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SKS Energy Daily

1. News Summary (3 page)

2016년 1월 18일

News		Conclusion
WTI comment	2003년 이후 처음으로 30달러 선 붕괴	
Headline	[주간가격] 에틸렌/프로필렌 모두 하락	가격하락과 저항 요인이 팽팽히 대립 중, 그러나 중장기 하락 가능성 높음
News 1.	[주간가격] polyester 계열 가격 하락	중장기적인 polyester 계열 공급과잉은 여전히 미해소, 추가약세 가능
News 2.	[주간가격] 합성고무 계열 약보합	fundamental은 여전히 공급과잉/수요약세를 벗어나지 못하고 있음
News 3.	미국 에틸렌 가격 전주대비 $50/t 하락한 $360/t, 7년래 최저치	아시아와 최대격차로 확대된 것은 차후 arbitrage 가능성을 더욱 높임
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	29.4	(5.7)	(11.3)	(17.2)	(37.7)	(36.4)
Dubai	$/bbl	26.2	0.7	(9.9)	(23.4)	(43.7)	(41.1)
Gasoline	$/bbl	49.6	(1.5)	(5.9)	(11.7)	(23.1)	(11.5)
Diesel	$/bbl	35.7	0.6	(10.3)	(20.9)	(39.6)	(41.8)
Complex margin	$/bbl	9.7	(0.3)	(0.6)	0.3	1.9	0.7
1M lagging	$/bbl	(2.4)	0.6	(2.0)	(2.3)	(10.2)	10.4
Petrochemical			%	%	%	%	%
Naphtha	$/t	329	(0.3)	(14.4)	(20.5)	(27.8)	(21.5)
Butadiene	$/t	730	0.0	0.0	4.3	(2.7)	9.0
HDPE	$/t	1,075	0.0	(1.4)	2.9	(10.4)	(5.7)
MEG	$/t	550	(0.9)	(5.5)	(3.5)	(16.7)	(21.4)
PX	$/t	667	(2.0)	(7.9)	(10.2)	(15.4)	(7.7)
SM	$/t	898	0.2	(3.1)	3.3	(4.7)	9.9
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.10	(1.8)	(15.0)	12.4	(25.2)	(40.4)
Natural rubber	$/t	1,050	(1.9)	1.0	(8.7)	(16.0)	(23.9)
Cotton	C/lbs	61.4	(0.8)	0.0	(3.6)	(3.6)	(4.3)

*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	01/13	$/kg	13.0	(0.5)	(4.0)	(10.6)	(32.2)
Module	01/13	$/W	0.55	(0.2)	(0.9)	(0.9)	(9.9)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	77.6	(1.9)	3.9	(2.3)	(4.8)	(12.8)
Shell	EUR	1,351	(2.9)	(1.7)	(7.7)	(24.1)	(34.6)
Petrochina	CNY	7.34	(3.8)	(8.1)	(12.3)	(16.8)	(40.3)
Gazprom	RUB	125.1	(4.4)	(8.0)	(6.9)	(12.3)	(14.9)
Petrobras	BRL	5.2	(9.1)	(17.5)	(30.3)	(35.4)	(44.6)
Refinery							
Phillips66	USD	78.5	(1.0)	4.3	(4.0)	(6.0)	32.8
Valero	USD	66.4	(1.4)	(2.7)	(2.8)	4.8	50.7
JX	JPY	433.6	(0.3)	(7.3)	(10.9)	(9.4)	1.8
Neste Oil	EUR	25.8	(2.8)	(2.6)	(3.2)	18.3	19.8

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	61.5	(4.8)	(3.2)	(12.2)	(14.2)	(13.9)
Dow Chemical	USD	43.0	(2.9)	(7.2)	(15.0)	(9.7)	(0.8)
SABIC	SAR	67.3	0.0	(0.6)	(20.0)	(23.5)	(14.2)
Formosa Pla.	TWD	75.5	0.4	5.7	7.1	(0.8)	2.0
Shin-Etsu	JPY	6,144	(0.4)	(0.6)	(6.3)	(7.9)	(20.9)
Renewable							
Wacker	EUR	65.8	(5.5)	(5.0)	(10.9)	(5.5)	(21.9)
Yingli	USD	3.50	(5.1)	(6.2)	(38.1)	(55.0)	(82.4)
Tesla	USD	205.0	(0.6)	(2.8)	(7.3)	(7.4)	6.8
BYD	CNY	58.1	(3.1)	(2.3)	(7.2)	(3.8)	48.5

4. Coverage Summary

	01/15	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,879	(1.1)	(2.0)	(4.6)	(7.5)	(10.0)	(1.8)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,112	(1.9)	(3.9)	(2.3)	0.1	(2.5)	38.6				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	312,000	(3.1)	(5.5)	(2.7)	8.0	19.8	75.8	매수	380,000	21.8	13.90	1.70
롯데케미칼	248,500	(2.9)	(6.0)	6.0	(9.1)	(11.3)	72.6	매수	290,000	16.7	11.05	1.04
한화케미칼	25,150	(4.6)	(7.2)	(6.5)	15.9	16.2	125.6	매수	30,000	19.3	8.89	0.72
금호석유화학	52,900	(4.5)	0.2	(0.9)	(16.8)	(27.0)	(36.6)	매수	70,000	32.3	11.70	1.08
KCC	399,000	(1.6)	(1.7)	(6.3)	(9.3)	(27.7)	(24.1)	매수	550,000	37.8	12.40	0.62
OCI	66,400	(3.8)	(7.4)	(13.0)	(23.8)	(43.2)	(8.2)	매수	85,000	28.0	15.80	0.66
SKC	31,650	0.5	(1.1)	(6.6)	(14.5)	(19.9)	15.7	매수	43,000	35.9	9.57	0.77
국도화학	55,800	(0.2)	(3.0)	(2.3)	(21.3)	(22.0)	32.5	매수	100,000	79.2	6.90	0.67
SK이노베이션	132,500	(1.5)	1.5	(0.4)	18.8	23.3	58.5	매수	140,000	5.7	7.24	0.70
S-Oil	79,100	0.0	0.5	3.5	13.8	27.2	57.9	매수	85,000	7.5	12.83	1.48
GS	48,000	(1.9)	(2.8)	(5.5)	(2.3)	(1.5)	25.0	매수	60,000	25.0	6.20	0.79
SK가스	65,200	(2.4)	(5.8)	(6.6)	(24.4)	(24.5)	(26.7)	매수	90,000	38.0	7.19	0.58
대우인터내셔널	13,800	(2.1)	(8.9)	(19.3)	(39.3)	(41.9)	(52.2)	매수	22,000	59.4	7.64	0.65
LG상사	28,400	(4.9)	(16.7)	(17.4)	(17.0)	(20.1)	(6.1)	매수	40,000	40.8	9.15	0.74

