SK Energy Daily

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SK 증권

1. News Summary (3 page)

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News		Conclusion
WTI comment	글로벌 수요증가 기대감에 상승마감..WTI, 1.9%↑	
Headline	[주간가격] 에틸렌, WoW $50/mt 상승해 CFR SEA $1,280/mt로 마감	PE역마진 구간으로 PE 가동률 낮아지며 에틸렌 수요 감소할 수 있음
News 1.	[주간가격] MEG, WoW $30/mt 하락해 CFR China $865/mt로 마감	춘절 때 쌓아둔 재고가 그대로 부담으로 작용하며 하락 압력 지속할 것
News 2.	[주간가격] BD, WoW $10/mt 하락해 CFR China $1,430/mt로 마감	타이어 수요 약세로 SBR의 원재료인 BD 수요도 단기적으로 영향 받음
News 3.	[주간가격] SBR, 플랫한 모습 보이며 CFR SEA $1,750/mt로 마감	2월 중국 자동차 판매량이 WoW 11.1%나 감소하며 타이어 수요 감소
News 4.	[주간가격] PX, WoW $5.33/mt 하락해 FOB Korea $929/mt로 마감	사우디에서 PX 물량이 풀리며 가격 하락 압력이 지속될 전망

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	62.3	1.9	0.5	2.9	8.8	27.8
Dubai	$/bbl	61.7	0.5	2.4	3.9	0.9	23.2
Gasoline	$/bbl	75.8	0.6	2.0	3.8	0.7	20.5
Diesel	$/bbl	76.6	0.1	1.7	5.0	2.5	24.4
Complex margin	$/bbl	8.2	(0.0)	(0.2)	0.4	0.3	1.7
1M lagging	$/bbl	10.1	0.7	5.7	9.2	2.3	7.6
Petrochemical			%	%	%	%	%
Naphtha	$/t	572	0.4	3.3	6.2	(2.5)	22.1
Butadiene	$/t	1,430	0.0	2.9	5.5	30.6	(31.9)
HDPE	$/t	1,340	0.0	0.0	(0.7)	3.9	16.5
MEG	$/t	865	(1.7)	(3.4)	(14.8)	(4.4)	4.8
PX	$/t	929	(0.3)	(0.6)	(0.4)	5.6	8.8
SM	$/t	1,259	(1.9)	(5.1)	(10.8)	(3.6)	(1.6)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.69	0.3	(1.6)	3.5	4.9	(5.8)
Natural rubber	$/t	1,440	(0.7)	0.0	1.4	1.4	(28.4)
Cotton	C/lbs	82.9	(0.8)	(2.0)	9.4	9.1	5.7

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	03/12	$/t	1,220	2.7	0.8	0.6	6.6
Propylene	03/12	$/t	995	1.0	(2.9)	17.1	8.7
Benzene	03/12	$/t	883	(2.5)	(3.0)	(2.5)	(2.8)
Toluene	03/12	$/t	720	(4.0)	(5.3)	0.0	1.4
Xylene	03/12	$/t	765	0.3	0.7	10.1	4.8
PP	03/12	$/t	1,308	0.0	2.3	13.0	16.0
PVC	03/12	$/t	980	0.0	1.0	14.6	4.3
ABS	03/12	$/t	2,070	(2.4)	0.5	2.0	10.1
SBR	03/12	$/t	1,750	0.0	(0.3)	6.1	(36.4)
SM	03/12	$/t	1,398	(3.8)	(1.8)	3.3	3.9
BPA	03/12	$/t	1,963	0.0	3.7	11.2	40.9
Caustic	03/12	$/t	590	0.0	7.5	(15.7)	34.4
2-EH	03/12	$/t	1,125	0.0	2.3	10.3	9.8
Caprolactam	03/12	$/t	2,150	0.9	3.9	4.9	(7.3)
Solar				%	%	%	%
Polysilicon	03/14	$/kg	14.9	(1.5)	(8.6)	(13.9)	(5.4)
Module	03/14	$/W	0.30	(0.3)	(1.6)	(2.9)	(11.9)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	75.1	0.9	0.8	(1.9)	(9.5)	(8.5)
Shell	EUR	2,214	0.9	(2.1)	(2.2)	(8.9)	4.5
Petrochina	CNY	7.91	(0.5)	(1.5)	(1.4)	0.5	(1.6)
Gazprom	RUB	138.3	0.0	(1.1)	0.9	2.0	8.0
Petrobras	BRL	21.4	0.6	(4.3)	10.4	43.3	56.3
Refinery							
Phillips66	USD	95.8	1.4	(0.1)	4.1	(4.1)	20.2
Valero	USD	93.8	1.6	(0.6)	0.6	6.3	36.8
JX	JPY	631.0	0.1	(2.2)	(5.2)	(8.0)	14.1
Neste Oil	EUR	57.3	(0.8)	(3.7)	(2.7)	11.0	65.4

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	84.6	0.6	(0.5)	(2.6)	(9.7)	(5.8)
DowDuPont	USD	68.0	0.1	(5.9)	(5.5)	(2.9)	6.4
SABIC	SAR	110.2	0.0	1.9	4.7	9.2	13.5
Formosa Pla.	TWD	102.0	0.0	0.5	1.0	9.3	12.5
Shin-Etsu	JPY	11,155	(1.0)	1.6	(0.6)	(2.1)	15.3
Renewable							
Wacker	EUR	133.7	3.4	(2.7)	(5.2)	(16.0)	35.4
First Solar	USD	69.87	1.6	2.9	6.1	1.3	111.9
GCL-Poly	HKD	1.14	(3.4)	(7.3)	(6.6)	(8.8)	7.5
Tesla Motors	USD	321.4	(1.3)	(1.8)	(4.2)	(6.4)	22.6

4. Coverage Summary

	03/16	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,494	0.1	1.4	3.0	0.5	4.9	16.9				* 추정치는 12M fwd 기준임	
KOSPI화학	6,136	(0.7)	0.1	4.3	1.4	5.4	22.5				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	413,500	(1.3)	1.7	11.0	4.9	1.6	49.8	매수	450,000	8.8	13.80	1.95
롯데케미칼	425,500	(3.3)	(0.9)	(2.3)	16.9	4.2	16.7	매수	410,000	(3.6)	11.62	1.27
한화케미칼	30,750	0.5	(1.8)	(4.7)	2.7	(17.0)	27.6	매수	39,000	26.8	11.74	0.80
금호석유화학	93,900	(1.2)	3.6	3.1	0.5	19.3	24.5	매수	150,000	59.7	11.46	1.50
KCC	353,000	0.3	(0.8)	(1.3)	(7.6)	(5.5)	0.6	매수	450,000	27.5	13.07	0.52
OCI	148,000	0.0	(4.8)	(5.7)	17.9	38.3	79.6	매수	180,000	21.6	13.91	1.04
SKC	39,850	(1.1)	1.1	9.5	(11.1)	(4.1)	32.2	매수	55,000	38.0	10.02	0.98
SK이노베이션	208,500	(0.7)	2.0	9.4	2.5	6.4	29.5	매수	230,000	10.3	11.04	1.05
S-Oil	119,500	(0.8)	(2.0)	5.8	(3.2)	(1.2)	27.5	매수	140,000	17.2	13.66	2.17
GS	63,100	(1.1)	(4.1)	0.3	2.3	(4.4)	15.1	매수	80,000	26.8	6.17	0.81
SK가스	96,000	(1.8)	0.9	4.3	2.1	(9.0)	(12.7)	매수	130,000	35.4	8.32	0.64
포스코대우	21,100	0.0	5.5	2.4	15.6	1.7	(10.0)	매수	25,000	18.5	9.62	0.85
LG상사	27,050	(0.2)	2.9	(1.6)	(2.7)	(5.7)	(10.0)	매수	38,000	40.5	9.11	0.78
한국전력	32,050	(0.9)	(1.4)	(3.2)	(17.8)	(21.9)	(25.8)	매수	50,000	56.0	6.89	0.25
한국가스공사	47,050	(0.5)	(0.4)	6.1	8.8	9.2	0.4	매수	60,000	27.5	8.89	0.70

