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1. News Summary (3 page)

2016년 3월 7일

News		Conclusion
WTI comment	유가상승세 지속	
Headline	[주간가격] 유가반등 + 정기보수 + SM수요강세로 가격상승세	성수기 진입과 T/A 시즌 감안할 때 당분간 가격상승세 지속 가능함
News 1.	[주간가격] polyester 계열 설비트러블과 유가반등 영향으로 상승	성수기 진입과 T/A 시즌 감안할 때 당분간 가격상승세 지속 가능함
News 2.	[주간가격] 부타디엔 계열 급등세 지속, 합성고무업체 마진압박	부타디엔의 강세는 지속되겠지만, 타이어 수요약세로 합성고무압박 중
News 3.	미국 셰일가스 기반의 에탄 수출, 2016년말 첫 상업화	미국의 석유화학물량 재고소진도 비슷한 시점부터 나타날 것으로 예상
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	35.9	3.9	9.6	11.3	(10.1)	(29.2)
Dubai	$/bbl	32.2	0.4	5.7	16.9	(17.7)	(43.9)
Gasoline	$/bbl	48.6	0.5	2.0	10.5	(14.7)	(36.5)
Diesel	$/bbl	42.6	0.4	6.0	17.8	(20.5)	(42.4)
Complex margin	$/bbl	7.3	0.0	(0.2)	0.0	(2.5)	(4.2)
1M lagging	$/bbl	13.3	(2.1)	0.1	11.4	7.9	(11.1)
Petrochemical			%	%	%	%	%
Naphtha	$/t	342	(1.8)	1.4	3.6	(23.6)	(37.6)
Butadiene	$/t	1,005	0.0	8.1	32.2	50.0	34.9
HDPE	$/t	1,115	0.5	0.0	4.2	6.7	(7.1)
MEG	$/t	698	2.6	5.4	13.9	24.4	(15.6)
PX	$/t	755	0.7	3.7	5.0	(2.2)	(16.1)
SM	$/t	1,110	1.3	10.6	18.0	24.5	(1.3)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	1.67	1.6	(7.0)	(22.0)	(28.1)	(47.1)
Natural rubber	$/t	1,300	7.4	16.1	20.4	12.1	(5.8)
Cotton	C/lbs	57.1	1.2	(0.7)	(5.8)	(12.5)	(11.9)

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	02/29	$/t	990	4.8	11.9	(6.6)	(2.9)
Propylene	02/29	$/t	635	(1.6)	(1.6)	5.8	(28.2)
Benzene	02/29	$/t	563	1.4	2.7	(8.5)	(15.1)
Toluene	02/29	$/t	590	0.9	2.6	(9.9)	(13.2)
Xylene	02/29	$/t	580	0.0	0.9	(15.9)	(14.7)
PP	02/29	$/t	880	3.5	5.4	(1.7)	(18.9)
PVC	02/29	$/t	745	2.8	2.8	2.1	(10.2)
ABS	02/29	$/t	1,155	1.3	3.1	0.0	(23.8)
SBR	02/29	$/t	1,250	3.3	3.3	7.8	5.5
SM	02/29	$/t	1,040	4.5	10.6	14.3	(1.4)
BPA	02/29	$/t	1,158	(5.7)	9.5	(26.7)	(39.5)
Caustic	02/29	$/t	288	0.0	(0.9)	(0.9)	3.6
2-EH	02/29	$/t	700	1.4	2.2	2.9	(27.1)
Caprolactam	02/29	$/t	1,150	3.6	(7.3)	(11.5)	(26.3)
Solar				%	%	%	%
Polysilicon	03/03	$/kg	13.7	2.3	5.6	0.8	(27.3)
Module	03/03	$/W	0.55	(0.7)	(0.9)	(2.0)	(8.1)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	82.3	(0.1)	0.7	3.1	4.3	(5.6)
Shell	EUR	1,678	0.8	2.2	10.0	5.8	(17.9)
Petrochina	CNY	7.82	3.2	7.7	7.7	(8.9)	(28.4)
Gazprom	RUB	146.2	1.1	5.4	8.2	6.1	(5.1)
Petrobras	BRL	7.2	9.9	48.3	52.6	(4.0)	(21.6)
Refinery							
Phillips66	USD	85.8	(0.4)	8.4	7.4	(4.9)	10.0
Valero	USD	63.9	0.1	7.1	3.4	(10.5)	8.1
JX	JPY	479.3	1.9	5.8	2.4	(7.1)	(1.5)
Neste Oil	EUR	28.9	1.2	(1.5)	(1.2)	9.9	24.0

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	63.1	0.1	3.6	6.6	(14.2)	(26.4)
Dow Chemical	USD	50.3	1.4	3.2	6.1	(5.7)	1.5
SABIC	SAR	74.3	0.0	4.0	10.3	(15.0)	(20.0)
Formosa Pla.	TWD	80.0	0.0	1.3	6.2	7.0	5.4
Shin-Etsu	JPY	6,055	0.9	1.8	2.2	(11.0)	(25.1)
Renewable							
Wacker	EUR	78.6	1.6	7.2	30.7	0.3	(22.1)
Yingli	USD	4.55	1.1	5.9	2.2	(31.1)	(79.3)
Tesla	USD	201.0	2.7	5.6	14.7	(12.7)	(0.7)
BYD	CNY	53.7	0.2	2.6	4.9	(13.1)	3.3

4. Coverage Summary

	03/04	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,956	(0.1)	1.8	3.4	(1.0)	2.1	(2.1)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,222	(0.7)	1.9	1.1	(0.1)	13.3	22.8				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	298,000	(3.2)	1.5	3.1	(3.6)	31.3	29.8	매수	380,000	27.5	14.47	1.64
롯데케미칼	313,500	(0.9)	0.8	11.0	29.8	31.2	67.2	매수	290,000	(7.5)	14.17	1.31
한화케미칼	24,400	(3.7)	(1.4)	(5.4)	(6.9)	37.9	65.4	매수	30,000	23.0	8.62	0.70
금호석유화학	59,400	(1.8)	(3.1)	11.7	2.4	12.7	(30.0)	매수	70,000	17.8	16.17	1.22
KCC	422,500	0.0	(3.4)	(2.2)	(5.8)	14.2	(26.5)	매수	550,000	30.2	14.60	0.66
OCI	96,000	0.3	8.8	47.9	17.9	21.4	(14.7)	매수	85,000	(11.5)	22.85	0.95
SKC	31,350	0.6	0.2	6.8	(9.4)	(16.1)	(4.4)	매수	43,000	37.2	9.76	0.80
국도화학	62,000	(1.6)	5.6	10.5	5.4	(18.4)	24.9	매수	100,000	61.3	7.67	0.74
SK이노베이션	149,500	(0.7)	3.1	13.7	15.4	53.8	55.6	매수	150,000	0.3	11.81	0.93
S-Oil	84,200	(0.5)	5.3	6.9	13.2	44.2	29.7	매수	85,000	1.0	13.66	1.57
GS	54,200	(1.5)	1.7	9.1	8.9	19.4	24.2	매수	60,000	10.7	5.61	0.90
SK가스	72,900	(0.7)	1.0	1.8	(6.9)	(12.2)	(21.3)	매수	90,000	23.5	9.12	0.65
대우인터내셔널	20,650	3.5	10.1	34.1	10.4	1.7	(30.1)	매수	22,000	6.5	11.43	0.98
LG상사	36,500	4.1	9.4	17.2	4.4	40.9	0.1	매수	40,000	9.6	14.04	1.02