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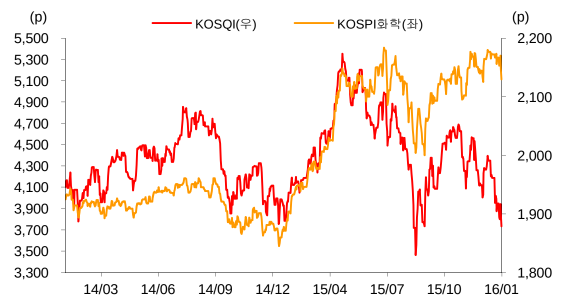
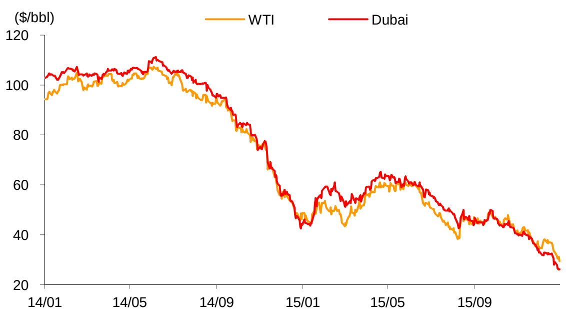
Key Chart

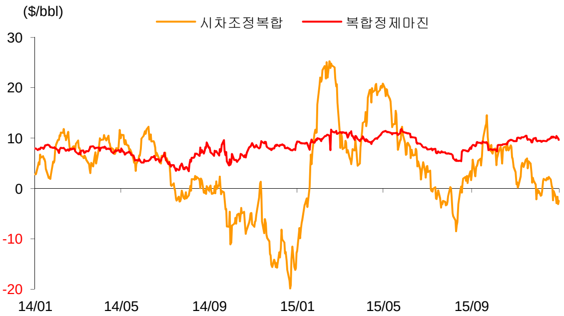
KOSPI/KOSPI화학



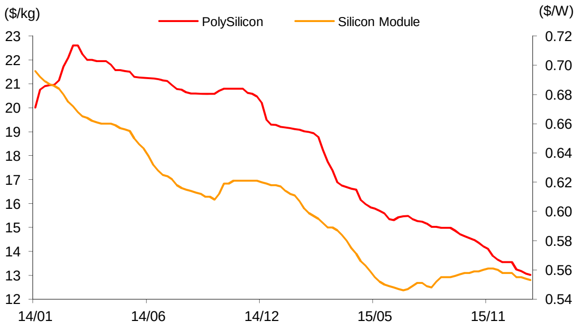
WTI/Dubai



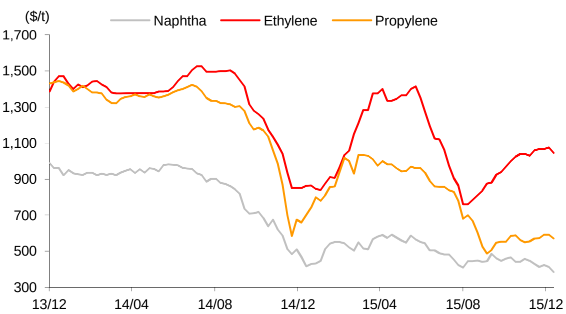
Complex & 1M lagging margin



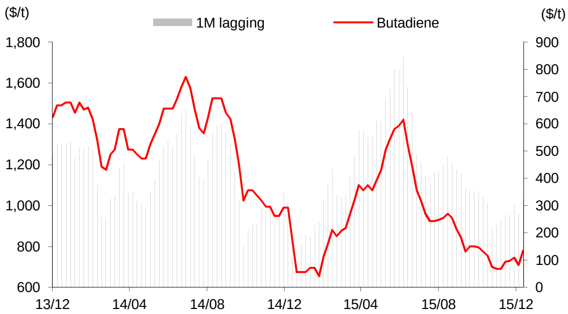
Polysilicon & Module prices



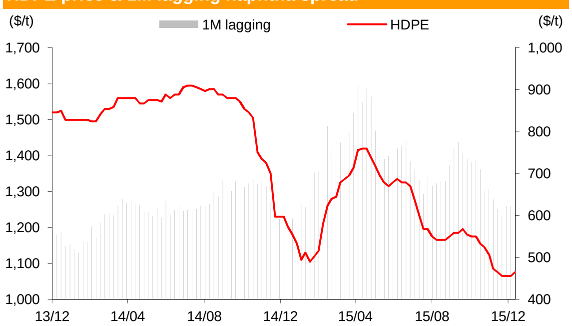
Naphtha/Ethylene/Propylene prices



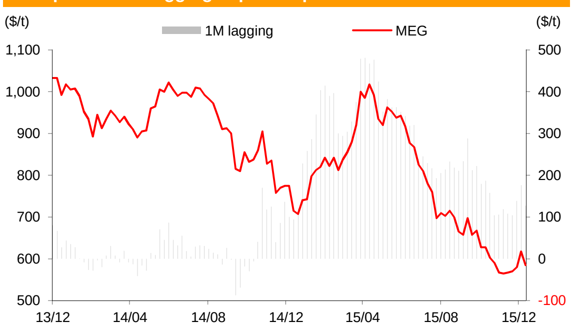
Butadiene price & 1M lagging naphtha spread