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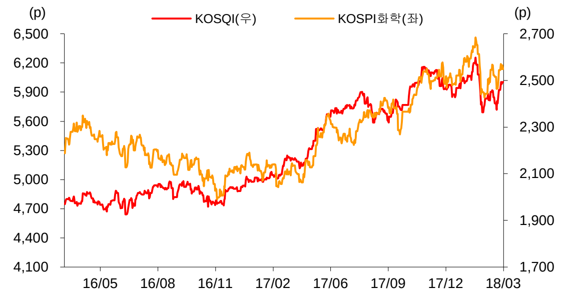
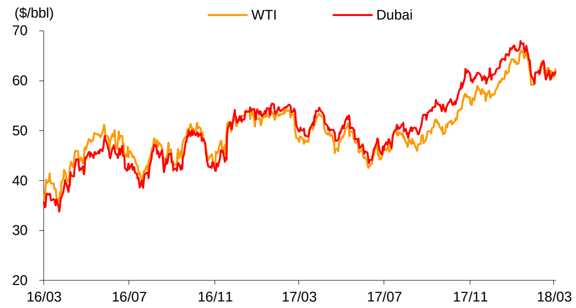
Key Chart

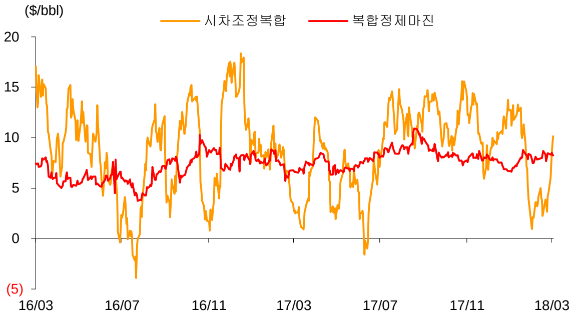
KOSPI/KOSPI화학



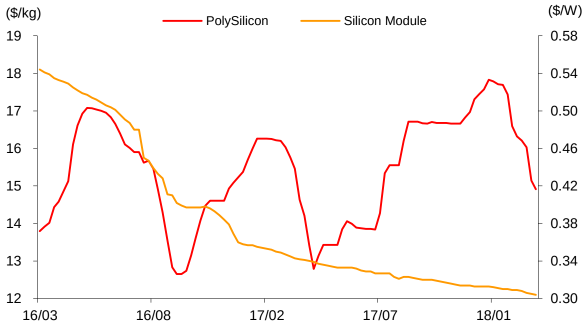
WTI/Dubai



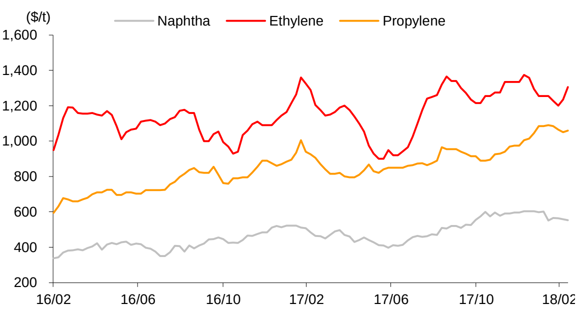
Complex & 1M lagging margin



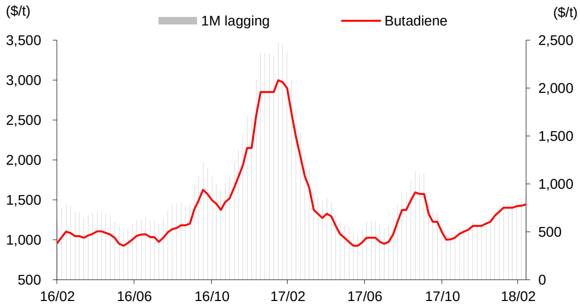
Polysilicon & Module prices



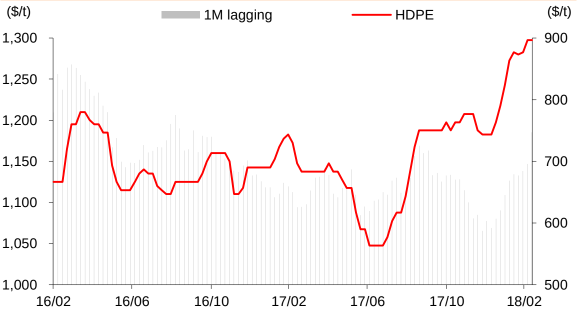
Naphtha/Ethylene/Propylene prices



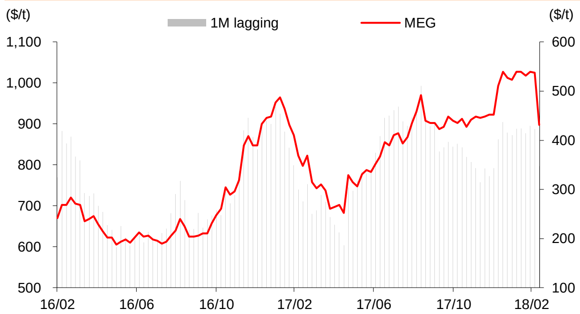
Butadiene price & 1M lagging naphtha spread



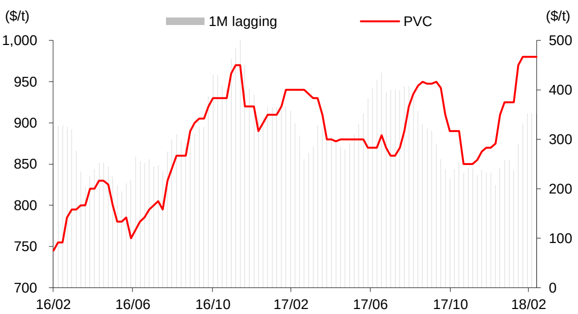
HDPE price & 1M lagging naphtha spread



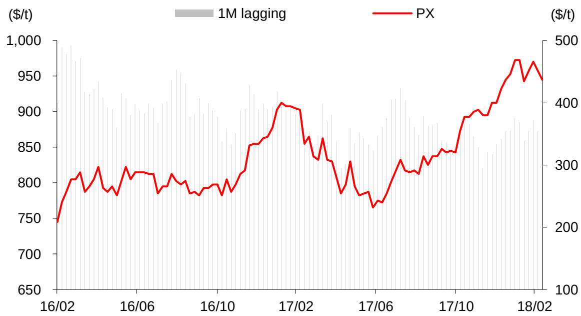
MEG price & 1M lagging naphtha spread



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, WoW $50/mt 상승해 CFR SEA $1,280/mt로 마감
결론	PE역마진 구간으로 PE 가동률 낮아지며 에틸렌 수요 감소할 수 있음
세부	
	1) 일본의 수요 증가로 금요일에만 $30~$40/mt 올라 2개월래 최고치 기록
	2) 엔드유저들이 TA시즌 돌입에 앞서 공급 부족에 대비한 스팟 수요 늘림
	3) 일본 Showa Denko와 Tosoh가 3월 초 TA에 돌입할 예정임
	4) 그러나 중국, 대만, 동남아시아에서의 수요는 제한적인 모습이었음
	5) PE역마진 구간으로 PE 가동률 낮아지며 에틸렌 수요 감소할 수 있음