SKS Energy Daily

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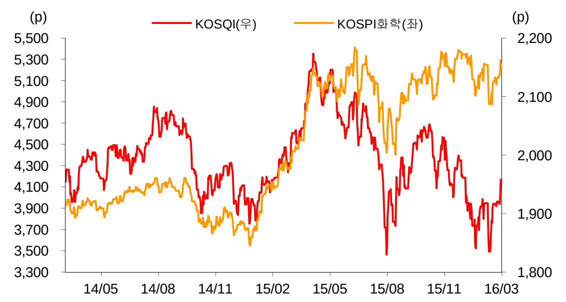
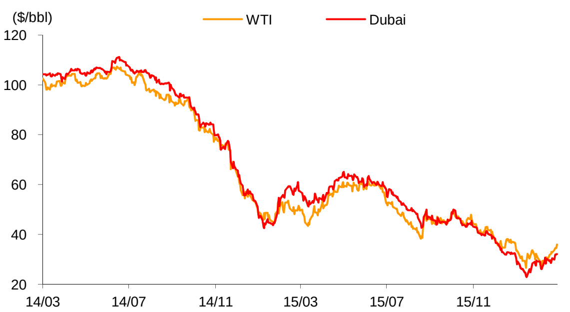
Key Chart

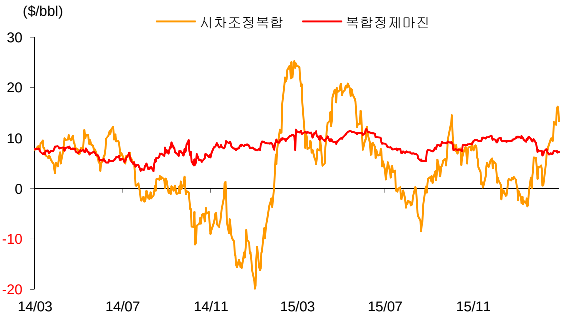
KOSPI/KOSPI화학



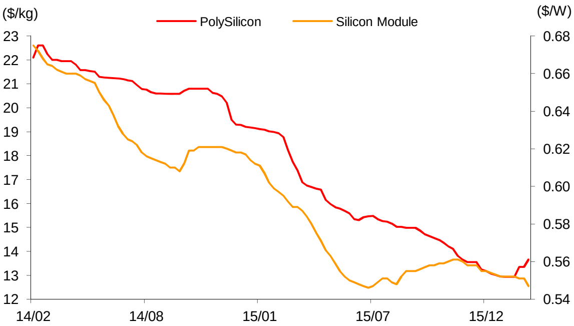
WTI/Dubai



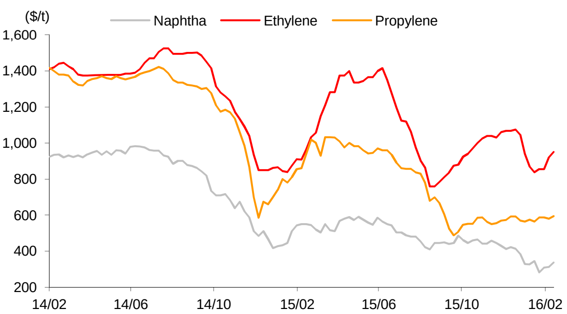
Complex & 1M lagging margin



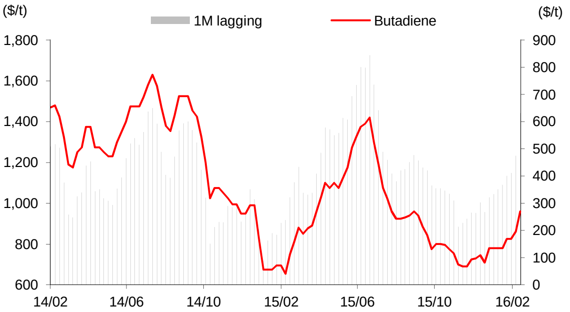
Polysilicon & Module prices



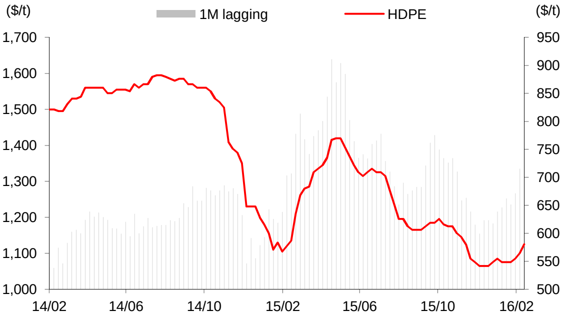
Naphtha/Ethylene/Propylene prices



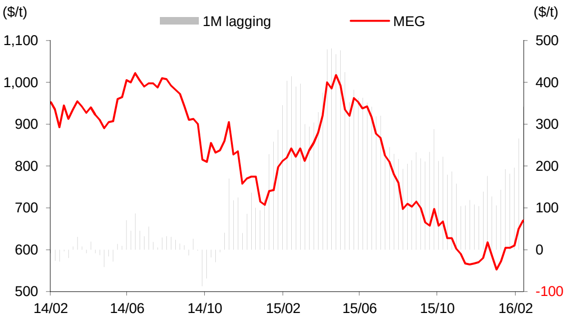
Butadiene price & 1M lagging naphtha spread



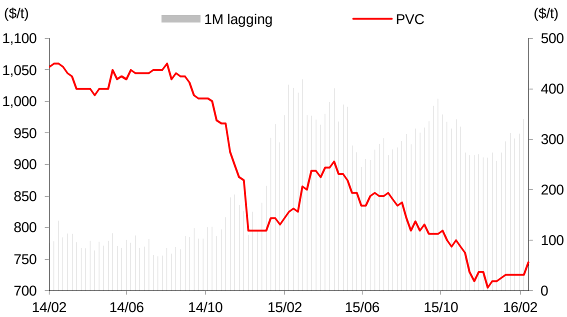
HDPE price & 1M lagging naphtha spread



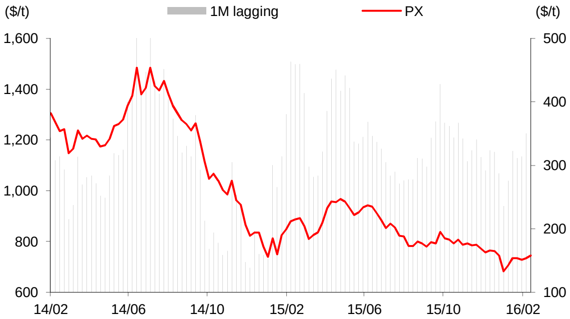
MEG price & 1M lagging naphtha spread



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	[주간가격] 유가반등 + 정기보수 + SM수요강세로 가격상승세
결론	성수기 진입과 T/A 시즌 감안할 때 당분간 가격상승세 지속 가능함
세부	
	1) Ethylene $1,090/t(WoW +$90/t), Propylene $615/t(WoW +$15/t)
	2) 유가반등과 3월부터 시작되는 아시아 정기보수로 전체적 가격 상승세
	3) 아시아 SM 수요 강세, 에틸렌 가격강세를 견인 중임
	4) 유럽과 미국물량 아시아로 arbitrage 노리는 상황, 다만 물량 많지 않음
	5) 성수기 진입과 T/A 시즌 감안할 때 당분간 가격상승세 지속 가능함

WTI Comment	(출처: 연합뉴스)
제목	유가상승세 지속
상승	미국 2월 실업률 4.9%, 전월과 동일
요인	미국 2월 비농업부문 신규고용증대 24.2만개, 예측치 19만 상회
	미국 원유 rig 전주대비 8개 감소한 392개
하락	
요인	

Issue 1	(출처: Platts)
제목	[주간가격] polyester 계열 설비트러블과 유가반등 영향으로 상승
결론	성수기 진입과 T/A 시즌 감안할 때 당분간 가격상승세 지속 가능함
세부	
	1) MEG $698/t(WoW +$36/t), PX $754.8/t(+$27.2/t), PTA $576/t(WoW +$11/t)
	2) MEG 설비트러블 동시다발 발생, MEGlobal 120만톤/년 가동률 감축
	3) 대만 NanYa Plastics의 72만톤/년 설비 또한 가동률 60%임
	4) 여름철 성수기 대비해 re-stocking 들어간 업체들의 구매세력도 있음
	5) 성수기 진입과 T/A 시즌 감안할 때 당분간 가격상승세 지속 가능함