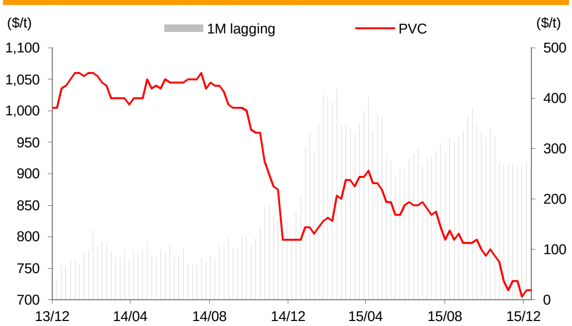
HDPE price & 1M lagging naphtha spread



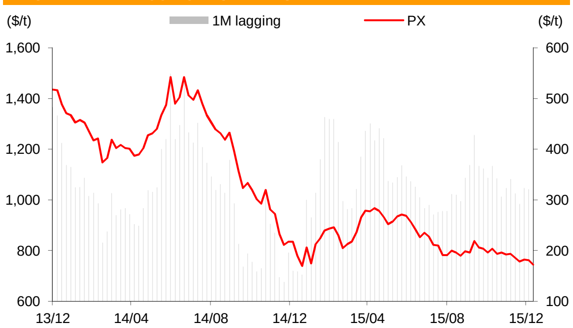
MEG price & 1M lagging naphtha spread



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	[주간가격] 에틸렌/프로필렌 모두 하락
결론	가격하락과 저항 요인이 팽팽히 대립 중, 그러나 중장기 하락 가능성 높음
세부	
	1) Ethylene $1,005/t(WoW –$80/t), Propylene $546/t(WoW –$9/t)
	2) 이란 제재 완전해제, 단기간 내 석유/화학 물량 압박우려로 약세
	3) 또한 일부 downstream 업체 마진 압박으로 에틸렌 가격하락압력 있음
	4) 다만 에틸렌은 여전히 타이트한 수급으로 가격하락에 저항 작용 중임
	5) 가격하락과 저항 요인이 팽팽히 대립 중, 그러나 중장기 하락 가능성 높음

WTI Comment	(출처: 연합뉴스)
제목	2003년 이후 처음으로 30달러 선 붕괴
상승 요인	
하락 요인	이란 제재 해제 임박 중국 증시 금요일 3.55% 폭락

Issue 1	(출처: Platts)
제목	[주간가격] polyester 계열 가격 하락
결론	중장기적인 polyester 계열 공급과잉은 여전히 미해소, 추가약세 가능
세부	
	1) MEG $550/t(WoW –$32/t), PX $667.3/t(–$57.3/t), PTA $546/t(WoW –$18/t)
	2) 유가하락, 재고상승, 수요약세로 인한 가격하락압력 지속 작용 중임
	3) 동남아시아에서는 PX 트러블 설비들의 정상화로 가격하락 더 크게 작용
	4) 신규설비도 지속적으로 가세 중, 수급악화요인도 여전함
	5) 중장기적인 polyester 계열 공급과잉은 여전히 미해소, 추가약세 가능

Issue 2	(출처: Platts)
제목	[주간가격] 합성고무 계열 약보합
결론	fundamental은 여전히 공급과잉/수요약세를 벗어나지 못하고 있음
세부	
	1) 부타디엔 $730/t(WoW –), SBR $1,195/t(WoW –$5/t)
	2) 12월말 발생했던 싱가폴 Shell BD 18.6만톤/년의 트러블 요인 지속
	3) 그러나 공급물량 충분하고 유가하락 요인도 있기에 가격상승은 제한
	4) 합성고무 역시 최근 가격상승있었지만 수요는 정말 좋지 못함
	5) fundamental은 여전히 공급과잉/수요약세를 벗어나지 못하고 있음

Issue 3	(출처: Platts)
제목	미국 에틸렌 가격 전주대비 $50/t 하락한 $360/t, 7년래 최저치
결론	아시아와 최대격차로 확대된 것은 차후 arbitrage 가능성을 더욱 높임
세부	
	1) 유가약세 현상이 지속됨과 동시에 충분한 재고물량도 부담되며 하락세
	2) 16년 1분기 다수설비 정기보수 앞두고 가동률 끌어올린 것도 원인임
	3) 독특한 부분은 아시아의 $1,005/t 대비 가격이 무려 $645/t이 낮다는 것임
	4) 그럼에도 불구하고 arbitrage 발생하지 않고 있음
	5) 아시아와 최대격차로 확대된 것은 차후 arbitrage 가능성을 더욱 높임

