	202.3
	Change, %			(1.7)	44.8	(5.2)	(25.6)	(32.8)	(1.7)	193.8	(30.3)	(0.9)
	PVC		330.5	301.5	301.0	304.0	349.5	378.5	301.5	148.0	327.8	316.0
	Change, %			9.6	9.8	8.7	(5.4)	(12.7)	9.6	123.3	0.8	4.6
	PP		445.5	421.5	446.0	509.0	559.5	713.5	421.5	637.1	616.8	433.5
	Change, %			5.7	(0.1)	(12.5)	(20.4)	(37.6)	5.7	(30.1)	(27.8)	2.8
	2-EH		300.5	266.5	236.0	304.0	439.5	553.5	266.5	531.3	437.0	283.5
	Change, %			12.8	27.3	(1.2)	(31.6)	(45.7)	12.8	(43.4)	(31.2)	6.0
	ABS		745.5	716.5	648.5	714.0	829.5	1,108.5	716.5	1,031.9	938.1	731.0
	Change, %			4.0	15.0	4.4	(10.1)	(32.7)	4.0	(27.8)	(20.5)	2.0
	SBR	BD spread	460.0	430.0	420.0	530.0	320.0	700.0	430.0		454.7	445.0
	Change, %			7.0	9.5	(13.2)	43.8	(34.3)	7.0		1.2	3.4
	SM		570.5	496.5	516.0	456.5	519.5	461.0	496.5	681.2	607.7	533.5
	Change, %			14.9	10.6	25.0	9.8	23.8	14.9	(16.3)	(6.1)	6.9
	Caustic											
	Change, %											
	PX		360.5	349.0	343.5	351.5	347.0	363.5	349.0	362.6	349.9	354.8
	Change, %			3.3	4.9	2.6	3.9	(0.8)	3.3	(0.6)	3.0	1.6
	PO	propylene sprea	580.0	607.5	722.5	1,122.5	840.0	1,152.5	607.5	925.0	913.4	650.0
	Change, %			(4.5)	(19.7)	(48.3)	(31.0)	(49.7)	(4.5)	(37.3)	(36.5)	(10.8)
	Caprolactam	benzene spread	667.5	680.0	682.5	750.0	775.0	1,205.0	680.0	990.3	891.6	673.8
	Change, %			(1.8)	(2.2)	(11.0)	(13.9)	(44.6)	(1.8)	(32.6)	(25.1)	(0.9)
	PTA	px spread	61.0	51.3	56.8	41.3	10.3	56.5	51.3	51.8	58.0	56.1
	Change, %			19.0	7.5	47.9	495.1	8.0	19.0	17.9	5.2	8.7

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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	Currency	01/11	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 15	PER 16E	PBR 15	PBR 16E	EV/EBITDA 15	EV/EBITDA 16E
Petrochemical																
Dow Chemical	USD	45.4	(1.9)	(9.1)	(14.9)	(3.6)	(11.7)	2.2	(11.8)	52,601	14.4	13.9	2.9	2.4	8.9	7.6
Du Pont	USD	59.2	(3.3)	(6.2)	(16.0)	5.3	1.6	(15.2)	(11.1)	51,866	19.3	21.4	5.1	5.0	12.5	11.4
Eastman	USD	62.3	(2.2)	(6.6)	(7.7)	(12.1)	(19.4)	(16.4)	(7.8)	9,251	11.1	8.6	3.2	2.2	11.6	7.1
BASF	EUR	63.9	0.5	(6.1)	(6.8)	(12.5)	(22.1)	(7.3)	(9.7)	63,831	12.5	12.8	2.3	2.0	7.2	6.8