WTI Comment	(출처: 연합뉴스)
제목	글로벌 수요증가 기대감에 상승마감..WTI, 1.9%↑
상승 요인	베이커 휴즈, "이번 주 미국 rig 수는 4개 늘어 800개 기록" IEA가 올해 글로벌 원유수요 전망치를 평균 9,930만b/d로 상향함
하락 요인	

Issue 1	(출처: Platts)
제목	[주간가격] MEG, WoW $30/mt 하락해 CFR China $865/mt로 마감
결론	춘절 때 쌓아둔 재고가 그대로 부담으로 작용하며 하락 압력 지속할 것
세부	
	1) 목요일 동중국항 MEG 재고가 WoW 3.4만톤 증가해 73.7만톤 기록함
	2) 주 초반 반등하는 모습을 보였으나 재고 부담으로 재차 하락함
	3) 관계자, "가격이 락바텀을 다질때까지는 시장에 수요자가 없을 것"
	4) 관계자, "중국 내 MEG 판매자들은 가격이 너무 급락해 패닉 상황"
	5) 춘절 때 쌓아둔 재고가 그대로 부담으로 작용하며 하락 압력 지속할 것

Issue 2	(출처: Platts)
제목	[주간가격] BD, WoW $10/mt 하락해 CFR China $1,430/mt로 마감
결론	타이어 수요 약세로 SBR의 원재료인 BD 수요도 단기적으로 영향 받음
세부	
	1) 중국 내수 가격은 WoW 2.6% 하락해 $1,468/mt 기록함
	2) 합성고무 생산자, "SBR 가격 약세가 원재료인 BD 수요를 제한함"
	3) 동중국 내수 SBR 가격은 WoW 5.4% 하락해 Yuan 12,000/mt 기록함
	4) 타이어 메이커, "2월 자동차 판매량 부진으로 타이어 수요 침체됨"
	5) 타이어 수요 약세로 SBR의 원재료인 BD 수요도 단기적으로 영향 받음

Issue 3	(출처: Platts)
제목	[주간가격] SBR, 플랫한 모습 보이며 CFR SEA $1,750/mt로 마감
결론	2월 중국 자동차 판매량이 WoW 11.1%나 감소하며 타이어 수요 감소
세부	
	1) 스팟 거래가 감소하고 중국 시장이 침체된 가운데 플랫으로 마감함
	2) 동중국 내수 SBR 가격은 WoW 5.4% 하락해 Yuan 12,000/mt 기록함
	3) 중국 타이어 메이커들이 높은 카본블랙 가격을 SBR에 전가 시도중임
	4) 타이어 메이커, "2월 자동차 판매량 부진으로 타이어 수요 침체됨"
	5) 2월 중국 자동차 판매량이 WoW 11.1%나 감소하며 타이어 수요 감소

Issue 4	(출처: Platts)
제목	[주간가격] PX, WoW $5.33/mt 하락해 FOB Korea $929/mt로 마감
결론	사우디에서 PX 물량이 풀리며 가격 하락 압력이 지속될 전망
세부	
	1) 트레이더, "Petro Rabigh가 다음주 말부터 134만톤 규모 공장에서 운송"
	2) 작년 2018년 term contract 협상때 해당 공장 가동에 대한 논의 많았음
	3) Zhejiang Yisheng으로부터 5월과 6월 카고 오퍼가 $10/mt 하락함
	4) 대한민국, 싱가폴, 일본, 중국 트레이더, "2월 대비 거래가 smooth함"
	5) 사우디에서 PX 물량이 풀리며 가격 하락 압력이 지속될 전망

Issue 5	(출처: Platts)
제목	[주간가격] PTA, WoW $15/mt 하락해 CFR China $770/mt로 마감
결론	사우디에서 원재료인 PX 물량 도입되며 PTA 가격에도 하락 압력 가능
세부	
	1) 내수 스팟 가격과 선물 가격 하락으로 CFR China PTA가 하락 마감함
	2) 동북아 시장은 중국 PTA 생산자들이 TA를 5월로 연기한 것에 반응함
	3) TA를 5월로 미룬 Fujian Fuhua는 150만톤의 PTA 공장을 보유함
	4) Petro Rabigh가 다음주 말부터 134만톤 규모 공장에서 운송 시작
	5) 사우디에서 원재료인 PX 물량 도입되며 PTA 가격에도 하락 압력 가능

Issue 6	(출처: PVinsights)
제목	[주간가격] 수요 회복이 더뎌 태양광 제품 가격 하락
결론	수요가 약세를 보이는 가운데 재고 부담이 더해져 약세 지속될 전망
세부	
	1) Polysilicon은 정기보수에도 불구, 바이어들 수요가 낮아 가격 못오름
	2) Multi-crystalline wafer는 3월 수요가 회복하지 못해 가격 하락 압력 지속
	3) 저효율 셀 재고량이 많아 셀 가격이 지난주에 급격히 하락하는 모습
	4) Module 가격은 메이커들이 글로벌 수요 감소로 재고 엄격 관리중임
	5) 수요가 약세를 보이는 가운데 재고 부담이 더해져 약세 지속될 전망