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	0.916	0.920	0.915	0.915	0.878	0.913	0.860	0.921	0.753	0.754	0.901
	Change, %		(0.4)	0.1	0.2	4.3	0.3	6.6	(0.5)	(3.9)	13.7	1.7
	USD/JPY	117.0	118.1	117.3	121.7	118.9	123.8	116.2	120.6	97.7	105.9	121.1
	Change, %		(0.9)	(0.2)	(3.9)	(1.6)	(5.5)	0.7	(3.0)	21.5	13.8	(3.4)
	USD/KRW	1,213.2	1,213.3	1,197.8	1,183.5	1,130.3	1,143.6	1,083.2	1,172.6	1,094.6	1,053.0	1,131.2
	Change, %		(0.0)	1.3	2.5	7.3	6.1	12.0	3.5	50.3	3.3	7.2
Agriculture	Corn	363.3	358.0	357.0	377.3	375.5	429.5	380.0	358.8	579.2	415.6	376.8
	Change, %		1.5	1.8	(3.7)	(3.3)	(15.4)	(4.4)	1.3	(39.6)	(5.9)	(3.6)
	Soybean	879.0	896.0	879.5	867.3	905.3	1,025.0	991.0	871.3	1,407.0	1,245.5	945.4
	Change, %		(1.9)	(0.1)	1.4	(2.9)	(14.2)	(11.3)	0.9	(7.5)	(22.3)	(7.0)
	Wheat	473.8	468.8	478.5	494.3	502.5	566.8	532.8	470.0	684.3	588.0	508.1
	Change, %		1.1	(1.0)	(4.1)	(5.7)	(16.4)	(11.1)	0.8	(22.2)	(2.6)	(6.8)
	Rice	10.7	10.9	11.6	10.9	12.3	11.1	11.3	11.6	15.5	14.0	11.1
	Change, %		(1.8)	(8.2)	(2.2)	(13.2)	(3.6)	(5.9)	(7.8)	4.4	(25.9)	(3.5)
	Oats	198.8	200.3	210.8	227.8	234.5	255.5	281.8	217.3	367.5	373.1	250.2
	Change, %		(0.7)	(5.7)	(12.7)	(15.2)	(22.2)	(29.5)	(8.5)	1.9	(14.3)	(20.6)
MYR/mt	Palm Oil	2,200.0	2,262.0	2,263.0	2,186.0	2,269.0	2,198.0	2,373.0	2,398.0	2,405.0	2,415.1	2,190.3
	Change, %		(2.7)	(2.8)	0.6	(3.0)	0.1	(7.3)	(8.3)	13.3	(12.8)	0.4
	Cocoa	2,905.0	2,857.0	3,017.0	3,328.0	3,104.0	3,356.0	2,977.0	3,211.0	2,403.9	3,006.8	3,091.6
	Change, %		1.7	(3.7)	(12.7)	(6.4)	(13.4)	(2.4)	(9.5)	21.2	7.4	(6.0)
	Cotton	61.4	61.9	61.4	63.3	63.4	65.3	59.5	63.3	83.3	76.4	63.3
	Change, %		(0.8)	0.0	(3.0)	(3.2)	(6.0)	3.2	(3.0)	12.6	(28.8)	(2.9)
	Sugar	14.9	14.9	14.5	14.6	14.1	12.5	15.4	15.2	17.5	16.3	13.1
	Change, %		0.3	3.2	2.3	5.6	19.7	(2.8)	(2.1)	(15.9)	(11.5)	13.6
	Coffee	114.9	115.9	119.0	115.7	133.7	128.0	176.7	126.7	126.0	177.1	132.6
	Change, %		(0.9)	(3.4)	(0.6)	(14.1)	(10.2)	(35.0)	(9.3)	(23.0)	50.5	(13.4)
Energy	WTI	29.4	31.2	33.2	37.4	46.4	51.4	46.3	37.0	98.0	92.9	48.8
	Change, %		(5.7)	(11.3)	(21.2)	(36.6)	(42.8)	(36.4)	(20.6)	7.2	(45.9)	(39.8)
	Brent	28.9	31.0	33.6	38.5	48.7	57.1	47.7	37.3	108.7	99.5	53.7
	Change, %		(6.7)	(13.7)	(24.7)	(40.6)	(49.3)	(39.3)	(22.4)	(0.3)	(48.3)	(46.1)
	Natural Gas	2.1	2.1	2.5	1.8	2.5	2.9	3.2	2.3	3.7	4.3	2.6
	Change, %		(1.8)	(15.0)	15.3	(14.4)	(28.0)	(33.5)	(10.1)	26.2	(31.7)	(20.1)
	Ethanol	1.4	1.3	1.3	1.4	1.5	1.6	1.3	1.4	2.3	2.1	1.5
	Change, %		1.9	1.1	(6.6)	(11.3)	(14.6)	3.2	(3.6)	(12.7)	(14.9)	(10.6)
	RBOB Gasoline	102.1	106.8	112.8	124.4	130.7	185.9	129.9	126.7	285.0	262.6	163.6
	Change, %		(4.4)	(9.4)	(17.9)	(21.9)	(45.1)	(21.4)	(19.4)	(0.9)	(48.5)	(37.6)
	Coal	43.2	43.2	43.4	43.1	41.9	41.1	46.4	43.3	56.1	57.5	45.2
	Change, %		0.0	(0.3)	0.4	3.1	5.3	(6.9)	(0.2)	(1.0)	(15.5)	(4.3)
Metal	Gold	1,088.9	1,078.5	1,104.1	1,061.2	1,183.1	1,149.4	1,262.7	1,061.4	1,410.4	1,266.5	1,160.6
	Change, %		1.0	(1.4)	2.6	(8.0)	(5.3)	(13.8)	2.6	(28.0)	(1.3)	(6.2)
	Silver	13.9	13.8	13.9	13.8	16.1	15.1	17.0	13.8	23.8	19.1	15.7
	Change, %		0.9	(0.1)	1.0	(13.7)	(7.8)	(17.9)	0.8	(35.8)	(18.9)	(11.4)
	Platinum	829.0	836.0	880.0	855.3	1,004.7	1,021.8	1,259.9	891.1	1,485.7	1,384.6	1,055.7