Issue 2	(출처: Platts)
제목	[주간가격] 부타디엔 계열 급등세 지속, 합성고무업체 마진압박
결론	부타디엔의 강세는 지속되겠지만, 타이어 수요약세로 합성고무압박 중
세부	
	1) 부타디엔 $1,005/t(WoW +$75/t), SBR $1,250/t(WoW +$20/t)
	2) 부타디엔은 일부설비 트러블과 정기보수물량으로 인해 급등세임
	3) 싱가폴 Shell 18.6만톤/년 불가항력, 중국 Wuhan/SECCO 정기보수 준비
	4) 다만 합성고무는 수요약세로 인해 마진압박 느끼며 가동률감축 고려 중
	5) 부타디엔의 강세는 지속되겠지만, 타이어 수요약세로 합성고무압박 중

Issue 3	(출처: Platts)
제목	미국 셰일가스 기반의 에탄 수출, 2016년말 첫 상업화
결론	미국의 석유화학물량 재고소진도 비슷한 시점부터 나타날 것으로 예상
세부	
	1) 2016년 5월부터 수출 가능하지만, 유럽의 인프라 교체로 연말 상업화
	2) 오스트리아 Borealis는 2015년 7월 약 2천억원 규모의 투자 발표했었음
	3) CEO Mark Garrett은 2018년부터는 미국 석유화학제품수출증대도 예측
	4) "남미로 가장 먼저 향할 것이고, 이후 유럽/아시아로도 가게될 것"
	5) 미국의 석유화학물량 재고소진도 비슷한 시점부터 나타날 것으로 예상

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**	0.909	0.913	0.915	0.892	0.919	0.897	0.903	0.921	0.753	0.754	0.901
	Change, %		(0.4)	(0.7)	1.8	(1.1)	1.3	0.7	(1.4)	(3.9)	13.7	0.8
	USD/JPY	113.7	113.7	114.0	116.8	123.1	119.0	119.7	120.6	97.7	105.9	121.1
	Change, %		0.0	(0.2)	(2.6)	(7.6)	(4.4)	(5.0)	(5.6)	21.5	13.8	(6.0)
	USD/KRW	1,203.4	1,214.8	1,238.1	1,202.1	1,156.5	1,193.2	1,097.7	1,172.6	1,094.6	1,053.0	1,131.2
	Change, %		(0.9)	(2.8)	0.1	4.0	0.9	9.6	2.6	50.3	3.3	6.4
Agriculture	**Corn**	354.5	353.8	354.5	368.5	376.3	349.5	381.5	358.8	579.2	415.6	376.8
	Change, %		0.2	0.0	(3.8)	(5.8)	1.4	(7.1)	(1.2)	(39.6)	(5.9)	(5.9)
	Soybean	870.5	856.3	855.0	874.5	906.0	877.3	989.0	871.3	1,407.0	1,245.5	945.4
	Change, %		1.7	1.8	(0.5)	(3.9)	(0.8)	(12.0)	(0.1)	(7.5)	(22.3)	(7.9)
	Wheat	454.8	453.3	443.3	472.8	471.3	457.8	493.5	470.0	684.3	588.0	508.1
	Change, %		0.3	2.6	(3.8)	(3.5)	(0.7)	(7.9)	(3.2)	(22.2)	(2.6)	(10.5)
	Rice	10.3	10.3	10.4	11.1	11.2	11.9	10.5	11.6	15.5	14.0	11.1
	Change, %		0.0	(1.2)	(7.1)	(8.2)	(13.4)	(1.9)	(11.2)	4.4	(25.9)	(7.2)
	Oats	170.3	174.0	171.0	196.3	260.5	223.3	292.8	217.3	367.5	373.1	250.2
	Change, %		(2.2)	(0.4)	(13.2)	(34.6)	(23.7)	(41.8)	(21.6)	1.9	(14.3)	(31.9)
MYR/mt	**Palm Oil**	2,464.0	2,453.0	2,462.0	2,453.0	2,189.0	1,955.0	2,378.0	2,398.0	2,405.0	2,415.1	2,190.3
	Change, %		0.4	0.1	0.4	12.6	26.0	3.6	2.8	13.3	(12.8)	12.5
	Cocoa	3,001.0	2,942.0	2,882.0	2,764.0	3,369.0	3,168.0	3,087.0	3,211.0	2,403.9	3,006.8	3,091.6
	Change, %		2.0	4.1	8.6	(10.9)	(5.3)	(2.8)	(6.5)	21.2	7.4	(2.9)
	Cotton	58.9	58.4	57.9	60.2	63.2	63.1	63.6	63.3	83.3	76.4	63.3
	Change, %		0.9	1.7	(2.2)	(6.8)	(6.6)	(7.4)	(6.9)	12.6	(28.8)	(6.9)
	Sugar	14.8	14.8	13.9	12.9	15.5	11.3	13.3	15.2	17.5	16.3	13.1
	Change, %		(0.1)	6.6	15.1	(4.2)	31.6	11.2	(2.7)	(15.9)	(11.5)	12.9
	Coffee	118.8	115.6	113.0	123.2	124.0	115.9	134.1	126.7	126.0	177.1	132.6
	Change, %		2.8	5.1	(3.6)	(4.2)	2.5	(11.4)	(6.2)	(23.0)	50.5	(10.4)
Energy	**WTI**	35.9	34.6	32.8	31.7	40.0	46.1	51.5	37.0	98.0	92.9	48.8
	Change, %		3.9	9.6	13.2	(10.1)	(22.0)	(30.3)	(3.0)	7.2	(45.9)	(26.5)
	Brent	38.7	37.1	35.1	34.5	43.0	49.6	60.6	37.3	108.7	99.5	53.7
	Change, %		4.5	10.3	12.4	(10.0)	(22.0)	(36.1)	3.9	(0.3)	(48.3)	(27.9)
	Natural Gas	1.7	1.6	1.8	2.0	2.2	2.7	2.8	2.3	3.7	4.3	2.6
	Change, %		1.6	(7.0)	(15.5)	(23.8)	(37.3)	(39.8)	(28.7)	26.2	(31.7)	(36.6)
	Ethanol	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.4	2.3	2.1	1.5
	Change, %		2.1	(0.1)	(2.0)	(8.2)	(4.7)	(7.6)	(1.0)	(12.7)	(14.9)	(8.2)
	RBOB Gasoline	133.2	129.9	101.7	102.8	127.0	141.8	192.6	126.7	285.0	262.6	163.6
	Change, %		2.6	31.0	29.5	4.9	(6.1)	(30.8)	5.1	(0.9)	(48.5)	(18.6)
	Coal	43.6	43.6	44.2	43.1	43.0	42.9	52.4	43.3	56.1	57.5	45.2
	Change, %		0.0	(1.3)	1.0	1.3	1.5	(16.9)	0.6	(1.0)	(15.5)	(3.6)
Metal	**Gold**	1,259.3	1,264.2	1,222.7	1,155.6	1,086.8	1,123.5	1,200.3	1,061.4	1,410.4	1,266.5	1,160.6
	Change, %		(0.4)	3.0	9.0	15.9	12.1	4.9	18.6	(28.0)	(1.3)	8.5
	Silver	15.5	15.2	14.7	14.9	14.6	14.6	16.2	13.8	23.8	19.1	15.7
	Change, %		2.0	5.6	4.5	6.7	6.5	(4.4)	12.4	(35.8)	(18.9)	(1.2)
	Platinum	979.1	949.1	914.0	909.1	880.5	991.0	1,182.4	891.1	1,485.7	1,384.6	1,055.7
	Change, %		3.2	7.1	7.7	11.2	(1.2)	(17.2)	9.9	(11.2)	(11.5)	(7.3)
	Palladium	555.3	539.6	485.1	514.0	567.3	574.3	827.5	563.0	725.9	803.4	691.9
	Change, %		2.9	14.5	8.0	(2.1)	(3.3)	(32.9)	(1.4)	1.7	11.4	(19.7)
	Copper	5,027.5	4,855.0	4,706.0	4,687.0	4,612.0	5,120.0	5,840.0	4,705.0	7,352.6	6,828.1	5,503.1
	Change, %		3.6	6.8	7.3	9.0	(1.8)	(13.9)	6.9	(7.2)	(14.4)	(8.6)
	Uranium	31.4	31.8	32.0	34.5	36.1	37.2	39.7	34.4	38.5	33.5	36.9
	Change, %		(1.3)	(1.9)	(8.9)	(13.0)	(15.6)	(20.8)	(8.7)	(20.9)	2.5	(14.8)
	HR Coil	405.0	404.0	400.0	399.0	368.0	449.0	500.0	391.0	630.4	653.2	461.5
	Change, %		0.2	1.3	1.5	10.1	(9.8)	(19.0)	3.6	3.1	(10.4)	(12.2)
	Scrap	250.0	250.0	250.0	250.0	161.0	250.0	255.0	250.0	396.9	401.3	252.9
	Change, %		0.0	0.0	0.0	55.3	0.0	(2.0)	0.0	(1.2)	(16.5)	(1.2)
	Zinc	1,857.0	1,843.0	1,758.0	1,715.0	1,552.0	1,785.0	2,030.0	1,609.0	1,940.3	2,165.0	1,941.9
	Change, %		0.8	5.6	8.3	19.7	4.0	(8.5)	15.4	(1.2)	6.0	(4.4)