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SK 증권

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.814	0.813	0.813	0.806	0.851	0.837	0.929	0.833	0.904	0.887	0.814
	Change, %		0.1	0.1	1.0	(4.4)	(2.8)	(12.4)	(2.3)	(10.0)	(8.2)	(0.1)
	USD/JPY	106.0	106.3	106.8	106.2	112.6	110.8	113.3	112.6	108.8	112.1	108.7
	Change, %		(0.3)	(0.8)	(0.2)	(5.9)	(4.3)	(6.4)	(5.9)	(2.5)	(5.5)	(2.5)
	USD/KRW	1,066.2	1,065.5	1,069.8	1,063.1	1,089.3	1,131.8	1,132.1	1,066.7	1,160.5	1,130.9	1,072.2
	Change, %		0.1	(0.3)	0.3	(2.1)	(5.8)	(5.8)	(0.0)	(8.1)	(5.7)	(0.6)
Agriculture	Corn	382.8	386.8	383.0	367.5	347.5	354.8	366.0	350.8	358.5	359.4	363.9
	Change, %		(1.0)	(0.1)	4.1	10.1	7.9	4.6	9.1	6.8	6.5	5.2
	Soybean	1,049.5	1,040.8	1,029.3	1,021.5	967.3	968.8	1,001.5	951.8	987.5	975.9	1,001.9
	Change, %		0.8	2.0	2.7	8.5	8.3	4.8	10.3	6.3	7.5	4.8
	Wheat	467.8	478.8	489.0	457.8	418.3	449.0	436.0	427.0	436.4	436.0	453.0
	Change, %		(2.3)	(4.3)	2.2	11.8	4.2	7.3	9.5	7.2	7.3	3.3
	Rice	12.5	12.4	12.2	12.0	11.7	12.8	9.8	11.7	10.3	11.1	12.1
	Change, %		0.4	2.5	3.7	6.5	(2.7)	26.8	6.7	20.5	12.6	2.9
	Oats	242.3	251.0	259.5	267.8	254.3	236.0	249.3	241.0	196.3	252.3	260.0
	Change, %		(3.5)	(6.6)	(9.5)	(4.7)	2.6	(2.8)	0.5	23.4	(4.0)	(6.8)
MYR/mt	Palm Oil	2,438.0	2,434.0	2,398.0	2,505.0	2,346.0	2,885.0	2,963.0	2,444.0	2,653.8	2,787.3	2,492.2
	Change, %		0.2	1.7	(2.7)	3.9	(15.5)	(17.7)	(0.2)	(8.1)	(12.5)	(2.2)
	Cocoa	2,522.0	2,536.0	2,478.0	2,138.0	1,877.0	2,009.0	2,027.0	1,892.0	2,854.0	2,005.2	2,120.3
	Change, %		(0.6)	1.8	18.0	34.4	25.5	24.4	33.3	(11.6)	25.8	18.9
	Cotton	82.9	83.5	84.5	75.7	75.9	70.1	78.2	78.6	65.6	73.5	80.2
	Change, %		(0.8)	(2.0)	9.4	9.1	18.1	6.0	5.4	26.3	12.7	3.3
	Sugar	12.7	12.7	12.8	13.4	13.7	14.6	18.3	15.2	18.2	15.8	13.6
	Change, %		(0.7)	(1.5)	(5.5)	(7.4)	(13.1)	(30.7)	(16.6)	(30.3)	(20.0)	(7.1)
	Coffee	117.0	117.7	118.9	118.0	117.0	140.0	139.8	126.2	136.1	133.0	121.6
	Change, %		(0.6)	(1.6)	(0.8)	0.0	(16.5)	(16.3)	(7.3)	(14.0)	(12.1)	(3.8)
Energy	WTI	62.3	61.2	62.0	61.7	57.3	49.9	48.8	60.4	43.4	51.0	62.6
	Change, %		1.9	0.5	1.1	8.8	25.0	27.9	3.2	43.7	22.3	(0.5)
	Brent	66.2	65.1	65.5	64.8	63.2	55.6	51.7	66.9	45.1	54.9	66.9
	Change, %		1.7	1.1	2.1	4.7	19.0	28.0	(1.0)	46.9	20.7	(1.1)
	Natural Gas	2.7	2.7	2.7	2.6	2.6	3.0	2.9	3.0	2.6	3.0	2.9
	Change, %		0.3	(1.6)	5.1	2.9	(11.1)	(7.4)	(9.0)	5.3	(11.1)	(6.5)
	Ethanol	1.5	1.5	1.5	1.5	1.3	1.5	1.6	1.3	1.5	1.5	1.4
	Change, %		(1.4)	(1.1)	0.6	18.3	(3.4)	(4.0)	13.1	(1.4)	(0.3)	5.2
	RBOB Gasoline	194.6	192.5	190.4	175.1	165.5	166.2	159.4	179.9	140.0	162.9	184.0
	Change, %		1.1	2.2	11.1	17.6	17.1	22.1	8.2	39.0	19.5	5.8
	Coal	97.2	97.9	99.4	104.7	100.0	99.2	81.1	100.8	65.5	88.2	103.8
	Change, %		(0.7)	(2.3)	(7.2)	(2.9)	(2.1)	19.8	(3.6)	48.4	10.1	(6.4)
Metal	Gold	1,314.4	1,316.3	1,323.3	1,347.1	1,255.5	1,320.2	1,226.4	1,302.6	1,248.5	1,258.6	1,329.3
	Change, %		(0.1)	(0.7)	(2.4)	4.7	(0.4)	7.2	0.9	5.3	4.4	(1.1)
	Silver	16.3	16.4	16.6	16.7	16.1	17.6	17.3	16.9	17.1	17.1	16.8
	Change, %		(0.3)	(1.5)	(1.8)	1.7	(7.0)	(5.6)	(3.5)	(4.4)	(4.2)	(2.7)
	Copper	6,888.0	6,920.0	6,962.0	7,233.0	6,886.0	6,507.0	5,909.0	7,247.0	4,872.0	6,199.4	7,040.6
	Change, %		(0.5)	(1.1)	(4.8)	0.0	5.9	16.6	(5.0)	41.4	11.1	(2.2)
	Nickel	883.6	884.5	896.7	887.0	739.1	710.6	666.7	809.1	646.4	680.2	854.7
	Change, %		(0.1)	(1.5)	(0.4)	19.6	24.3	32.5	9.2	36.7	29.9	3.4
	Zinc	3,260.0	3,235.0	3,277.0	3,575.0	3,205.0	3,031.0	2,829.0	3,319.0	2,097.5	2,888.5	3,411.0
	Change, %		0.8	(0.5)	(8.8)	1.7	7.6	15.2	(1.8)	55.4	12.9	(4.4)
	Lead	2,384.0	2,414.8	2,376.8	2,616.0	2,545.5	2,332.3	2,238.0	2,482.8	1,868.3	2,315.7	2,539.7
	Change, %		(1.3)	0.3	(8.9)	(6.3)	2.2	6.5	(4.0)	27.6	3.0	(6.1)
	Aluminum	13,870.0	13,795.0	14,035.0	14,215.0	14,165.0	16,225.0	13,755.0	15,020.0	12,373.5	14,556.6	14,391.1
	Change, %		0.5	(1.2)	(2.4)	(2.1)	(14.5)	0.8	(7.7)	12.1	(4.7)	(3.6)
	Cobalt	88,375.0	87,125.0	84,020.0	81,326.5	72,205.0	61,850.0	53,250.0	75,205.0	25,480.1	55,906.9	80,062.7
	Change, %		1.4	5.2	8.7	22.4	42.9	66.0	17.5	246.8	58.1	10.4
	HR Coil	822.0	817.0	820.0	751.0	640.0	624.0	625.0	662.0	519.3	620.1	733.8
	Change, %		0.6	0.2	9.5	28.4	31.7	31.5	24.2	58.3	32.6	12.0
	Scrap	420.0	425.0	400.0	380.0	360.0	360.0	335.0	367.0	275.7	344.7	382.5
	Change, %		(1.2)	5.0	10.5	16.7	16.7	25.4	14.4	52.4	21.8	9.8