Akzo Nobel	EUR	57.6	(0.4)	(4.0)	(6.0)	(3.4)	(13.6)	(2.9)	(6.6)	15,613	26.7	14.5	2.4	2.4	10.1	7.8
Arkema	EUR	56.4	(0.3)	(9.5)	(9.1)	(12.9)	(14.8)	5.9	(12.7)	4,570	21.8	12.8	1.1	1.2	6.0	5.6
Lanxess	EUR	37.2	(1.5)	(10.1)	(12.5)	(21.1)	(29.8)	7.8	(12.9)	3,701	72.6	16.6	1.6	1.5	7.6	5.4
Sumitomo Chemical	JPY	595	0.0	(10.5)	(13.3)	(12.8)	(11.8)	29.8	(15.1)	8,362	16.8	11.4	1.0	1.2	9.2	7.1
Mitsubishi Chemical	JPY	702	0.0	(5.9)	(9.0)	1.6	(4.8)	19.3	(9.4)	8,975	19.6	14.6	0.7	1.0	8.0	6.3
Shin-Etsu Chemical	JPY	6,183	0.0	(4.6)	(9.2)	(9.4)	(15.0)	(20.3)	(6.6)	22,680	22.1	18.0	1.4	1.3	7.3	6.2
Asahi Kasei	JPY	791	0.0	(3.7)	(2.1)	(14.9)	(14.1)	(27.2)	(3.9)	9,419	9.7	11.8	1.1	1.0	4.8	5.5
JSR	JPY	1,755	0.0	(5.1)	(5.3)	(8.3)	(14.3)	(14.4)	(7.6)	3,368	18.0	13.5	1.4	1.1	6.8	5.5
Nitto Denko	JPY	7,573	0.0	(11.9)	(14.1)	(8.4)	(19.2)	11.3	(15.0)	11,170	15.7	13.9	1.6	1.9	5.4	6.4
SABIC	SAR	70.6	2.5	(6.1)	(19.3)	(20.8)	(30.4)	(10.0)	(7.7)	56,419	10.7	11.1	1.5	1.3	5.9	6.0
Yansab	SAR	26.9	1.9	(13.6)	(33.7)	(46.1)	(48.9)	(33.6)	(17.2)	4,024	10.8	13.5	1.7	1.0	6.9	7.4
Formosa Plastics	TWD	71.7	0.4	(1.0)	(0.4)	(5.2)	2.7	(0.1)	(6.9)	13,667	25.5	15.4	1.6	1.5	34.7	22.5
Formosa Fiber	TWD	68.7	0.9	0.7	1.5	(5.5)	(1.3)	6.5	(7.2)	12,057	37.2	16.3	1.4	1.3	20.4	13.0
Nan Ya Plastics	TWD	56.9	0.0	(0.9)	0.2	(7.5)	(13.3)	(11.4)	(6.7)	13,512	16.3	12.4	1.6	1.4	20.9	12.8
Sinopec Shanghai	CNY	5.48	(4.7)	(7.0)	(11.0)	(19.2)	(29.8)	26.0	(15.4)	7,499	#N/A N/A	21.2	1.2	3.1	24.8	9.1
Sinopec Yizheng(Fibe	CNY	6.89	(1.9)	(6.6)	(13.9)	(28.0)	(32.2)	21.7	(15.6)	13,127	24.5	#N/A N/A	1.3	4.3	8.2	38.5
Reliance	INR	1,052	2.5	5.7	10.4	18.5	5.0	22.2	3.6	50,993	12.2	12.6	1.4	1.4	9.7	9.9
Industries Qatar	QAR	104.0	2.0	(1.7)	1.3	(18.0)	(22.9)	(34.3)	(6.4)	17,279	16.0	12.6	3.0	1.9	71.4	50.6
PTT Chemical	THB	45.3	(3.7)	(9.5)	(7.2)	(24.9)	(32.0)	(17.7)	(9.5)	5,573	16.8	7.8	1.3	0.8	5.2	5.5
Petronas	MYR	7.2	(4.6)	2.0	7.8	10.1	16.1	42.3	(1.0)	13,060	17.6	21.1	1.9	2.4	8.6	10.7
LG화학	KRW	322,500	(2.3)	(5.6)	(1.2)	11.6	24.5	80.7	(1.8)	17,685	18.8	15.3	1.8	1.7	7.1	6.4
롯데케미칼	KRW	258,000	(2.5)	5.3	12.2	(2.3)	(3.9)	73.7	6.0	7,317	8.4	8.0	1.2	1.0	4.1	3.9