자료: Bloomberg
참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		03/04	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	**WTI**	35.9	34.6	32.8	32.3	40.0	46.1	50.8	37.0	93.1	48.8	31.6
	Change, %		*3.9*	*9.6*	*11.3*	*(10.1)*	*(22.0)*	*(29.2)*	*(3.0)*	*(61.4)*	*(26.4)*	*13.8*
	Dubai	32.2	32.0	30.4	27.5	39.1	46.6	57.4	32.2	96.7	50.8	28.4
	Change, %		*0.4*	*5.7*	*16.9*	*(17.7)*	*(31.0)*	*(43.9)*	*(0.1)*	*(66.7)*	*(36.7)*	*13.5*
Crude Oil	**Gasoline(휘발유)**	48.6	48.3	47.6	43.9	56.9	65.2	76.5	54.8	110.9	69.5	48.0
Product	*Change, %*		*0.5*	*2.0*	*10.5*	*(14.7)*	*(25.5)*	*(36.5)*	*(11.4)*	*(56.2)*	*(30.2)*	*1.2*
	Kerosene(등유)	44.6	44.6	42.7	39.4	53.6	58.6	75.8	44.2	112.6	64.7	39.9
	Change, %		*0.0*	*4.4*	*13.1*	*(16.9)*	*(23.9)*	*(41.2)*	*0.8*	*(60.4)*	*(31.2)*	*11.7*
	Diesel(경유)	42.6	42.5	40.2	36.2	53.6	59.1	74.0	43.2	112.8	64.8	37.9
	Change, %		*0.4*	*6.0*	*17.8*	*(20.5)*	*(27.9)*	*(42.4)*	*(1.4)*	*(62.2)*	*(34.2)*	*12.5*
	Bunker-C	25.1	25.0	24.1	23.1	32.9	37.5	55.6	25.3	86.5	45.3	23.5
	Change, %		*0.3*	*3.9*	*8.4*	*(23.7)*	*(33.1)*	*(54.9)*	*(0.9)*	*(71.0)*	*(44.7)*	*6.4*
	Naphtha	36.5	36.3	35.3	32.4	48.3	45.0	60.7	43.5	94.3	52.6	35.6
	Change, %		*0.3*	*3.4*	*12.6*	*(24.6)*	*(19.0)*	*(40.0)*	*(16.1)*	*(61.4)*	*(30.7)*	*2.4*
Dubai	**Gasoline(휘발유)**	16.4	16.3	17.2	16.4	17.8	18.6	19.1	22.6	14.2	18.7	19.6
Spread	*Change*		*0.1*	*(0.8)*	*(0.0)*	*(1.4)*	*(2.2)*	*(2.7)*	*(6.2)*	*2.2*	*(2.3)*	*(3.2)*
	Kerosene(등유)	12.4	12.5	12.3	11.9	14.5	12.0	18.4	12.0	15.9	14.0	11.6
	Change		*(0.1)*	*0.1*	*0.5*	*(2.1)*	*0.4*	*(6.0)*	*0.4*	*(3.5)*	*(1.6)*	*0.9*
	Diesel(경유)	10.5	10.4	9.8	8.7	14.5	12.5	16.6	11.0	16.0	14.0	9.5
	Change		*0.0*	*0.7*	*1.8*	*(4.1)*	*(2.0)*	*(6.2)*	*(0.6)*	*(5.6)*	*(3.5)*	*0.9*
	Bunker-C	(7.1)	(7.1)	(6.3)	(4.4)	(6.3)	(9.1)	(1.8)	(6.9)	(10.3)	(5.5)	(4.8)
	Change		*(0.1)*	*(0.8)*	*(2.7)*	*(0.9)*	*2.0*	*(5.4)*	*(0.2)*	*3.1*	*(1.6)*	*(2.3)*
	Naphtha	4.3	4.3	4.8	4.8	9.2	(1.6)	3.4	11.3	(2.4)	1.8	7.3
	Change		*(0.0)*	*(0.5)*	*(0.6)*	*(5.0)*	*5.9*	*0.9*	*(7.0)*	*6.7*	*2.5*	*(3.0)*
Refining	**Simple(단순)**	1.9	1.9	2.2	2.8	3.7	1.0	6.1	3.2	(0.1)	3.3	3.2
Margin	*Change*		*(0.0)*	*(0.4)*	*(0.9)*	*(1.8)*	*0.9*	*(4.2)*	*(1.3)*	*2.0*	*(1.4)*	*(1.4)*
	Complex(복합)	7.3	7.2	7.4	7.3	9.8	7.6	11.5	9.7	7.1	9.3	8.5
	Change		*0.0*	*(0.2)*	*0.0*	*(2.5)*	*(0.3)*	*(4.2)*	*(2.4)*	*0.2*	*(2.0)*	*(1.3)*
	Complex(lagging)	13.3	15.4	13.2	1.9	5.4	2.3	24.4	2.3	2.2	6.5	4.1
	Change		*(2.1)*	*0.1*	*11.4*	*7.9*	*11.0*	*(11.1)*	*11.0*	*11.1*	*6.9*	*9.2*