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

SK Energy Daily

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Refining Price Data

Daily Price		03/16	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	62.3	61.2	62.0	60.6	57.3	49.9	48.8	53.7	43.4	50.9	62.6
	Change, %		*1.9*	*0.5*	*2.9*	*8.8*	*25.0*	*27.8*	*16.0*	*43.8*	*22.5*	*(0.5)*
	Dubai	61.7	61.5	60.3	59.4	61.2	53.6	50.1	53.8	41.3	53.1	63.8
	Change, %		*0.5*	*2.4*	*3.9*	*0.9*	*15.1*	*23.2*	*14.7*	*49.5*	*16.3*	*(3.2)*
Crude Oil Product	**Gasoline(휘발유)**	75.8	75.4	74.3	73.1	75.3	71.0	62.9	69.8	56.3	68.0	77.3
	Change, %		*0.6*	*2.0*	*3.8*	*0.7*	*6.8*	*20.5*	*8.6*	*34.8*	*11.5*	*(1.9)*
	Kerosene(등유)	76.4	76.3	76.8	75.5	74.5	67.4	60.4	66.4	52.9	65.2	79.9
	Change, %		*0.1*	*(0.6)*	*1.2*	*2.6*	*13.4*	*26.4*	*15.0*	*44.5*	*17.1*	*(4.4)*
	Diesel(경유)	76.6	76.5	75.3	72.9	74.7	68.3	61.5	65.5	52.1	65.6	78.4
	Change, %		*0.1*	*1.7*	*5.0*	*2.5*	*12.1*	*24.4*	*16.9*	*46.9*	*16.7*	*(2.4)*
	Bunker-C	56.5	56.2	55.3	55.2	56.0	51.2	45.3	52.1	35.5	49.7	57.6
	Change, %		*0.5*	*2.2*	*2.4*	*0.9*	*10.4*	*24.6*	*8.5*	*59.0*	*13.8*	*(1.8)*
	Naphtha	62.2	62.1	60.3	58.3	64.7	54.3	50.0	53.5	42.6	53.7	63.3
	Change, %		*0.2*	*3.2*	*6.6*	*(3.9)*	*14.6*	*24.4*	*16.3*	*46.0*	*15.7*	*(1.7)*
Dubai Spread	**Gasoline(휘발유)**	14.1	13.9	14.1	13.7	14.1	17.4	12.8	16.0	14.9	14.9	13.5
	Change		*0.2*	*0.1*	*0.4*	*(0.0)*	*(3.3)*	*1.3*	*(1.9)*	*(0.8)*	*(0.8)*	*0.6*
	Kerosene(등유)	14.7	14.9	16.6	16.1	13.3	13.8	10.3	12.6	11.6	12.1	16.1
	Change		*(0.2)*	*(1.9)*	*(1.4)*	*1.3*	*0.9*	*4.4*	*2.1*	*3.1*	*2.5*	*(1.4)*
	Diesel(경유)	14.8	15.0	15.0	13.5	13.5	14.7	11.4	11.7	10.8	12.5	14.6
	Change		*(0.2)*	*(0.2)*	*1.3*	*1.3*	*0.2*	*3.4*	*3.1*	*4.0*	*2.3*	*0.2*
	Bunker-C	(5.2)	(5.2)	(5.0)	(4.2)	(5.2)	(2.5)	(4.8)	(1.8)	(5.8)	(3.4)	(6.2)
	Change		*(0.0)*	*(0.3)*	*(1.0)*	*(0.0)*	*(2.8)*	*(0.5)*	*(3.5)*	*0.5*	*(1.8)*	*1.0*
	Naphtha	0.4	0.6	(0.0)	(1.1)	3.5	0.6	(0.1)	(0.4)	1.3	0.6	(0.5)
	Change		*(0.2)*	*0.4*	*1.5*	*(3.1)*	*(0.2)*	*0.6*	*0.8*	*(0.8)*	*(0.2)*	*1.0*
Refining Margin	**Simple(단순)**	2.8	2.9	3.2	3.0	2.5	4.6	1.9	3.8	1.9	3.2	2.3
	Change		*(0.1)*	*(0.4)*	*(0.2)*	*0.3*	*(1.7)*	*1.0*	*(1.0)*	*0.9*	*(0.3)*	*0.5*
	Complex(복합)	8.2	8.3	8.4	7.8	7.9	9.7	6.6	8.3	7.0	8.0	7.8
	Change		*(0.0)*	*(0.2)*	*0.4*	*0.3*	*(1.5)*	*1.7*	*(0.0)*	*1.3*	*0.3*	*0.5*
	Complex(lagging)	10.1	9.5	4.5	0.9	7.9	14.1	2.6	18.0	8.5	8.9	7.8
	Change		*0.7*	*5.7*	*9.2*	*2.3*	*(4.0)*	*7.6*	*(7.8)*	*1.7*	*1.2*	*2.3*