	Change, %		(0.8)	(5.8)	(3.1)	(17.5)	(18.9)	(34.2)	(7.0)	(11.2)	(11.5)	(21.5)
	Palladium	494.5	493.4	494.9	567.3	705.0	643.2	766.8	563.0	725.9	803.4	691.9
	Change, %		0.2	(0.1)	(12.8)	(29.9)	(23.1)	(35.5)	(12.2)	1.7	11.4	(28.5)
	Copper	4,331.0	4,415.5	4,485.0	4,565.0	5,308.0	5,531.0	5,630.0	4,705.0	7,352.6	6,828.1	5,503.1
	Change, %		(1.9)	(3.4)	(5.1)	(18.4)	(21.7)	(23.1)	(7.9)	(7.2)	(14.4)	(21.3)
	Uranium	34.8	34.8	34.5	35.9	37.8	36.3	36.5	34.4	38.5	33.5	36.9
	Change, %		0.0	0.7	(3.2)	(8.1)	(4.1)	(4.8)	1.0	(20.9)	2.5	(5.7)
	HR Coil	395.0	392.0	401.0	364.0	417.0	469.0	590.0	391.0	630.4	653.2	461.5
	Change, %		0.8	(1.5)	8.5	(5.3)	(15.8)	(33.1)	1.0	3.1	(10.4)	(14.4)
	Scrap	250.0	250.0	250.0	250.0	190.0	270.0	355.0	250.0	396.9	401.3	252.9
	Change, %		0.0	0.0	0.0	31.6	(7.4)	(29.6)	0.0	(1.2)	(16.5)	(1.2)
	Zinc	1,476.0	1,511.0	1,509.0	1,504.0	1,827.0	2,077.5	2,063.0	1,609.0	1,940.3	2,165.0	1,941.9
	Change, %		(2.3)	(2.2)	(1.9)	(19.2)	(29.0)	(28.5)	(8.3)	(1.2)	6.0	(24.0)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		01/15	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	**WTI**	29.4	31.2	33.2	35.5	47.3	50.2	46.3	37.0	93.1	48.8	33.0
	Change, %		(5.7)	(11.3)	(17.2)	(37.7)	(41.3)	(36.4)	(20.6)	(68.4)	(39.7)	(10.9)
	Dubai	26.2	26.0	29.1	34.2	46.6	55.4	44.5	32.2	96.7	50.8	28.9
	Change, %		0.7	(9.9)	(23.4)	(43.7)	(52.7)	(41.1)	(18.5)	(72.9)	(48.4)	(9.2)
Crude Oil	**Gasoline(휘발유)**	49.6	50.3	52.7	56.1	64.5	77.2	56.0	54.8	110.9	69.5	52.6
Product	*Change, %*		(1.5)	(5.9)	(11.7)	(23.1)	(35.8)	(11.5)	(9.5)	(55.3)	(28.7)	(5.8)
	Kerosene(등유)	37.1	37.3	40.7	46.7	58.9	65.9	61.5	44.2	112.6	64.7	40.2
	Change, %		(0.3)	(8.6)	(20.4)	(36.9)	(43.7)	(39.6)	(16.0)	(67.0)	(42.6)	(7.7)
	Diesel(경유)	35.7	35.5	39.8	45.1	59.1	65.1	61.3	43.2	112.8	64.8	39.0
	Change, %		0.6	(10.3)	(20.9)	(39.6)	(45.2)	(41.8)	(17.5)	(68.4)	(44.9)	(8.6)
	Bunker-C	21.6	21.4	23.9	27.6	37.8	48.9	41.3	25.3	86.5	45.3	23.6
	Change, %		0.8	(9.6)	(21.7)	(42.9)	(55.9)	(47.7)	(14.7)	(75.0)	(52.3)	(8.4)
	Naphtha	35.7	36.2	41.6	43.6	48.4	53.7	43.1	43.5	94.3	52.6	40.6
	Change, %		(1.3)	(14.1)	(18.1)	(26.2)	(33.5)	(17.0)	(17.8)	(62.1)	(32.1)	(12.0)
Dubai	**Gasoline(휘발유)**	23.4	24.3	23.6	21.9	17.9	21.8	11.6	22.6	14.2	18.7	23.8
Spread	*Change*		(0.9)	(0.2)	1.5	5.5	1.5	11.8	0.8	9.1	4.6	(0.4)
	Kerosene(등유)	10.9	11.2	11.5	12.4	12.3	10.5	17.1	12.0	15.9	14.0	11.4
	Change		(0.3)	(0.6)	(1.5)	(1.4)	0.4	(6.1)	(1.1)	(5.0)	(3.0)	(0.5)
	Diesel(경유)	9.5	9.4	10.7	10.8	12.5	9.7	16.9	11.0	16.0	14.0	10.2
	Change		0.0	(1.2)	(1.4)	(3.0)	(0.3)	(7.4)	(1.6)	(6.6)	(4.5)	(0.7)
	Bunker-C	(4.6)	(4.6)	(5.2)	(6.7)	(8.8)	(6.5)	(3.2)	(6.9)	(10.3)	(5.5)	(5.3)
	Change		0.0	0.6	2.0	4.2	1.8	(1.4)	2.3	5.6	0.9	0.7
	Naphtha	9.5	10.2	12.5	9.4	1.8	(1.7)	(1.4)	11.3	(2.4)	1.8	11.7
	Change		(0.7)	(3.0)	0.1	7.7	11.2	10.9	(1.8)	11.9	7.7	(2.2)
Refining	**Simple(단순)**	3.9	4.0	4.0	3.0	1.3	1.6	4.5	3.2	(0.1)	3.3	3.9
Margin	*Change*		(0.2)	(0.2)	0.8	2.6	2.3	(0.7)	0.7	4.0	0.6	(0.0)
	Complex(복합)	9.7	10.0	10.3	9.3	7.7	7.8	9.0	9.7	7.1	9.3	10.1
	Change		(0.3)	(0.6)	0.3	1.9	1.9	0.7	(0.0)	2.6	0.4	(0.4)
	Complex(lagging)	(2.4)	(3.1)	(0.5)	(0.1)	7.7	3.6	(12.8)	2.3	2.2	6.5	(0.9)
	Change		0.6	(2.0)	(2.3)	(10.2)	(6.0)	10.4	(4.8)	(4.7)	(8.9)	(1.6)