한화케미칼	KRW	26,300	(3.0)	(1.5)	(1.1)	20.9	32.2	128.7	(3.3)	3,524	17.8	11.6	0.9	0.9	10.5	8.8
금호석유	KRW	51,800	(1.9)	(1.0)	(6.8)	(16.7)	(26.8)	(39.5)	(0.6)	1,306	12.0	10.1	1.0	1.0	9.0	7.5
SKC	KRW	32,250	0.8	(1.8)	(5.6)	(15.2)	(12.7)	18.8	(4.6)	982	3.9	8.3	0.8	0.8	7.4	7.2
국도화학	KRW	58,200	1.2	2.5	0.7	(17.3)	(13.9)	41.3	(1.9)	280	6.1	6.9	0.8	0.7	4.1	3.9
효성	KRW	2,410	(3.8)	(6.6)	(10.2)	(17.5)	(18.3)	(13.5)	(7.7)	3,400	9.2	7.1	1.3	1.1	7.1	6.2
Average			**(0.8)**	**(4.5)**	**(6.5)**	**(9.5)**	**(12.7)**	**8.9**	**(7.5)**							
Refinery																
Valero	USD	69.1	1.2	(1.2)	2.3	7.6	4.9	42.0	(2.3)	33,257	8.4	8.0	1.2	1.6	3.8	4.1
Conoco Phillips	USD	41.1	(5.0)	(12.3)	(14.6)	(26.7)	(30.5)	(36.7)	(11.9)	50,768	13.1	#N/A N/A	1.6	1.1	6.7	8.3
Formosa Petrochemi	TWD	76.0	0.0	(1.2)	3.4	(5.1)	(1.0)	15.7	(3.6)	21,678	72.3	17.7	2.7	2.7	30.1	12.0
Tesoro	USD	101.1	(0.5)	(5.6)	0.5	(2.3)	2.7	38.7	(4.1)	12,168	13.2	7.0	2.1	2.3	6.9	4.5
Marathon Petroleum	USD	45.7	(1.0)	(10.8)	(7.9)	(7.9)	(16.1)	3.3	(11.8)	24,368	11.8	7.7	2.3	1.9	6.0	4.3
Devon Energy	USD	27.0	(5.4)	(16.6)	(19.6)	(40.4)	(51.7)	(55.4)	(15.7)	11,085	12.8	10.9	1.2	0.9	6.5	5.0
Hollyfrontier	USD	38.1	1.4	(5.4)	(12.6)	(24.3)	(15.9)	6.6	(4.6)	6,963	23.3	7.5	1.3	1.3	9.0	4.1
Phillips 66	USD	76.2	1.3	(4.9)	(8.0)	(8.8)	(6.5)	13.2	(6.9)	40,637	12.9	9.8	1.8	1.8	9.7	5.8
Murphy Oil	USD	18.3	(5.1)	(20.2)	(18.9)	(39.8)	(54.3)	(62.2)	(18.4)	3,151	13.9	#N/A N/A	1.0	0.5	3.2	3.8
JX Holdings	JPY	467.8	0.0	(8.8)	(8.3)	(5.2)	(7.4)	5.2	(8.0)	9,910	11.5	135.2	0.6	0.6	10.7	15.8
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	(13.7)	1.2	0.0	1,151	36.5	#N/A N/A	0.7	#N/A N/A	13.2	#N/A N/A
Idemitsu	JPY	1,842.0	0.0	(5.8)	(8.9)	(9.9)	(22.9)	(7.4)	(5.0)	2,502	9.3	18.8	0.5	0.5	9.0	13.0
Tonengeneral	JPY	1,011.0	0.0	(2.3)	(11.3)	(20.3)	(11.9)	1.3	(1.1)	4,851	#N/A N/A	27.5	1.4	1.4	#N/A N/A	37.4
Nesteoil	EUR	27.0	1.8	(0.3)	4.2	25.5	15.5	32.8	(2.3)	0	91.2	11.5	1.9	2.3	14.2	7.9
Ashland	USD	98.5	0.5	(3.6)	(5.8)	(6.6)	(16.8)	(17.9)	(4.1)	6,228	41.0	14.3	2.0	2.1	20.8	7.8