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

SK Energy Daily

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SK증권

Petrochemical Price Data

Daily Price			03/16	03/15	03/14	03/13	03/12	03/09	03/08	03/07	03/06	03/05
Spot Price	**Naphtha**	CFR Japan	572.0	570.0	566.0	558.0	564.5	553.5	562.8	565.3	568.8	571.3
	Ethylene	CFR SE Asia	1,280.0	1,250.0	1,250.0	1,250.0	1,230.0	1,230.0	1,230.0	1,230.0	1,200.0	1,170.0
	Propylene	FOB Korea	1,025.0	1,010.0	1,010.0	1,015.0	1,015.0	1,025.0	1,030.0	1,030.0	1,030.0	1,025.0
	Butadiene	FOB Korea	1,430.0	1,430.0	1,430.0	1,430.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0	1,390.0
	HDPE	CFR FE Asia	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,345.0	1,345.0	1,350.0
	LDPE	CFR FE Asia	1,225.0	1,225.0	1,225.0	1,225.0	1,225.0	1,230.0	1,230.0	1,230.0	1,240.0	1,240.0
	LLDPE	CFR FE Asia	1,205.0	1,205.0	1,205.0	1,205.0	1,205.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0
	MEG	CFR China	865.0	880.0	917.0	910.0	895.0	895.0	935.0	951.0	983.0	983.0
	PP	CFR FE Asia	1,200.0	1,200.0	1,200.0	1,225.0	1,225.0	1,225.0	1,230.0	1,230.0	1,230.0	1,220.0
	PX	CFR China	929.0	932.0	932.5	935.5	935.3	934.3	942.0	944.3	955.3	952.3
	PTA	CFR China	770.0	775.0	775.0	780.0	785.0	785.0	793.0	793.0	795.0	790.0
	Benzene	FOB Korea	835.3	842.7	861.7	864.0	875.0	859.0	857.7	875.0	887.7	877.0
	Toluene	FOB Korea	677.0	677.0	677.0	682.0	686.0	685.0	685.0	695.0	703.0	703.0
	Xylene	FOB Korea	744.0	746.0	749.0	745.0	745.0	748.0	749.0	762.0	765.0	775.0
	SM	FOB Korea	1,259.0	1,284.0	1,326.0	1,326.0	1,326.0	1,326.0	1,311.0	1,336.0	1,371.0	1,374.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	553.0	558.0	550.5	590.5	600.0	464.0	484.5	399.5	493.5	580.1
	Change, %			(0.9)	0.5	(6.4)	(7.8)	19.2	14.1	38.4	12.1	(4.7)
	Ethylene	CFR SE Asia	1,220.0	1,187.5	1,210.0	1,212.5	1,180.0	1,145.0	990.0	1,040.9	1,090.9	1,238.8
	Change, %			2.7	0.8	0.6	3.4	6.6	23.2	17.2	11.8	(1.5)
	Propylene	CFR SE Asia	995.0	985.0	1,025.0	850.0	800.0	915.0	815.0	705.7	823.6	1,058.5
	Change, %			1.0	(2.9)	17.1	24.4	8.7	22.1	41.0	20.8	(6.0)
	Butadiene	CFR SE Asia	1,390.0	1,375.0	1,350.0	1,075.0	925.0	2,250.0	2,100.0	1,116.8	1,481.1	1,306.0
	Change, %			1.1	3.0	29.3	50.3	(38.2)	(33.8)	24.5	(6.1)	6.4
	Benzene	CFR SE Asia	882.5	905.0	910.0	905.0	865.0	907.5	822.5	646.7	838.8	918.3
	Change, %			(2.5)	(3.0)	(2.5)	2.0	(2.8)	7.3	36.5	5.2	(3.9)
	Toluene	CFR SE Asia	720.0	750.0	760.0	720.0	717.5	710.0	690.0	630.5	689.5	749.5
	Change, %			(4.0)	(5.3)	0.0	0.3	1.4	4.3	14.2	4.4	(3.9)
	Xylene	CFR SE Asia	765.0	762.5	760.0	695.0	672.5	730.0	675.0	627.7	668.8	753.5
	Change, %			0.3	0.7	10.1	13.8	4.8	13.3	21.9	14.4	1.5
Spread	**Ethylene**	-Naphtha	667.0	629.5	659.5	622.0	580.0	681.0	505.5	641.4	597.4	658.7
	Change, %			6.0	1.1	7.2	15.0	(2.1)	31.9	4.0	11.6	1.3
	Propylene	-Naphtha	442.0	427.0	474.5	259.5	200.0	451.0	330.5	306.2	330.1	478.5
	Change, %			3.5	(6.8)	70.3	121.0	(2.0)	33.7	44.4	33.9	(7.6)
	Butadiene	-Naphtha	837.0	817.0	799.5	484.5	325.0	1,786.0	1,615.5	717.3	987.6	726.0
	Change, %			2.4	4.7	72.8	157.5	(53.1)	(48.2)	16.7	(15.2)	15.3
	Benzene	-Naphtha	329.5	347.0	359.5	314.5	265.0	443.5	338.0	247.2	345.3	338.2
	Change, %			(5.0)	(8.3)	4.8	24.3	(25.7)	(2.5)	33.3	(4.6)	(2.6)
	Toluene	-Naphtha	167.0	192.0	209.5	129.5	117.5	246.0	205.5	231.0	196.0	169.5
	Change, %			(13.0)	(20.3)	29.0	42.1	(32.1)	(18.7)	(27.7)	(14.8)	(1.4)
	Xylene	-Naphtha	212.0	204.5	209.5	104.5	72.5	266.0	190.5	228.2	175.3	173.5
	Change, %			3.7	1.2	102.9	192.4	(20.3)	11.3	(7.1)	20.9	22.2

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

SK Energy Daily

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SK 증권

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**HDPE**	CFR SE Asia	1,297.5	1,297.5	1,282.5	1,207.5	1,197.5	1,147.5	1,142.5	1,134.6	1,142.5	1,255.3
	Change, %			*0.0*	*1.2*	*7.5*	*8.4*	*13.1*	*13.6*	*14.4*	*13.6*	*3.4*
	MEG	CFR SE Asia	897.5	1,025.0	1,027.5	915.0	912.5	797.5	847.5	660.8	850.6	1,006.3
	Change, %			*(12.4)*	*(12.7)*	*(1.9)*	*(1.6)*	*12.5*	*5.9*	*35.8*	*5.5*	*(10.8)*
	PVC	CFR SE Asia	980.0	980.0	970.0	855.0	890.0	940.0	920.0	823.4	899.9	945.0
	Change, %			*0.0*	*1.0*	*14.6*	*10.1*	*4.3*	*6.5*	*19.0*	*8.9*	*3.7*
	PP	CFR SE Asia	1,307.5	1,307.5	1,277.5	1,157.5	1,147.5	1,127.5	1,032.5	978.4	1,099.6	1,253.4
	Change, %			*0.0*	*2.3*	*13.0*	*13.9*	*16.0*	*26.6*	*33.6*	*18.9*	*4.3*
	2-EH	CFR Korea	1,125.0	1,125.0	1,100.0	1,020.0	980.0	1,025.0	865.0	772.4	970.0	1,078.0
	Change, %			*0.0*	*2.3*	*10.3*	*14.8*	*9.8*	*30.1*	*45.7*	*16.0*	*4.4*
	ABS	CFR SE Asia	2,070.0	2,120.0	2,060.0	2,030.0	1,920.0	1,880.0	1,635.0	1,347.1	1,844.7	2,052.0
	Change, %			*(2.4)*	*0.5*	*2.0*	*7.8*	*10.1*	*26.6*	*53.7*	*12.2*	*0.9*
	SBR	CFR SE Asia	1,750.0	1,750.0	1,755.0	1,650.0	1,670.0	2,750.0	2,000.0	1,483.0	1,980.5	1,727.0
	Change, %			*0.0*	*(0.3)*	*6.1*	*4.8*	*(36.4)*	*(12.5)*	*18.0*	*(11.6)*	*1.3*
	SM	CFR SE Asia	1,397.5	1,452.5	1,422.5	1,352.5	1,262.5	1,345.0	1,205.0	1,064.6	1,253.8	1,410.8
	Change, %			*(3.8)*	*(1.8)*	*3.3*	*10.7*	*3.9*	*16.0*	*31.3*	*11.5*	*(0.9)*
	Caustic	FOB NEA	590.0	590.0	549.0	699.5	674.0	439.0	422.5	316.6	491.2	577.2
	Change, %			*0.0*	*7.5*	*(15.7)*	*(12.5)*	*34.4*	*39.6*	*86.4*	*20.1*	*2.2*
	PX	CFR SE Asia	945.0	957.5	942.5	895.0	892.5	855.0	855.0	790.4	844.4	954.8
	Change, %			*(1.3)*	*0.3*	*5.6*	*5.9*	*10.5*	*10.5*	*19.6*	*11.9*	*(1.0)*
	PO	CFR China	1,962.5	1,962.5	1,892.5	1,765.0	1,777.5	1,392.5	1,562.5	1,396.8	1,601.2	1,948.3
	Change, %			*0.0*	*3.7*	*11.2*	*10.4*	*40.9*	*25.6*	*40.5*	*22.6*	*0.7*
	Caprolactam	CFR SE Asia	2,150.0	2,130.0	2,070.0	2,050.0	2,090.0	2,320.0	1,850.0	1,344.9	1,936.4	2,063.0
	Change, %			*0.9*	*3.9*	*4.9*	*2.9*	*(7.3)*	*16.2*	*59.9*	*11.0*	*4.2*
	PTA	CFR SE Asia	810.0	790.0	782.5	725.0	700.0	667.5	642.5	613.7	667.8	771.0
	Change, %			*2.5*	*3.5*	*11.7*	*15.7*	*21.3*	*26.1*	*32.0*	*21.3*	*5.1*
Spread	**HDPE**		744.5	739.5	732.0	617.0	597.5	683.5	658.0	735.1	649.0	675.2
	Change, %			*0.7*	*1.7*	*20.7*	*24.6*	*8.9*	*13.1*	*1.3*	*14.7*	*10.3*
	MEG		344.5	467.0	477.0	324.5	312.5	333.5	363.0	261.3	357.1	426.2
	Change, %			*(26.2)*	*(27.8)*	*6.2*	*10.2*	*3.3*	*(5.1)*	*31.9*	*(3.5)*	*(19.2)*
	PVC		427.0	422.0	419.5	264.5	290.0	476.0	435.5	423.9	406.4	365.0
	Change, %			*1.2*	*1.8*	*61.4*	*47.2*	*(10.3)*	*(2.0)*	*0.7*	*5.1*	*17.0*
	PP		754.5	749.5	727.0	567.0	547.5	663.5	548.0	578.9	606.1	673.3
	Change, %			*0.7*	*3.8*	*33.1*	*37.8*	*13.7*	*37.7*	*30.3*	*24.5*	*12.1*
	2-EH		572.0	567.0	549.5	429.5	380.0	561.0	380.5	372.9	476.5	498.0
	Change, %			*0.9*	*4.1*	*33.2*	*50.5*	*2.0*	*50.3*	*53.4*	*20.0*	*14.9*
	ABS		1,517.0	1,562.0	1,509.5	1,439.5	1,320.0	1,416.0	1,150.5	947.6	1,351.2	1,472.0
	Change, %			*(2.9)*	*0.5*	*5.4*	*14.9*	*7.1*	*31.9*	*60.1*	*12.3*	*3.1*
	SBR	BD spread	360.0	375.0	405.0	575.0	745.0	500.0	(100.0)	366.2	499.4	421.0
	Change, %			*(4.0)*	*(11.1)*	*(37.4)*	*(51.7)*	*(28.0)*	*(460.0)*	*(1.7)*	*(27.9)*	*(14.5)*
	SM		844.5	894.5	872.0	762.0	662.5	881.0	720.5	665.1	760.3	830.7
	Change, %			*(5.6)*	*(3.2)*	*10.8*	*27.5*	*(4.1)*	*17.2*	*27.0*	*11.1*	*1.7*
	Caustic											
	Change, %											
	PX		392.0	399.5	392.0	304.5	292.5	391.0	370.5	390.9	351.0	374.7
	Change, %			*(1.9)*	*0.0*	*28.7*	*34.0*	*0.3*	*5.8*	*0.3*	*11.7*	*4.6*
	PO	propylene sprea	967.5	977.5	867.5	915.0	977.5	477.5	747.5	691.1	777.6	889.8
	Change, %			*(1.0)*	*11.5*	*5.7*	*(1.0)*	*102.6*	*29.4*	*40.0*	*24.4*	*8.7*
	Caprolactam	benzene spread	1,267.5	1,225.0	1,160.0	1,145.0	1,225.0	1,412.5	1,027.5	698.2	1,097.6	1,144.8
	Change, %			*3.5*	*9.3*	*10.7*	*3.5*	*(10.3)*	*23.4*	*81.5*	*15.5*	*10.7*
	PTA	px spread	148.5	119.8	122.8	98.5	75.3	69.0	44.0	60.4	76.7	102.7
	Change, %			*24.0*	*21.0*	*50.8*	*97.3*	*115.2*	*237.5*	*145.8*	*93.6*	*44.6*