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			03/04	03/03	03/02	03/01	02/29	02/26	02/25	02/24	02/23	02/22
Spot Price	**Naphtha**	CFR Japan	342.3	348.5	344.8	326.5	326.5	337.5	324.5	308.3	318.3	314.3
	Ethylene	CFR SE Asia	1,090.0	1,015.0	1,015.0	1,015.0	1,010.0	1,000.0	960.0	955.0	955.0	940.0
	Propylene	FOB Korea	615.0	615.0	610.0	610.0	605.0	600.0	595.0	591.0	591.0	591.0
	Butadiene	FOB Korea	1,005.0	1,005.0	965.0	965.0	965.0	930.0	900.0	900.0	890.0	840.0
	HDPE	CFR FE Asia	1,115.0	1,110.0	1,110.0	1,115.0	1,115.0	1,115.0	1,115.0	1,115.0	1,120.0	1,100.0
	LDPE	CFR FE Asia	1,130.0	1,125.0	1,125.0	1,125.0	1,135.0	1,125.0	1,125.0	1,125.0	1,140.0	1,130.0
	LLDPE	CFR FE Asia	1,105.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,090.0
	MEG	CFR China	698.0	680.0	685.0	684.0	676.0	662.0	655.0	652.0	665.0	657.0
	PP	CFR FE Asia	880.0	890.0	870.0	860.0	860.0	860.0	855.0	850.0	840.0	830.0
	PX	CFR China	754.8	749.3	745.3	740.2	722.0	727.7	723.7	723.7	728.7	725.7
	PTA	CFR China	576.0	577.0	575.0	571.0	563.0	565.0	569.0	569.0	571.0	566.0
	Benzene	FOB Korea	622.0	619.0	600.0	580.0	562.0	559.0	556.0	551.0	551.0	551.0
	Toluene	FOB Korea	620.0	616.0	602.5	584.0	570.5	561.5	561.0	559.5	562.5	554.0
	Xylene	FOB Korea	615.5	615.5	610.5	610.5	589.5	589.5	589.5	581.0	581.0	571.0
	SM	FOB Korea	1,110.0	1,096.0	1,061.0	1,041.0	1,021.5	1,004.0	996.0	996.0	996.0	992.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**Naphtha**	CFR Japan	338.0	313.0	345.5	457.5	459.5	551.0	413.5	865.9	493.0	337.9
	Change, %			*8.0*	*(2.2)*	*(26.1)*	*(26.4)*	*(38.7)*	*(18.3)*	*(61.0)*	*(31.4)*	*0.0*
	Ethylene	CFR SE Asia	990.0	945.0	885.0	1,060.0	1,025.0	1,020.0	1,090.0	1,401.1	1,103.7	968.3
	Change, %			*4.8*	*11.9*	*(6.6)*	*(3.4)*	*(2.9)*	*(9.2)*	*(29.3)*	*(10.3)*	*2.2*
	Propylene	CFR SE Asia	635.0	645.0	645.0	600.0	557.5	885.0	650.0	1,254.2	770.0	579.7
	Change, %			*(1.6)*	*(1.6)*	*5.8*	*13.9*	*(28.2)*	*(2.3)*	*(49.4)*	*(17.5)*	*9.5*
	Butadiene	CFR SE Asia	920.0	820.0	740.0	640.0	745.0	700.0	720.0	1,281.7	877.5	776.7
	Change, %			*12.2*	*24.3*	*43.8*	*23.5*	*31.4*	*27.8*	*(28.2)*	*4.8*	*18.5*
	Benzene	CFR SE Asia	562.5	555.0	547.5	615.0	605.0	662.5	580.0	1,243.1	690.0	555.0
	Change, %			*1.4*	*2.7*	*(8.5)*	*(7.0)*	*(15.1)*	*(3.0)*	*(54.8)*	*(18.5)*	*1.4*
	Toluene	CFR SE Asia	590.0	585.0	575.0	655.0	685.0	680.0	630.0	1,082.5	700.8	592.8
	Change, %			*0.9*	*2.6*	*(9.9)*	*(13.9)*	*(13.2)*	*(6.3)*	*(45.5)*	*(15.8)*	*(0.5)*
	Xylene	CFR SE Asia	580.0	580.0	575.0	690.0	690.0	680.0	625.0	1,055.7	699.3	594.2
	Change, %			*0.0*	*0.9*	*(15.9)*	*(15.9)*	*(14.7)*	*(7.2)*	*(45.1)*	*(17.1)*	*(2.4)*
Spread	**Ethylene**	-Naphtha	652.0	632.0	539.5	602.5	565.5	469.0	676.5	535.2	610.6	630.4
	Change, %			*3.2*	*20.9*	*8.2*	*15.3*	*39.0*	*(3.6)*	*21.8*	*6.8*	*3.4*
	Propylene	-Naphtha	297.0	332.0	299.5	142.5	98.0	334.0	236.5	388.3	277.0	241.8
	Change, %			*(10.5)*	*(0.8)*	*108.4*	*203.1*	*(11.1)*	*25.6*	*(23.5)*	*7.2*	*22.8*
	Butadiene	-Naphtha	582.0	507.0	394.5	182.5	285.5	149.0	306.5	415.9	384.5	438.7
	Change, %			*14.8*	*47.5*	*218.9*	*103.9*	*290.6*	*89.9*	*39.9*	*51.4*	*32.7*
	Benzene	-Naphtha	224.5	242.0	202.0	157.5	145.5	111.5	166.5	377.3	197.0	217.1
	Change, %			*(7.2)*	*11.1*	*42.5*	*54.3*	*101.3*	*34.8*	*(40.5)*	*14.0*	*3.4*
	Toluene	-Naphtha	252.0	272.0	229.5	197.5	225.5	129.0	216.5	216.6	207.8	254.8
	Change, %			*(7.4)*	*9.8*	*27.6*	*11.8*	*95.3*	*16.4*	*16.3*	*21.3*	*(1.1)*
	Xylene	-Naphtha	242.0	267.0	229.5	232.5	230.5	129.0	211.5	189.9	206.3	256.2
	Change, %			*(9.4)*	*5.4*	*4.1*	*5.0*	*87.6*	*14.4*	*27.4*	*17.3*	*(5.6)*