Fuchs Petrolub	EUR	39.5	(1.1)	(8.1)	(5.6)	(6.1)	1.0	20.9	(9.1)	5,565	20.2	22.8	4.8	5.5	12.9	13.1
SK이노베이션	KRW	126,500	(3.1)	0.4	(0.8)	11.0	16.1	49.0	(2.7)	9,679	10.2	8.6	0.7	0.7	6.3	6.0
S-Oil	KRW	78,000	(0.9)	0.0	4.0	10.5	25.2	60.5	(1.8)	7,266	11.7	10.0	1.6	1.5	7.5	7.2
GS	KRW	48,300	(2.2)	(1.6)	(4.2)	(1.7)	(0.8)	26.6	(4.7)	3,714	8.5	6.8	0.7	0.7	7.5	6.6
Average			**(1.0)**	**(5.7)**	**(5.9)**	**(7.9)**	**(9.7)**	**7.2**	**(6.2)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임
* 국내업체의 multiple은 Dataguidepro 기준임

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Global peers

	Currency	01/11	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 15	PER 16E	PBR 15	PBR 16E	EV/EBITDA 15	EV/EBITDA 16E
E&P/Shale																
Exxon Mobil	USD	74	(1.3)	(4.9)	(0.9)	(7.0)	(10.4)	(20.0)	(5.5)	306,767	12.3	19.0	2.2	1.8	8.2	8.0
BP	GBP	328	(0.2)	(5.6)	(2.9)	(16.2)	(23.2)	(17.7)	(7.3)	87,795	31.2	13.3	1.0	0.8	8.3	5.0
Shell	EUR	1,354	(1.5)	(10.7)	(6.8)	(25.2)	(25.7)	(35.7)	(11.3)	126,824	14.2	11.3	1.2	0.7	5.4	4.0
Chevron	USD	81	(1.7)	(9.1)	(6.6)	(9.8)	(14.4)	(25.4)	(10.2)	152,012	11.0	23.5	1.4	1.0	6.2	6.2
Total	EUR	37	0.0	(7.8)	(10.6)	(17.5)	(15.8)	(9.0)	(9.5)	99,106	27.5	9.7	1.4	1.0	6.6	5.2
Sinopec	CNY	5	(2.5)	(2.7)	(3.7)	(7.6)	(36.7)	(30.9)	(6.2)	81,531	12.6	14.4	1.0	0.9	6.8	5.2
Petrochina	CNY	8	(3.6)	(5.3)	(7.2)	(9.6)	(41.2)	(36.2)	(7.8)	201,754	11.7	29.6	1.1	1.2	7.1	7.0
CNOOC	CNY	13	(3.2)	(6.0)	(14.7)	(20.7)	(33.5)	(34.8)	(13.9)	7,312	6.8	32.5	1.1	1.3	8.1	11.2
Gazprom	RUB	131	(3.4)	(2.6)	(1.8)	(8.6)	(8.7)	(7.3)	(3.5)	40,824	18.8	2.6	0.3	0.3	2.9	2.2
Rosneft	RUB	241	(4.5)	(4.0)	(1.6)	(9.7)	6.2	16.7	(4.8)	33,532	6.0	6.3	0.7	0.8	4.3	3.2
Anadarko	USD	38	(6.9)	(23.2)	(23.8)	(47.9)	(50.1)	(52.3)	(22.3)	19,182	22.1	#N/A N/A	2.1	1.3	5.2	7.9
Petrobras	BRL	6	(2.9)	(11.4)	(16.0)	(30.8)	(48.3)	(35.2)	(9.1)	22,375	#N/A N/A	8.9	0.4	0.3	7.1	6.1
Lukoil	USD	2,258	(5.1)	(2.3)	(7.8)	(5.9)	(8.4)	(8.3)	(3.8)	25,360	6.3	5.4	0.4	0.3	N/A	N/A
Kinder	USD	14	(4.1)	(7.3)	(15.0)	(56.2)	(62.8)	(66.1)	(5.1)	47,497	40.2	21.8	2.6	0.8	20.2	10.3
Statoil	NOK	107	(2.8)	(13.5)	(11.7)	(25.0)	(22.6)	(18.3)	(13.7)	38,146	19.0	16.5	1.1	1.0	2.3	2.5