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

SK Energy Daily

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Global peers

	Currency	03/16	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
Petrochemical																
DowDuPont	USD	68.0	0.1	(5.9)	(5.5)	(2.9)	(2.7)	6.4	(4.6)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	107.8	0.8	(1.4)	7.7	19.5	26.9	36.6	16.4	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	84.6	0.6	(0.5)	(2.6)	(9.7)	(1.9)	(5.8)	(7.8)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	79.7	(1.2)	(1.1)	1.7	7.1	2.2	6.1	9.1	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	108.2	(0.3)	(0.5)	8.0	4.1	11.7	17.3	6.5	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	63.4	(1.3)	(8.0)	(6.1)	(1.9)	(1.0)	(3.5)	(4.3)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	618	(0.2)	0.2	(7.3)	(20.4)	(10.4)	(6.4)	(23.7)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,034	(1.2)	(0.5)	(3.7)	(14.3)	(2.7)	18.0	(16.4)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	11,155	(1.0)	1.6	(0.6)	(2.1)	11.8	15.3	(2.6)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,408	(0.3)	3.7	6.3	(2.5)	2.3	28.4	(3.2)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,479	(0.4)	(0.9)	6.9	12.4	16.8	26.9	11.8	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,500	(1.4)	(1.4)	4.8	(16.0)	(9.6)	(3.8)	(15.1)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	110.2	0.0	1.9	4.7	9.2	8.8	13.5	8.6	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	70.5	0.0	3.2	8.6	21.7	23.6	25.1	19.4	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	102.0	0.0	0.5	1.0	9.3	6.9	12.5	3.3	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	110.0	2.8	4.3	4.3	15.3	17.4	16.5	6.8	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	81.7	1.7	3.0	7.2	9.4	7.9	13.6	4.9	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.97	(0.2)	0.8	3.1	(4.6)	(5.4)	(8.6)	(5.7)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.28	(0.9)	(1.7)	0.4	(16.5)	(28.8)	(40.6)	(14.6)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	912	0.0	(0.1)	(1.0)	(0.9)	8.3	40.5	0.2	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	104.9	0.0	11.6	(0.2)	10.4	17.9	(6.8)	8.1	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	100.5	2.3	5.8	7.2	20.4	28.8	39.1	18.2	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.2	0.0	2.1	0.6	9.4	11.2	12.0	5.8	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	413,500	(1.3)	1.7	11.0	4.9	3.1	48.5	2.1	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	425,500	(3.3)	(0.9)	(2.3)	16.9	9.8	12.4	15.6	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	30,750	0.5	(1.8)	(4.7)	2.7	(17.7)	23.5	(2.7)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	93,900	(1.2)	3.6	3.1	0.5	21.8	22.6	(5.6)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	39,850	(1.1)	1.1	9.5	(11.1)	(3.4)	30.9	(15.2)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	62,000	0.6	4.7	12.7	(6.8)	20.2	28.2	(1.7)	359	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
효성	KRW	9,360	(0.6)	(2.2)	3.3	17.0	32.8	11.3	23.5	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(0.2)**	**0.8**	**2.6**	**2.7**	**6.9**	**14.3**	**1.2**							
Refinery																
Valero	USD	93.8	1.6	(0.6)	0.6	6.3	31.9	36.8	2.0	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	54.9	1.7	(0.2)	0.5	5.3	18.1	19.8	0.1	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	116.0	(0.9)	2.2	4.0	3.6	9.4	8.4	0.4	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	99.2	2.0	(2.9)	3.2	(11.1)	(3.1)	16.5	(13.2)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	69.7	1.5	(0.8)	2.6	6.0	31.6	36.1	5.6	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	32.0	0.8	(2.3)	(6.3)	(15.2)	(5.0)	(21.5)	(22.8)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	46.5	2.0	(0.0)	0.2	(2.8)	43.6	63.2	(9.2)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	95.8	1.4	(0.1)	4.1	(4.1)	9.3	20.2	(5.3)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	25.9	2.6	2.4	(2.6)	(7.2)	1.8	(4.4)	(16.6)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	631.0	0.1	(2.2)	(5.2)	(8.0)	15.0	14.1	(13.2)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	3,935.0	(0.4)	(3.0)	1.0	(9.2)	38.2	0.8	(13.0)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	57.3	(0.8)	(3.7)	(2.7)	11.0	59.4	65.4	7.5	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	74.7	3.5	2.9	3.4	6.0	16.7	24.1	5.0	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	47.5	(0.4)	(0.7)	4.2	9.4	(2.2)	8.8	7.3	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	208,500	(0.7)	2.0	9.4	2.5	10.3	29.1	2.0	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	119,500	(0.8)	(2.0)	5.8	(3.2)	2.6	25.3	2.1	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	63,100	(1.1)	(4.1)	0.3	2.3	(6.0)	14.3	1.4	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.7**	**(0.8)**	**1.3**	**(0.5)**	**16.0**	**21.0**	**(3.5)**							