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	1,125.0	1,100.0	1,075.0	1,125.0	1,175.0	1,135.0	1,065.0	1,524.9	1,230.1	1,084.4
	Change, %			2.3	4.7	0.0	(4.3)	(0.9)	5.6	(26.2)	(8.5)	3.7
	MEG	CFR SE Asia	670.0	650.0	605.0	567.5	627.5	842.5	617.5	934.1	780.8	607.5
	Change, %			3.1	10.7	18.1	6.8	(20.5)	8.5	(28.3)	(14.2)	10.3
	PVC	CFR SE Asia	745.0	725.0	725.0	730.0	770.0	830.0	715.0	1,013.9	820.8	724.4
	Change, %			2.8	2.8	2.1	(3.2)	(10.2)	4.2	(26.5)	(9.2)	2.8
	PP	CFR SE Asia	880.0	850.0	835.0	895.0	985.0	1,085.0	835.0	1,503.0	1,109.8	841.1
	Change, %			3.5	5.4	(1.7)	(10.7)	(18.9)	5.4	(41.4)	(20.7)	4.6
	2-EH	CFR Korea	700.0	690.0	685.0	680.0	727.5	960.0	680.0	1,397.1	930.1	686.1
	Change, %			1.4	2.2	2.9	(3.8)	(27.1)	2.9	(49.9)	(24.7)	2.0
	ABS	CFR SE Asia	1,155.0	1,140.0	1,120.0	1,155.0	1,242.5	1,515.0	1,130.0	1,897.7	1,431.1	1,125.0
	Change, %			1.3	3.1	0.0	(7.0)	(23.8)	2.2	(39.1)	(19.3)	2.7
	SBR	CFR SE Asia	1,250.0	1,210.0	1,210.0	1,160.0	1,210.0	1,185.0	1,150.0		1,332.1	1,201.7
	Change, %			3.3	3.3	7.8	3.3	5.5	8.7		(6.2)	4.0
	SM	CFR SE Asia	1,040.0	995.0	940.0	910.0	952.5	1,055.0	910.0	1,547.1	1,100.7	958.3
	Change, %			4.5	10.6	14.3	9.2	(1.4)	14.3	(32.8)	(5.5)	8.5
	Caustic	FOB NEA	287.5	287.5	290.0	290.0	300.0	277.5	285.0	310.0	296.8	286.7
	Change, %			0.0	(0.9)	(0.9)	(4.2)	3.6	0.9	(7.3)	(3.1)	0.3
	PX	CFR SE Asia	745.0	735.0	735.0	785.0	792.5	887.5	762.5	1,228.5	842.9	730.3
	Change, %			1.4	1.4	(5.1)	(6.0)	(16.1)	(2.3)	(39.4)	(11.6)	2.0
	PO	CFR China	1,157.5	1,227.5	1,057.5	1,580.0	1,687.5	1,912.5	1,257.5	2,179.2	1,683.4	1,145.8
	Change, %			(5.7)	9.5	(26.7)	(31.4)	(39.5)	(8.0)	(46.9)	(31.2)	1.0
	Caprolactam	CFR SE Asia	1,150.0	1,110.0	1,240.0	1,300.0	1,360.0	1,560.0	1,260.0	2,233.4	1,581.5	1,192.2
	Change, %			3.6	(7.3)	(11.5)	(15.4)	(26.3)	(8.7)	(48.5)	(27.3)	(3.5)
	PTA	CFR SE Asia	580.0	582.5	562.5	622.5	617.5	640.0	585.0	911.7	648.0	574.2
	Change, %			(0.4)	3.1	(6.8)	(6.1)	(9.4)	(0.9)	(36.4)	(10.5)	1.0
Spread	**HDPE**		787.0	787.0	729.5	667.5	715.5	584.0	651.5	659.0	737.1	746.5
	Change, %			0.0	7.9	17.9	10.0	34.8	20.8	19.4	6.8	5.4
	MEG		332.0	337.0	259.5	110.0	168.0	291.5	204.0	68.2	287.8	269.6
	Change, %			(1.5)	27.9	201.8	97.6	13.9	62.7	386.6	15.4	23.2
	PVC		407.0	412.0	379.5	272.5	310.5	279.0	301.5	148.0	327.8	386.5
	Change, %			(1.2)	7.2	49.4	31.1	45.9	35.0	175.0	24.2	5.3
	PP		542.0	537.0	489.5	437.5	525.5	534.0	421.5	637.1	616.8	503.2
	Change, %			0.9	10.7	23.9	3.1	1.5	28.6	(14.9)	(12.1)	7.7
	2-EH		362.0	377.0	339.5	222.5	268.0	409.0	266.5	531.3	437.0	348.2
	Change, %			(4.0)	6.6	62.7	35.1	(11.5)	35.8	(31.9)	(17.2)	4.0
	ABS		817.0	827.0	774.5	697.5	783.0	964.0	716.5	1,031.9	938.1	787.1
	Change, %			(1.2)	5.5	17.1	4.3	(15.2)	14.0	(20.8)	(12.9)	3.8
	SBR	BD spread	330.0	390.0	470.0	520.0	465.0	485.0	430.0		454.7	425.0
	Change, %			(15.4)	(29.8)	(36.5)	(29.0)	(32.0)	(23.3)		(27.4)	(22.4)
	SM		702.0	682.0	594.5	452.5	493.0	504.0	496.5	681.2	607.7	620.4
	Change, %			2.9	18.1	55.1	42.4	39.3	41.4	3.0	15.5	13.2
	Caustic											
	Change, %											
	PX		407.0	422.0	389.5	327.5	333.0	336.5	349.0	362.6	349.9	392.3
	Change, %			(3.6)	4.5	24.3	22.2	21.0	16.6	12.2	16.3	3.7
	PO	propylene sprea	522.5	582.5	412.5	980.0	1,130.0	1,027.5	607.5	925.0	913.4	566.1
	Change, %			(10.3)	26.7	(46.7)	(53.8)	(49.1)	(14.0)	(43.5)	(42.8)	(7.7)
	Caprolactam	benzene spread	587.5	555.0	692.5	685.0	755.0	897.5	680.0	990.3	891.6	637.2
	Change, %			5.9	(15.2)	(14.2)	(22.2)	(34.5)	(13.6)	(40.7)	(34.1)	(7.8)
	PTA	px spread	58.5	68.0	48.0	73.0	62.8	18.8	51.3	51.8	58.0	63.0
	Change, %			(14.0)	21.9	(19.9)	(6.8)	212.0	14.1	13.0	0.8	(7.1)