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			01/15	01/14	01/13	01/12	01/11	01/08	01/07	01/06	01/05	01/04
Spot Price	**Naphtha**	CFR Japan	328.5	329.5	343.9	343.5	361.4	383.9	377.3	409.9	422.9	416.5
	Ethylene	CFR SE Asia	1,005.0	1,005.0	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	546.0	551.0	555.0	555.0	555.0	555.0	580.0	590.0	590.0	590.0
	Butadiene	FOB Korea	730.0	730.0	730.0	730.0	730.0	730.0	715.0	710.0	710.0	700.0
	HDPE	CFR FE Asia	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,090.0	1,075.0	1,075.0	1,075.0	1,075.0
	LDPE	CFR FE Asia	1,095.0	1,095.0	1,095.0	1,095.0	1,120.0	1,110.0	1,090.0	1,090.0	1,075.0	1,075.0
	LLDPE	CFR FE Asia	1,070.0	1,070.0	1,060.0	1,065.0	1,080.0	1,070.0	1,060.0	1,060.0	1,060.0	1,060.0
	MEG	CFR China	550.0	555.0	546.0	568.0	576.0	582.0	577.0	591.0	583.0	584.0
	PP	CFR FE Asia	805.0	805.0	805.0	805.0	780.0	780.0	800.0	815.0	815.0	815.0
	PX	CFR China	667.3	680.7	693.0	690.7	709.7	724.7	723.0	742.7	744.7	743.3
	PTA	CFR China	546.0	551.0	550.0	555.0	562.0	564.0	571.0	573.0	573.0	571.0
	Benzene	FOB Korea	542.0	541.0	537.0	539.0	554.0	574.0	565.0	588.0	590.0	595.0
	Toluene	FOB Korea	535.0	549.0	548.5	544.0	562.0	583.0	577.0	608.0	607.0	614.0
	Xylene	FOB Korea	559.0	559.0	565.0	572.0	595.0	614.0	612.0	627.0	637.0	637.0
	SM	FOB Korea	898.0	896.0	896.0	896.0	911.0	927.0	927.0	931.0	914.0	908.0

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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Global peers