BHP	AUD	16	(4.9)	(12.6)	(9.6)	(39.3)	(41.7)	(42.9)	(12.9)	54,410	13.2	26.7	2.3	0.9	7.2	6.2
PTT E&P	THB	49	(3.0)	(12.6)	(12.9)	(36.5)	(52.2)	(56.7)	(14.8)	5,335	21.6	9.0	1.2	0.5	2.7	1.6
Petronas gas	MYR	21	(2.5)	(1.7)	(6.2)	(5.8)	0.7	(2.0)	(6.3)	9,548	23.8	23.2	4.2	3.8	14.8	13.3
Chesapeake	USD	4	(6.1)	(15.8)	0.2	(53.0)	(63.3)	(77.3)	(7.3)	2,773	25.7	#N/A N/A	0.9	1.1	5.0	6.6
Noble Energy	USD	29	(6.0)	(13.5)	(11.2)	(21.1)	(25.8)	(33.5)	(12.0)	12,409	20.2	341.1	1.7	1.0	8.8	8.5
Average		**0**	**(3.3)**	**(8.6)**	**(8.5)**	**(22.7)**	**(28.9)**	**(29.6)**	**(9.4)**							
PV																
WACKER	EUR	67.9	(2.0)	(10.2)	(8.0)	(10.6)	(26.1)	(20.4)	(12.4)	3,854	22.2	20.3	2.4	1.5	5.5	4.8
GCL-Poly	HKD	1.1	(4.5)	(5.3)	(12.9)	(29.4)	(25.7)	(36.7)	(7.8)	2,563	14.3	8.0	1.5	0.8	8.1	7.9
REC	NOK	0.4	0.0	0.0	0.0	0.0	1.4	5.9	0.0	519	7.4	#N/A N/A	2.0	#N/A N/A	#N/A N/A	#N/A N/A
SunEdison	USD	3.3	(2.1)	(41.9)	(19.5)	(63.9)	(89.0)	(82.8)	(34.4)	1,059	#N/A N/A	#N/A N/A	22.8	0.2	#N/A N/A	#N/A N/A
Canadian Solar	USD	22.4	(4.9)	(20.1)	(4.7)	5.9	(13.4)	(2.4)	(22.8)	1,251	5.9	9.1	1.9	1.5	4.7	8.6
JA Solar	USD	8.6	(0.7)	(10.2)	(2.9)	2.7	15.2	9.0	(10.9)	436	8.6	6.1	0.4	0.5	3.2	3.7
Trina Solar	USD	10.4	(4.0)	(3.9)	9.2	0.5	2.3	18.5	(5.4)	961	13.3	11.5	0.8	0.8	6.8	7.3
Solar City	USD	47.7	(2.3)	(9.7)	28.8	(2.6)	(10.0)	(3.9)	(6.5)	4,654	#N/A N/A	#N/A N/A	6.9	5.1	#N/A N/A	#N/A N/A
Yingli	USD	3.6	(3.5)	(19.3)	(36.3)	(30.1)	(63.7)	(82.4)	(20.5)	65	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	14.9	9.4
First Solar	USD	65.4	(0.3)	(1.9)	18.4	27.8	48.6	48.0	(0.9)	6,602	12.2	14.6	0.9	1.2	4.0	7.1
한화솔라원	USD	19.0	(8.7)	(15.0)	(14.4)	13.4	32.5	80.9	(13.4)	#N/A N/A	#N/A Fiel	#N/A N/A	#N/A Fiel	#N/A N/A	#N/A N/A	#N/A N/A
OCI	KRW	71,700	0.0	(1.4)	(3.0)	(15.6)	(39.5)	(1.2)	(4.4)	1,415	8.1	15.3	0.6	0.6	12.1	9.7
웅진에너지	KRW	1,570	(3.1)	(7.6)	(6.5)	(3.1)	(14.4)	9.4	(9.2)	96	N/A	0.6	0.6	12.1	9.7	9.2
신성솔라에너지	KRW	1,820	(4.2)	(5.2)	0.0	37.9	38.4	72.5	(9.9)	114	N/A	0.6	12.1	9.7	9.2	7.1
Average			**(2.9)**	**(10.8)**	**(3.7)**	**(4.8)**	**(10.3)**	**1.0**	**(11.3)**							