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	03/04	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	50.3	1.4	3.2	6.1	(5.7)	19.5	1.5	(2.3)	56,180	14.7	12.7	2.3	2.2	7.6	7.0
Du Pont	USD	63.2	2.1	2.7	6.9	(6.7)	30.0	(14.9)	(5.1)	55,073	20.9	18.0	5.9	4.9	11.5	10.2
Eastman	USD	69.7	1.7	6.9	13.5	(5.0)	0.2	(6.4)	3.2	10,298	9.9	9.0	2.3	2.0	7.7	7.4
BASF	EUR	63.1	0.1	3.6	6.6	(14.2)	(9.3)	(26.4)	(10.8)	63,747	13.9	12.5	1.9	1.8	7.2	6.6
Akzo Nobel	EUR	55.6	0.9	4.2	(0.4)	(12.6)	(5.9)	(16.5)	(9.9)	15,216	13.4	12.7	2.1	2.0	7.1	6.8
Arkema	EUR	62.5	(0.9)	11.8	18.4	(5.6)	3.2	(5.1)	(3.3)	5,116	12.7	10.5	1.3	1.2	5.6	5.1
Lanxess	EUR	41.4	1.2	8.9	15.1	(8.1)	(3.7)	(9.6)	(3.0)	4,169	15.4	12.6	1.5	1.4	5.5	5.0
Sumitomo Chemical	JPY	518	0.4	3.6	(8.3)	(28.3)	(9.6)	(9.9)	(26.1)	7,527	9.0	7.9	0.9	0.9	6.7	6.3
Mitsubishi Chemical	JPY	628	1.7	8.0	(4.2)	(20.8)	(1.8)	(7.2)	(18.9)	8,306	9.9	8.7	0.9	0.8	5.8	5.6
Shin-Etsu Chemical	JPY	6,055	0.9	1.8	2.2	(11.0)	(1.5)	(25.1)	(8.5)	22,967	17.0	15.8	1.2	1.1	5.9	5.5
Asahi Kasei	JPY	693	1.2	8.0	(5.3)	(15.9)	(20.7)	(42.9)	(15.8)	8,532	9.9	8.9	0.8	0.8	5.0	4.7
JSR	JPY	1,718	2.3	7.8	2.3	(9.5)	(2.9)	(20.5)	(9.5)	3,409	12.7	11.8	1.0	1.0	5.2	4.9
Nitto Denko	JPY	6,695	2.2	13.1	3.4	(22.2)	(10.5)	(10.4)	(24.9)	10,212	13.2	12.6	1.5	1.4	5.7	5.4
SABIC	SAR	74.3	0.0	4.0	10.3	(15.0)	(4.4)	(20.0)	(2.9)	59,438	14.8	12.5	1.3	1.2	7.2	6.4
Yansab	SAR	36.7	0.0	12.9	22.9	(18.0)	(17.9)	(24.9)	13.2	5,505	16.8	12.8	1.3	1.3	8.5	7.8
Formosa Plastics	TWD	80.0	0.0	1.3	6.2	7.0	17.1	5.4	3.9	15,658	16.7	15.7	1.6	1.5	25.1	24.1
Formosa Fiber	TWD	77.1	0.8	3.1	9.4	9.5	14.9	9.1	4.2	13,895	17.4	16.9	1.5	1.4	14.6	14.2
Nan Ya Plastics	TWD	66.0	0.2	3.4	12.2	10.4	15.8	(2.9)	8.2	16,094	15.5	14.8	1.5	1.4	15.3	14.0
Sinopec Shanghai	CNY	6.35	(4.1)	8.5	17.6	(2.9)	(7.8)	23.8	(2.0)	8,756	19.9	20.2	3.1	2.8	9.4	9.1
Sinopec Yizheng(Fibe	CNY	5.66	(5.0)	(13.3)	(9.0)	(35.2)	(7.5)	(13.2)	(30.6)	10,962	#N/A N/A	153.0	3.4	3.3	18.8	15.0
Reliance	INR	1,006	(0.6)	5.9	3.4	4.2	20.4	13.4	(0.9)	48,727	11.0	9.7	1.2	1.1	8.3	7.1
Industries Qatar	QAR	107.6	0.0	3.5	4.5	(1.3)	(16.0)	(26.4)	(3.2)	17,876	13.4	12.6	1.9	1.9	53.7	49.8
PTT Chemical	THB	55.8	(0.9)	1.8	4.7	9.3	(0.9)	0.0	11.5	7,034	10.6	9.5	1.0	1.0	5.6	5.2
Petronas	MYR	7.0	0.9	2.9	(0.3)	3.4	16.1	26.7	(4.0)	13,741	19.0	17.5	2.2	2.0	9.5	8.7
LG화학	KRW	298,000	(3.2)	1.5	(1.3)	(3.6)	34.5	29.8	(9.3)	16,490	0.0	14.7	0.0	1.6	0.0	6.1
롯데케미칼	KRW	313,500	(0.9)	0.8	7.0	29.8	29.5	67.2	28.7	8,972	0.0	8.9	0.0	1.3	0.0	4.7
한화케미칼	KRW	24,400	(3.7)	(1.4)	(4.1)	(6.9)	35.6	65.4	(10.3)	3,299	0.0	10.0	0.0	0.8	0.0	8.6
금호석유	KRW	59,400	(1.8)	(3.1)	8.6	2.4	15.8	(30.0)	14.0	1,511	0.0	14.0	0.0	1.1	0.0	9.5
SKC	KRW	31,350	0.6	0.2	4.7	(9.4)	(12.9)	(4.4)	(7.2)	963	0.0	9.0	0.0	0.7	0.0	7.2
국도화학	KRW	62,000	(1.6)	5.6	10.5	5.4	(15.2)	24.9	4.6	301	0.0	8.2	0.0	0.8	0.0	4.5
효성	KRW	2,940	0.2	9.7	10.9	6.1	16.0	(29.4)	12.6	3,753	0.0	8.5	0.0	1.2	0.0	6.7
Average			**(0.1)**	**4.2**	**5.6**	**(5.5)**	**3.9**	**(2.6)**	**(3.4)**							
Refinery																
Valero	USD	63.9	0.1	7.1	3.4	(10.5)	9.3	8.1	(9.6)	30,053	8.8	8.4	1.3	1.2	4.7	4.7
Conoco Phillips	USD	41.1	6.6	20.5	16.4	(19.7)	(12.9)	(36.0)	(11.9)	50,833	#N/A N/A	73.7	1.3	1.3	11.3	6.9
Formosa Petrochemi	TWD	87.6	2.2	3.8	9.0	16.0	19.5	29.4	11.2	25,658	19.6	18.9	3.0	2.9	13.1	13.0
Tesoro	USD	84.8	(1.4)	5.5	6.3	(24.5)	(7.8)	(5.5)	(19.5)	10,166	9.8	10.5	1.6	1.5	5.5	5.7
Marathon Petroleum	USD	37.1	(0.7)	8.3	6.1	(33.4)	(20.0)	(27.3)	(28.5)	19,613	8.5	7.9	1.4	1.2	6.0	5.6
Devon Energy	USD	23.3	6.0	14.9	(12.2)	(42.5)	(41.9)	(62.3)	(27.2)	11,895	#N/A N/A	29.2	1.3	1.3	11.9	7.5
Hollyfrontier	USD	34.9	(1.9)	6.1	7.8	(27.2)	(24.8)	(13.7)	(12.5)	6,159	11.2	9.0	1.2	1.1	5.7	5.3
Phillips 66	USD	85.8	(0.4)	8.4	7.4	(4.9)	11.1	10.0	4.9	45,246	13.2	11.4	1.9	1.7	7.6	6.8
Murphy Oil	USD	23.7	11.5	38.3	18.5	(6.9)	(17.2)	(52.6)	5.6	4,077	#N/A N/A	#N/A N/A	0.7	0.7	8.1	5.4
JX Holdings	JPY	479.3	1.9	5.8	2.4	(7.1)	8.9	(1.5)	(5.7)	10,499	8.9	8.1	0.7	0.7	10.3	9.9
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	(6.8)	(6.3)	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	1,889.0	3.8	6.8	2.1	(10.0)	(2.0)	(12.6)	(2.5)	2,653	5.8	5.4	0.5	0.5	8.0	8.0
Tonengeneral	JPY	933.0	4.6	4.4	(7.2)	(22.4)	(18.5)	(18.2)	(8.7)	2,998	10.4	8.5	1.4	1.3	12.3	6.9
Nesteoil	EUR	28.9	1.2	(1.5)	(1.2)	9.9	27.3	24.0	4.4	0	10.8	12.0	2.1	1.9	6.9	7.4
Ashland	USD	100.7	0.8	5.0	5.9	(10.9)	(0.1)	(21.7)	(1.9)	6,368	14.1	12.6	2.5	2.2	8.4	8.1
Fuchs Petrolub	EUR	38.4	0.4	2.0	8.3	(11.7)	0.4	3.4	(11.8)	5,560	20.8	19.7	4.5	4.0	12.2	11.6
SK이노베이션	KRW	149,500	(0.7)	3.1	3.1	15.4	55.4	55.6	15.0	11,542	0.0	9.4	0.0	0.8	0.0	5.9
S-Oil	KRW	84,200	(0.5)	5.3	1.4	13.2	45.7	29.7	6.0	7,915	0.0	10.4	0.0	1.6	0.0	7.0
GS	KRW	54,200	(1.5)	1.7	2.3	8.9	21.3	24.2	6.9	4,205	0.0	7.5	0.0	0.7	0.0	7.0
Average			**1.7**	**7.6**	**4.2**	**(8.9)**	**2.5**	**(3.9)**	**(4.5)**							