	Currency	01/15	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	43.0	(2.9)	(7.2)	(15.0)	(9.7)	(17.5)	(0.8)	(16.6)	49,774	13.1	12.3	2.3	2.1	7.3	7.4
Du Pont	USD	54.1	(5.8)	(11.6)	(18.7)	(4.6)	(8.3)	(22.2)	(18.8)	47,405	19.5	17.0	4.6	4.6	10.5	10.2
Eastman	USD	61.7	(3.5)	(3.0)	(8.2)	(11.7)	(22.1)	(11.5)	(8.5)	9,175	8.5	8.1	2.2	1.9	7.0	6.9
BASF	EUR	61.5	(4.8)	(3.2)	(12.2)	(14.2)	(26.4)	(13.9)	(13.0)	61,862	12.3	11.9	1.9	1.8	6.6	6.6
Akzo Nobel	EUR	57.4	(1.1)	(0.9)	(7.1)	(4.7)	(16.5)	(3.8)	(7.0)	15,642	14.4	13.6	2.4	2.2	7.8	7.4
Arkema	EUR	55.4	(3.8)	(2.2)	(12.0)	(12.8)	(18.8)	(4.5)	(14.3)	4,514	12.6	10.9	1.1	1.1	5.5	5.2
Lanxess	EUR	36.1	(5.6)	(4.4)	(15.9)	(20.4)	(34.9)	4.3	(15.5)	3,614	16.1	12.5	1.5	1.3	5.2	4.8
Sumitomo Chemical	JPY	573	(0.5)	(3.7)	(13.7)	(16.2)	(20.2)	23.5	(18.3)	8,123	11.0	9.4	1.1	1.0	6.9	6.7
Mitsubishi Chemical	JPY	675	(1.0)	(3.8)	(10.9)	(2.1)	(11.7)	15.3	(12.8)	8,707	14.1	10.2	1.0	0.9	6.2	6.1
Shin-Etsu Chemical	JPY	6,144	(0.4)	(0.6)	(6.3)	(7.9)	(17.9)	(20.9)	(7.1)	22,736	17.9	16.7	1.3	1.2	6.1	5.7
Asahi Kasei	JPY	763	(0.7)	(3.5)	0.3	(3.7)	(20.1)	(31.9)	(7.3)	9,167	11.4	10.2	0.9	0.9	5.3	5.2
JSR	JPY	1,700	(0.5)	(3.1)	(6.9)	(8.6)	(19.6)	(16.2)	(10.5)	3,291	13.1	11.9	1.0	1.0	5.3	4.9
Nitto Denko	JPY	7,100	(1.3)	(6.2)	(15.6)	(9.2)	(28.4)	3.8	(20.3)	10,565	13.0	12.4	1.8	1.6	6.0	5.7
SABIC	SAR	67.3	0.0	(0.6)	(20.0)	(23.5)	(33.9)	(14.2)	(12.1)	53,823	10.5	10.5	1.2	1.2	5.8	6.0
Yansab	SAR	25.9	0.0	(1.1)	(35.4)	(44.8)	(51.1)	(38.8)	(20.0)	3,890	13.2	9.7	0.9	0.9	7.3	6.5
Formosa Plastics	TWD	75.5	0.4	5.7	7.1	(0.8)	4.4	2.0	(1.9)	14,287	16.2	16.2	1.6	1.5	23.7	23.5
Formosa Fiber	TWD	71.0	0.9	4.3	5.3	(4.6)	(4.7)	8.4	(4.1)	12,371	16.9	16.5	1.4	1.3	13.2	13.6
Nan Ya Plastics	TWD	56.7	0.0	(0.4)	(1.2)	(13.2)	(18.1)	(11.8)	(7.0)	13,368	12.5	13.2	1.4	1.3	12.7	12.9
Sinopec Shanghai	CNY	5.31	(7.7)	(7.7)	(15.7)	(28.8)	(20.9)	24.1	(18.1)	7,183	20.7	17.8	3.0	2.6	8.8	8.1
Sinopec Yizheng(Fibe	CNY	6.08	(4.9)	(13.4)	(27.2)	(41.1)	(25.7)	14.3	(25.5)	11,607	#N/A N/A	#N/A N/A	3.7	3.9	27.9	21.6
Reliance	INR	1,073	1.1	4.6	10.0	18.8	6.1	24.2	5.7	51,209	12.9	11.5	1.4	1.3	10.1	8.6
Industries Qatar	QAR	98.9	0.0	(4.9)	(0.1)	(21.3)	(26.4)	(31.8)	(11.0)	16,431	11.8	11.7	1.8	1.7	47.9	49.4
PTT Chemical	THB	45.8	(5.7)	(2.7)	(12.0)	(24.7)	(33.9)	(14.5)	(8.5)	5,618	7.7	7.0	0.8	0.8	5.4	5.2
Petronas	MYR	7.0	0.3	(7.3)	2.9	7.9	9.7	36.7	(3.7)	12,640	20.5	18.2	2.3	2.2	10.3	9.2
LG화학	KRW	312,000	(3.1)	(5.5)	(0.3)	8.5	19.5	74.8	(5.0)	16,944	18.3	14.8	1.8	1.6	6.9	6.2
롯데케미칼	KRW	248,500	(2.9)	(6.0)	12.4	(8.3)	(10.6)	67.9	2.1	6,980	8.1	7.7	1.1	1.0	4.0	3.7
한화케미칼	KRW	25,150	(4.6)	(7.2)	1.2	14.3	15.6	122.6	(7.5)	3,338	17.1	10.9	0.9	0.8	10.3	8.6
금호석유	KRW	52,900	(4.5)	0.2	(1.1)	(18.0)	(27.8)	(37.8)	1.5	1,321	12.6	10.8	1.1	1.0	9.1	7.7
SKC	KRW	31,650	0.5	(1.1)	(4.5)	(15.7)	(13.5)	13.4	(6.4)	954	3.9	8.1	0.8	0.7	7.3	7.2
국도화학	KRW	55,800	(0.2)	(3.0)	(2.3)	(20.1)	(21.1)	32.5	(5.9)	266	5.9	6.7	0.8	0.7	4.0	3.7
효성	KRW	2,380	(0.4)	(5.0)	(7.4)	(17.6)	(24.4)	(24.9)	(8.8)	3,166	9.0	7.0	1.2	1.0	6.9	6.0
Average			**(2.0)**	**(3.4)**	**(7.4)**	**(11.6)**	**(16.7)**	**5.4**	**(9.9)**							
Refinery																
Valero	USD	66.4	(1.4)	(2.7)	(2.8)	4.8	1.9	50.7	(6.1)	31,977	7.7	8.6	1.5	1.3	4.0	4.5
Conoco Phillips	USD	39.4	(4.6)	(9.1)	(22.2)	(28.7)	(32.6)	(35.9)	(15.7)	48,596	#N/A N/A	#N/A N/A	1.1	1.2	8.1	7.2
Formosa Petrochemi	TWD	78.8	(0.3)	3.7	5.3	(2.5)	1.9	20.3	0.0	22,315	17.8	18.6	2.8	2.8	12.2	12.4
Tesoro	USD	92.7	(3.9)	(8.8)	(9.1)	(10.4)	(5.1)	36.4	(12.0)	11,161	6.5	9.6	2.1	1.8	4.2	5.3
Marathon Petroleum	USD	41.4	(5.1)	(10.3)	(15.7)	(17.3)	(28.0)	7.8	(20.1)	22,076	7.0	7.8	1.7	1.6	4.0	4.2
Devon Energy	USD	24.5	(5.7)	(14.1)	(23.2)	(46.4)	(55.3)	(57.7)	(23.5)	10,065	9.9	#N/A N/A	0.8	0.9	4.9	7.4
Hollyfrontier	USD	34.0	(6.4)	(9.5)	(17.3)	(32.3)	(24.7)	12.6	(14.8)	6,215	7.0	8.5	1.1	1.1	3.8	4.4
Phillips 66	USD	78.5	(1.0)	4.3	(4.0)	(6.0)	(4.0)	32.8	(4.1)	41,859	10.2	10.9	1.8	1.6	6.0	6.5
Murphy Oil	USD	17.2	(6.8)	(11.1)	(24.0)	(41.3)	(56.7)	(62.3)	(23.6)	2,952	#N/A N/A	#N/A N/A	0.5	0.5	3.7	4.6
JX Holdings	JPY	433.6	(0.3)	(7.3)	(10.9)	(9.4)	(17.7)	1.8	(14.7)	9,266	#N/A N/A	7.6	0.6	0.5	15.4	9.8
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	(16.3)	5.1	0.0	1,151	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Idemitsu	JPY	1,726.0	0.7	(6.3)	(9.8)	(13.3)	(29.7)	(10.9)	(10.9)	2,365	17.6	5.8	0.5	0.4	12.8	8.7
Tonengeneral	JPY	974.0	1.6	(3.7)	(12.6)	(21.4)	(17.7)	(2.7)	(4.7)	4,714	26.5	9.9	1.4	1.3	36.5	9.7
Nesteoil	EUR	25.8	(2.8)	(2.6)	(3.2)	18.3	6.0	19.8	(6.6)	0	10.9	10.7	2.2	1.9	7.6	7.0
Ashland	USD	97.1	(1.3)	(0.9)	(5.5)	(8.2)	(18.9)	(18.3)	(5.5)	6,139	14.1	13.0	2.1	2.2	7.8	7.6
Fuchs Petrolub	EUR	38.2	(3.7)	(4.5)	(11.4)	(7.0)	(4.9)	12.5	(12.2)	5,393	22.0	20.1	5.3	4.5	12.6	11.5
SK이노베이션	KRW	132,500	(1.5)	1.5	8.6	16.7	21.6	60.2	1.9	10,040	11.1	9.1	0.8	0.7	6.5	6.2
S-Oil	KRW	79,100	0.0	0.5	10.5	14.8	24.0	57.6	(0.4)	7,298	12.5	10.3	1.7	1.5	7.8	7.2
GS	KRW	48,000	(1.9)	(2.8)	(1.7)	(3.8)	(0.9)	25.3	(5.3)	3,655	8.6	6.9	0.7	0.7	7.5	6.8
Average			**(2.3)**	**(4.4)**	**(7.8)**	**(10.2)**	**(13.5)**	**8.2**	**(9.4)**							