Gas Company																
Towngas China	HKD	3.8	(6.2)	(12.7)	(12.7)	(30.4)	(43.6)	(50.7)	(16.0)	1,298	19.6	7.9	1.6	0.7	18.2	10.2
Kulun	HKD	5.9	(7.3)	(11.8)	(8.3)	(6.9)	(16.2)	(22.0)	(14.1)	6,169	10.5	12.5	1.1	0.9	5.7	5.6
Beijing Enterprise	HKD	42.2	(4.0)	(8.2)	(8.9)	(14.1)	(23.5)	(31.4)	(10.2)	6,969	16.1	9.5	1.4	0.9	21.3	14.3
ENN Energy	HKD	34.4	(5.8)	(13.9)	(10.3)	(23.2)	(24.6)	(29.0)	(16.8)	4,799	12.9	12.3	3.2	2.2	9.8	8.4
China Resources Gas	HKD	19.2	(5.6)	(14.1)	(10.3)	(14.1)	(10.9)	(6.3)	(17.2)	5,492	17.7	14.2	2.8	2.3	10.6	8.9
China Gas Holdings	HKD	10.0	(0.6)	(6.0)	(1.4)	(18.2)	(15.5)	(20.3)	(10.2)	6,424	22.6	13.4	3.8	2.3	17.9	11.0
Shenzen Gas	HKD	12.2	(6.5)	(13.4)	(7.7)	2.5	(6.0)	6.1	(15.2)	2,976	8.8	11.2	1.2	1.2	9.1	8.3
Shann Xi	CNY	10.9	(3.5)	(6.4)	(10.0)	(9.8)	(36.5)	(1.7)	(13.5)	1,844	22.0	19.0	2.7	#N/A N/A	12.1	#N/A N/A
Suntien	HKD	1.1	(5.9)	(6.7)	2.8	(25.8)	(27.3)	(41.7)	(9.7)	536	14.2	8.6	0.7	0.5	8.5	7.5
China Oil & Gas	HKD	0.5	0.0	(1.9)	(8.8)	0.0	(21.2)	(43.9)	(1.9)	390	15.7	11.3	1.4	0.7	8.0	6.4
Average			**(4.5)**	**(9.5)**	**(7.6)**	**(14.0)**	**(22.5)**	**(24.1)**	**(12.5)**							
EV																
LG화학	KRW	322,500	(2.3)	(5.6)	(1.2)	11.6	24.5	80.7	(1.8)	17,685	15.3	17.7	1.0	1.8	5.4	7.2
삼성SDI	KRW	111,500	(1.3)	(0.9)	(13.2)	1.4	2.8	(3.5)	(2.2)	6,344	44.4	25.4	0.7	0.7	13.8	11.7
Panasonic	JPY	1156.0	0.0	(5.1)	(9.7)	(15.5)	(26.6)	(16.6)	(6.8)	24,072	22.5	13.8	1.8	1.3	4.4	3.9
GS Yuasa	JPY	424.0	0.0	(4.5)	(8.2)	(17.3)	(7.8)	(15.7)	(6.2)	1,489	22.6	13.2	1.6	1.1	9.5	6.6
NEC	JPY	363.0	0.0	(3.7)	(6.4)	(8.8)	(0.8)	5.8	(5.7)	8,026	24.4	13.3	1.2	1.1	6.3	6.4
BYD Auto	CNY	57.9	(2.6)	(1.5)	(6.0)	(5.0)	7.0	50.6	(10.1)	17,983	135.0	62.4	2.4	5.0	18.1	19.8
Tesla Motors	USD	207.9	(1.5)	(7.0)	(4.2)	(5.8)	(19.8)	0.6	(13.4)	27,218	#N/A N/A	#N/A N/A	30.7	24.0	630.8	123.1
Kandi Technologies	USD	8.7	(3.2)	(18.4)	(8.5)	25.5	14.6	(33.3)	(20.0)	410	48.3	#N/A N/A	3.1	#N/A N/A	61.3	#N/A N/A
Average			**(1.4)**	**(5.8)**	**(7.2)**	**(1.8)**	**(0.8)**	**8.6**	**(8.3)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임