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

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Global peers

	Currency	03/04	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	82	(0.1)	0.7	3.1	4.3	13.6	(5.6)	5.6	341,730	32.3	19.2	2.0	2.0	10.8	8.0
BP	GBP	368	1.6	5.2	4.9	2.3	8.9	(18.4)	3.9	96,723	28.1	13.1	1.0	1.0	5.6	4.4
Shell	EUR	1,678	0.8	2.2	10.0	5.8	4.5	(17.9)	9.9	190,188	19.7	11.7	0.9	0.9	5.8	4.4
Chevron	USD	88	0.5	4.2	3.7	(2.0)	14.7	(16.4)	(2.3)	165,586	51.6	17.8	1.1	1.1	7.6	5.4
Total	EUR	43	1.1	4.5	8.8	(1.8)	6.8	(10.0)	3.4	115,176	15.9	11.4	1.2	1.1	6.9	5.4
Sinopec	CNY	5	3.1	7.6	8.3	(6.8)	(4.1)	(22.9)	(5.4)	84,696	16.6	11.3	0.9	0.8	5.5	4.6
Petrochina	CNY	8	3.2	7.7	7.7	(8.9)	(10.6)	(28.4)	(6.3)	209,161	55.5	25.7	1.2	1.2	8.0	6.8
CNOOC	CNY	13	1.2	6.5	8.6	(17.5)	(23.9)	(31.2)	(14.2)	7,631	49.2	26.9	1.3	1.3	12.6	10.7
Gazprom	RUB	146	1.1	5.4	8.2	6.1	2.4	(5.1)	7.4	48,112	3.1	2.9	0.2	0.2	3.3	2.8
Rosneft	RUB	302	2.7	6.7	6.8	20.2	23.7	14.1	19.3	44,541	8.1	5.3	0.8	0.7	3.9	3.2
Anadarko	USD	45	5.3	19.0	9.4	(20.3)	(33.8)	(45.7)	(6.8)	23,012	#N/A N/A	#N/A N/A	1.8	2.0	11.6	7.7
Petrobras	BRL	7	9.9	48.3	52.6	(4.0)	(15.2)	(21.6)	7.8	30,778	12.5	4.8	0.4	0.3	6.2	5.2
Lukoil	USD	2,775	2.8	7.3	8.7	11.5	12.9	(6.1)	18.3	32,619	8.5	5.5	0.3	0.3	N/A	N/A
Kinder	USD	19	(2.0)	4.3	18.3	10.1	(39.8)	(54.9)	24.1	47,497	26.5	22.5	1.1	1.1	11.0	10.3
Statoil	NOK	134	2.3	7.6	12.4	5.3	10.6	(6.7)	8.2	50,162	32.7	15.6	1.2	1.2	3.6	2.8
BHP	AUD	18	2.4	13.3	14.4	(1.5)	(28.4)	(43.2)	(1.1)	68,207	37.2	18.8	1.3	1.2	7.9	6.1
PTT E&P	THB	73	(2.4)	7.8	25.0	17.4	(1.4)	(34.7)	26.6	8,141	26.4	15.7	0.7	0.7	2.9	2.6
Petronas gas	MYR	22	(0.4)	0.6	0.1	(4.2)	4.7	(3.9)	(1.7)	10,868	23.9	23.5	3.7	3.6	13.7	13.3
Chesapeake	USD	5	19.0	88.1	55.8	11.6	(30.1)	(67.2)	12.9	3,378	#N/A N/A	19.8	1.7	2.0	14.4	9.7
Noble Energy	USD	32	1.8	9.1	3.3	(4.3)	5.5	(31.3)	(1.5)	13,907	#N/A N/A	#N/A N/A	1.5	1.6	10.2	9.2
Average		**0**	**2.7**	**12.8**	**13.5**	**1.2**	**(4.0)**	**(22.9)**	**5.4**							
PV																
WACKER	EUR	78.6	1.6	7.2	30.7	0.3	5.1	(22.1)	1.4	4,510	25.3	15.5	1.6	1.5	5.1	4.7
GCL-Poly	HKD	1.2	4.3	3.4	19.6	(15.7)	4.3	(40.3)	5.2	2,921	7.5	6.4	0.8	0.7	7.4	6.3
REC	NOK	107.5	0.0	0.0	0.0	0.0	0.0	7.0	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	1.8	17.1	(21.2)	(37.8)	(51.1)	(85.2)	(92.1)	(65.0)	657	#N/A N/A	#N/A N/A	0.1	0.1	19.5	11.0
Canadian Solar	USD	22.5	0.0	0.7	12.0	(8.4)	23.0	(25.3)	(22.2)	1,261	8.0	6.6	1.2	1.0	5.5	3.9
JA Solar	USD	9.2	(0.5)	3.0	4.8	1.0	14.8	1.2	(5.5)	463	5.5	5.4	0.4	0.4	3.4	3.0
Trina Solar	USD	10.5	0.3	2.1	8.1	2.5	23.3	(9.5)	(4.8)	967	7.5	6.3	0.7	0.6	5.6	4.8
Solar City	USD	22.4	(0.4)	19.1	(24.1)	(37.8)	(54.4)	(55.3)	(56.1)	2,192	#N/A N/A	#N/A N/A	2.4	2.2	#N/A N/A	#N/A N/A
Yingli	USD	4.6	1.1	5.9	2.2	(31.1)	(37.4)	(79.3)	0.4	83	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	9.2	9.0
First Solar	USD	69.5	(0.3)	(1.0)	3.5	16.2	48.1	13.6	5.3	7,075	16.6	18.7	1.2	1.1	10.4	9.2
한화솔라원	USD	17.4	(1.7)	4.1	0.2	(10.8)	41.1	58.4	(20.6)	#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	96,000	0.3	8.8	39.1	17.9	24.4	(14.7)	28.0	1,912	0.0	14.9	0.0	0.8	0.0	10.9
웅진에너지	KRW	1,670	0.0	(0.6)	2.8	(9.7)	16.8	(9.2)	(3.5)	112	N/A	0.0	0.8	0.0	10.9	0.0
신성솔라에너지	KRW	1,890	0.5	(0.3)	7.7	(4.1)	54.3	44.8	(6.4)	119	N/A	0.8	0.0	10.9	0.0	8.5
Average			**1.6**	**2.2**	**4.9**	**(9.3)**	**5.6**	**(15.9)**	**(10.3)**							
Gas Company																
Towngas China	HKD	4.4	0.2	14.8	13.9	(6.8)	(11.2)	(40.8)	(1.8)	1,517	8.5	8.1	0.8	0.7	10.3	9.6
Kulun	HKD	6.2	3.4	9.2	6.9	(10.7)	19.1	(19.1)	(10.7)	6,406	12.6	10.4	0.9	0.8	5.6	5.2
Beijing Enterprise	HKD	39.2	1.7	6.5	3.0	(16.6)	(11.2)	(34.8)	(16.5)	6,478	8.0	7.3	0.8	0.7	12.4	11.5
ENN Energy	HKD	40.1	0.2	11.4	17.1	2.0	0.5	(10.6)	(3.0)	5,592	12.6	11.1	2.2	1.9	8.2	7.3
China Resources Gas	HKD	22.5	2.7	12.3	11.1	3.7	7.4	10.0	(3.0)	6,432	14.4	12.7	2.4	2.1	9.1	8.1
China Gas Holdings	HKD	11.2	1.8	10.0	16.7	6.5	3.3	(12.1)	0.2	7,121	12.5	11.0	2.3	2.0	10.3	9.2
Shenzen Gas	HKD	12.3	(1.0)	3.4	0.2	(6.9)	23.7	18.2	(14.1)	3,014	10.8	9.6	1.1	1.0	8.7	7.9
Shann Xi	CNY	8.7	(2.4)	0.3	(3.7)	(30.2)	(28.1)	(40.0)	(31.1)	1,483	13.1	10.6	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Suntien	HKD	1.0	4.1	10.9	12.1	(19.7)	(16.4)	(41.0)	(17.7)	488	9.0	6.9	0.4	0.4	6.9	5.8
China Oil & Gas	HKD	0.5	1.1	2.2	(4.2)	(21.6)	(6.2)	(55.3)	(14.2)	341	6.9	6.1	0.6	0.6	4.4	3.8
Average			**1.2**	**8.1**	**7.3**	**(10.0)**	**(1.9)**	**(22.5)**	**(11.2)**							
EV																
LG화학	KRW	298,000	(3.2)	1.5	(1.3)	(3.6)	34.5	29.8	(9.3)	16,490	13.9	12.3	1.5	1.4	6.3	5.7
삼성SDI	KRW	97,400	(2.0)	(1.6)	1.6	(17.5)	14.6	(28.6)	(14.6)	5,592	28.1	19.5	0.6	0.6	9.6	7.3
Panasonic	JPY	1015.5	(0.5)	7.3	5.0	(25.4)	(16.9)	(32.7)	(18.1)	21,867	10.9	9.7	1.1	1.0	3.4	3.2
GS Yuasa	JPY	495.0	2.3	6.5	7.8	6.2	20.7	(9.5)	9.5	1,797	13.7	12.1	1.1	1.1	6.5	6.1
NEC	JPY	268.0	1.5	(6.9)	(9.8)	(34.0)	(28.7)	(22.5)	(30.4)	6,128	9.1	8.1	0.8	0.7	5.5	5.3
BYD Auto	CNY	53.7	0.2	2.6	4.9	(13.1)	17.2	3.3	(16.6)	17,894	42.5	29.0	4.0	3.6	15.7	13.6
Tesla Motors	USD	201.0	2.7	5.6	14.7	(12.7)	(16.9)	(0.7)	(16.2)	26,549	169.9	66.2	21.8	16.6	35.9	22.7
Kandi Technologies	USD	7.1	0.4	(0.3)	(6.9)	(27.9)	16.1	(46.8)	(34.5)	335	#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			**0.2**	**1.8**	**2.0**	**(16.0)**	**5.1**	**(13.5)**	**(16.3)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임