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

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Global peers

	Currency	01/15	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	78	(1.9)	3.9	(2.3)	(4.8)	(6.3)	(12.8)	(0.5)	322,961	20.1	23.0	1.9	1.9	8.3	8.5
BP	GBP	338	(2.7)	2.9	0.1	(10.9)	(20.8)	(13.9)	(4.5)	88,739	13.5	15.7	0.9	0.9	5.1	4.8
Shell	EUR	1,351	(2.9)	(1.7)	(7.7)	(24.1)	(26.0)	(34.6)	(11.5)	124,066	11.5	11.4	0.7	0.7	3.9	3.9
Chevron	USD	84	(2.1)	1.9	(9.8)	(7.8)	(11.2)	(18.5)	(7.0)	157,470	24.5	27.5	1.0	1.1	6.4	6.2
Total	EUR	38	(3.0)	0.8	(10.9)	(16.5)	(16.8)	(10.2)	(8.7)	101,133	9.9	12.5	1.0	1.0	5.3	5.6
Sinopec	CNY	4	(3.9)	(6.5)	(8.8)	(13.1)	(39.0)	(35.4)	(10.1)	78,021	14.2	11.3	0.8	0.8	5.1	4.7
Petrochina	CNY	7	(3.8)	(8.1)	(12.3)	(16.8)	(45.7)	(40.3)	(12.1)	192,657	29.7	30.2	1.1	1.1	6.9	6.8
CNOOC	CNY	13	(4.8)	(7.3)	(19.5)	(27.2)	(26.9)	(36.0)	(17.5)	6,986	32.1	32.6	1.3	1.2	11.0	10.8
Gazprom	RUB	125	(4.4)	(8.0)	(6.9)	(12.3)	(12.3)	(14.9)	(8.1)	38,052	2.6	2.5	0.2	0.2	2.4	2.7
Rosneft	RUB	232	(2.3)	(8.0)	(7.0)	(10.2)	0.7	5.5	(8.4)	31,605	5.9	5.6	0.7	0.7	3.1	3.2
Anadarko	USD	32	(8.5)	(21.1)	(34.4)	(56.1)	(57.4)	(57.6)	(34.1)	16,271	#N/A N/A	#N/A N/A	1.1	1.2	7.3	7.9
Petrobras	BRL	5	(9.1)	(17.5)	(30.3)	(35.4)	(56.2)	(44.6)	(22.8)	19,485	8.3	5.4	0.3	0.3	5.9	5.5
Lukoil	USD	2,098	(4.2)	(11.8)	(14.3)	(9.6)	(14.7)	(19.9)	(10.6)	23,101	5.1	4.4	0.2	0.2	N/A	N/A
Kinder	USD	13	(7.0)	(12.0)	(17.9)	(59.7)	(65.4)	(68.1)	(12.9)	47,497	20.0	18.2	0.8	0.8	9.9	9.4
Statoil	NOK	103	0.2	(5.9)	(17.4)	(26.4)	(26.6)	(20.9)	(16.4)	37,339	16.4	16.5	0.9	0.9	2.4	2.5
BHP	AUD	15	1.3	(7.8)	(7.4)	(40.0)	(44.0)	(40.1)	(15.6)	51,670	31.6	21.0	0.9	0.9	6.2	5.4
PTT E&P	THB	44	(6.8)	(11.9)	(23.0)	(40.6)	(56.0)	(58.5)	(22.7)	4,829	8.0	9.2	0.4	0.4	1.4	1.5
Petronas gas	MYR	21	(0.6)	(1.6)	(2.9)	(5.4)	0.2	(1.1)	(5.5)	9,585	23.4	22.8	3.8	3.6	13.4	13.0
Chesapeake	USD	4	(4.0)	(19.8)	(5.3)	(57.4)	(68.5)	(80.6)	(20.9)	2,368	#N/A N/A	#N/A N/A	1.0	1.2	6.3	9.9
Noble Energy	USD	28	(5.0)	(10.4)	(15.8)	(24.1)	(28.7)	(35.7)	(16.1)	11,827	373.4	#N/A N/A	1.0	1.1	8.2	7.7
Average		**0**	**(3.8)**	**(7.5)**	**(12.7)**	**(24.9)**	**(31.1)**	**(31.9)**	**(13.3)**							
PV																
WACKER	EUR	65.8	(5.5)	(5.0)	(10.9)	(5.5)	(29.2)	(21.9)	(15.1)	3,760	19.7	17.3	1.4	1.4	4.7	4.4
GCL-Poly	HKD	1.1	(3.5)	(2.7)	(17.4)	(38.9)	(31.7)	(37.9)	(6.0)	2,598	8.2	6.4	0.8	0.7	8.0	6.9
REC	NOK	107.5	0.0	0.0	0.0	0.0	0.9	6.4	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	2.7	(2.8)	(19.6)	(44.6)	(70.5)	(91.2)	(85.6)	(46.2)	868	#N/A N/A	#N/A N/A	0.2	0.3	#N/A N/A	24.3
Canadian Solar	USD	18.8	(7.3)	(20.0)	(26.0)	(13.0)	(28.4)	(12.2)	(35.1)	1,052	7.6	7.0	1.3	1.0	7.9	5.8
JA Solar	USD	8.0	(6.0)	(8.0)	(12.9)	(6.9)	3.1	1.8	(17.5)	404	5.7	5.4	0.4	0.4	3.6	3.3
Trina Solar	USD	8.9	(8.5)	(18.2)	(15.7)	(20.0)	(12.7)	3.3	(19.4)	818	10.4	6.5	0.7	0.6	6.8	5.1
Solar City	USD	35.2	(5.2)	(27.9)	(12.1)	(24.5)	(33.0)	(28.5)	(31.0)	3,435	#N/A N/A	#N/A N/A	3.7	4.0	#N/A N/A	#N/A N/A
Yingli	USD	3.5	(5.1)	(6.2)	(38.1)	(55.0)	(63.5)	(82.4)	(22.7)	64	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	9.4	9.1
First Solar	USD	61.3	(0.7)	(6.6)	2.5	16.8	37.8	52.7	(7.1)	6,188	13.7	14.9	1.1	1.1	6.5	8.5
한화솔라원	USD	15.6	(7.7)	(24.8)	(36.1)	(11.5)	7.9	62.9	(28.7)	#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	66,400	(3.8)	(7.4)	(9.5)	(23.9)	(46.0)	(10.5)	(11.5)	1,298	7.7	14.2	0.5	0.5	11.7	9.4
웅진에너지	KRW	1,670	9.5	3.1	(2.3)	(0.6)	(23.7)	14.8	(3.5)	101	N/A	0.5	0.5	11.7	9.4	9.0
신성솔라에너지	KRW	1,775	(1.7)	(6.6)	(3.8)	27.7	32.5	67.5	(12.1)	110	N/A	0.5	11.7	9.4	9.0	7.0
Average			**(3.5)**	**(10.7)**	**(16.2)**	**(16.1)**	**(19.8)**	**(5.0)**	**(18.3)**							
Gas Company																
Towngas China	HKD	3.8	0.5	(6.0)	(11.7)	(33.3)	(43.9)	(45.9)	(15.8)	1,295	7.9	7.1	0.7	0.6	10.2	8.8
Kulun	HKD	5.5	(5.2)	(14.7)	(14.3)	(17.0)	(22.8)	(28.9)	(20.9)	5,652	11.5	9.8	0.8	0.8	5.4	4.9
Beijing Enterprise	HKD	40.6	0.2	(7.6)	(9.6)	(18.9)	(26.9)	(34.0)	(13.6)	6,671	9.2	8.1	0.8	0.8	14.0	12.9
ENN Energy	HKD	34.5	(2.0)	(5.6)	(9.7)	(25.0)	(25.4)	(25.0)	(16.7)	4,783	12.3	10.6	2.2	1.9	8.4	7.4
China Resources Gas	HKD	19.5	0.4	(3.7)	(8.9)	(13.0)	(11.2)	8.2	(15.6)	5,573	14.5	12.4	2.3	2.0	9.1	7.9
China Gas Holdings	HKD	10.0	(0.4)	(0.6)	(2.3)	(21.3)	(21.3)	(16.1)	(10.2)	6,392	13.4	11.1	2.3	2.0	11.0	9.3
Shenzen Gas	HKD	12.4	(0.6)	(4.6)	(7.0)	0.8	(6.6)	9.0	(13.5)	3,020	11.5	11.0	1.2	1.1	8.4	9.1
Shann Xi	CNY	10.5	(3.8)	(6.9)	(15.2)	(19.9)	(30.0)	(4.8)	(16.6)	1,778	18.3	15.3	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Suntien	HKD	1.1	0.0	(8.4)	(5.2)	(29.7)	(31.4)	(39.1)	(12.1)	519	8.4	6.8	0.4	0.4	7.5	6.0
China Oil & Gas	HKD	0.5	(3.0)	(7.7)	(12.7)	(5.9)	(25.0)	(48.2)	(9.4)	359	10.4	7.5	0.7	0.6	6.2	5.1
Average			**(1.4)**	**(6.6)**	**(9.7)**	**(18.3)**	**(24.4)**	**(22.5)**	**(14.4)**							
EV																
LG화학	KRW	312,000	(3.1)	(5.5)	(0.3)	8.5	19.5	74.8	(5.0)	16,944	17.3	13.6	1.7	1.6	7.0	6.5
삼성SDI	KRW	109,500	0.0	(3.1)	(14.5)	0.0	0.5	(3.5)	(3.9)	6,171	24.7	11.0	0.7	0.6	11.5	10.7
Panasonic	JPY	1090.5	(0.6)	(5.7)	(11.8)	(15.8)	(32.7)	(18.8)	(12.1)	22,909	13.0	10.7	1.3	1.1	3.7	3.5
GS Yuasa	JPY	414.0	(0.5)	(2.4)	(5.0)	(19.1)	(13.9)	(15.3)	(8.4)	1,466	13.1	11.2	1.0	1.0	6.6	5.9
NEC	JPY	363.0	(0.8)	0.0	(4.2)	(7.9)	(4.0)	2.5	(5.7)	8,097	13.3	11.1	1.1	1.0	6.4	6.0
BYD Auto	CNY	58.1	(3.1)	(2.3)	(7.2)	(3.8)	14.8	48.5	(9.9)	17,998	62.6	51.2	5.0	4.4	19.8	16.6
Tesla Motors	USD	205.0	(0.6)	(2.8)	(7.3)	(7.4)	(22.1)	6.8	(14.6)	26,844	#N/A N/A	120.8	23.7	20.2	97.7	32.3
Kandi Technologies	USD	8.4	(4.6)	(7.0)	(13.8)	6.6	8.4	(33.0)	(23.1)	394	#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			**(1.7)**	**(3.6)**	**(8.0)**	**(4.9)**	**(3.7)**	**7.8**	**(10.3)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임