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

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Global peers

	Currency	03/16	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
E&P/Shale																
Exxon Mobil	USD	75	0.9	0.8	(1.9)	(9.5)	(6.2)	(8.5)	(10.2)	318,318	16.1	16.1	1.7	1.6	7.4	7.2
BP	GBP	474	2.0	(0.9)	0.1	(6.2)	5.7	3.2	(9.4)	131,516	14.5	13.8	1.3	1.3	5.2	5.0
Shell	EUR	2,214	0.9	(2.1)	(2.2)	(8.9)	5.3	4.5	(10.7)	259,212	13.0	12.1	1.3	1.3	5.7	5.5
Chevron	USD	115	(0.2)	(1.6)	2.9	(3.6)	0.7	7.0	(7.8)	220,443	18.6	18.4	1.5	1.5	6.6	6.4
Total	EUR	48	1.9	2.8	4.1	2.7	6.4	1.4	3.8	154,637	12.4	12.0	1.3	1.2	5.4	5.1
Sinopec	CNY	6	0.0	0.5	1.7	8.3	8.4	13.8	4.7	117,892	11.9	11.3	1.0	1.0	4.4	4.3
Petrochina	CNY	8	(0.5)	(1.5)	(1.4)	0.5	(0.9)	(1.6)	(2.2)	216,566	26.7	17.0	1.2	1.1	5.9	5.6
CNOOC	CNY	11	(0.5)	2.3	5.8	9.4	(1.2)	(14.4)	5.3	63,879	8.9	8.8	1.0	0.9	3.6	3.5
Gazprom	RUB	138	0.0	(1.1)	0.9	2.0	12.9	8.0	5.9	56,884	3.8	3.9	0.3	0.2	3.5	3.5
Rosneft	RUB	314	0.0	0.3	(3.1)	4.9	(1.7)	0.1	7.8	57,876	7.1	6.2	0.8	0.8	4.6	4.3
Anadarko	USD	59	1.1	0.9	(1.1)	23.2	34.4	(7.7)	9.1	31,166	41.3	38.1	2.5	2.4	6.3	5.8
Petrobras	BRL	21	0.6	(4.3)	10.4	43.3	42.5	56.3	33.1	89,511	10.2	8.2	0.9	0.8	5.4	5.0
Lukoil	USD	3,800	0.0	0.3	1.3	11.1	27.6	22.8	14.0	56,613	6.3	6.3	0.8	0.7	N/A	N/A
Kinder	USD	16	0.6	0.5	(3.8)	(8.5)	(15.2)	(23.9)	(9.2)	47,497	20.2	18.3	1.1	1.1	10.2	9.8
Statoil	NOK	179	0.4	0.1	1.7	5.4	16.8	19.9	1.9	76,902	15.5	14.8	1.8	1.7	3.5	3.3
BHP	AUD	29	1.0	3.0	(7.5)	5.2	11.0	16.1	(1.4)	114,785	15.6	16.5	2.0	1.9	6.2	6.2
PTT E&P	THB	117	0.9	3.1	4.0	23.8	31.8	28.2	17.0	14,887	13.4	12.8	1.2	1.1	3.8	3.7
Petronas gas	MYR	18	0.0	3.4	2.9	10.8	(3.1)	(9.1)	3.0	9,099	18.8	18.4	2.7	2.6	10.5	10.3
Chesapeake	USD	3	1.3	(1.3)	12.1	(12.8)	(23.5)	(43.9)	(22.7)	2,782	3.9	4.1	#N/A N/A	5.0	5.9	5.9
Noble Energy	USD	29	0.2	(5.4)	11.9	14.6	12.9	(13.3)	0.9	14,470	37.2	24.3	1.4	1.3	7.3	6.3
Average		**0**	**0.5**	**(0.0)**	**1.9**	**5.8**	**8.2**	**2.9**	**1.6**							
PV																
WACKER	EUR	133.7	3.4	(2.7)	(5.2)	(16.0)	19.4	35.4	(17.6)	8,566	19.0	16.2	2.0	1.9	6.7	6.4
GCL-Poly	HKD	1.1	(3.4)	(7.3)	(6.6)	(8.8)	11.8	7.5	(18.6)	2,703	6.8	6.0	0.7	0.6	6.4	5.9
SunPower	USD	7.2	2.6	0.7	(5.6)	(23.1)	(14.1)	(1.0)	(14.5)	1,009	#N/A N/A	#N/A N/A	4.2	3.7	12.7	8.6
Canadian Solar	USD	15.5	(1.6)	(4.3)	(1.5)	(10.8)	(10.3)	8.6	(8.1)	898	8.7	9.4	0.9	0.9	9.1	9.6
JA Solar	USD	6.9	(5.6)	(7.8)	(6.9)	(7.9)	(13.2)	27.1	(8.2)	326	13.0	10.9	1.5	1.5	3.9	3.5
Yingli	USD	1.7	(4.1)	(3.5)	2.5	(12.7)	(31.8)	(27.2)	(2.4)	30	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
First Solar	USD	69.9	1.6	2.9	6.1	1.3	38.5	111.9	3.5	7,300	42.6	21.0	1.3	1.3	12.4	7.2
한화큐셀	USD	8.2	2.5	2.6	1.8	12.0	7.5	5.7	17.1	684	37.4	26.5	#N/A N/A	#N/A N/A	8.5	7.7
OCI	KRW	148,000	0.0	(4.8)	(5.7)	17.9	36.4	77.0	8.8	3,296	0.0	13.8	0.0	1.0	0.0	6.7
웅진에너지	KRW	7,150	(1.4)	(0.6)	(1.8)	(19.3)	(22.5)	44.7	(13.0)	198	N/A	0.0	1.0	0.0	6.7	0.0
신성솔라에너지	KRW	1,795	(1.1)	0.0	0.0	(14.3)	(17.7)	(6.5)	(6.3)	290	N/A	1.0	0.0	6.7	0.0	8.5
Average			**(0.6)**	**(2.3)**	**(2.1)**	**(7.4)**	**0.4**	**25.8**	**(5.4)**							
Gas Company																
Towngas China	HKD	6.4	0.0	3.7	1.3	2.9	23.2	41.6	2.4	2,270	13.2	11.9	1.1	1.1	11.4	10.5
Kulun	HKD	7.2	1.3	0.4	1.8	(0.1)	(3.6)	2.6	(11.9)	7,381	9.6	8.5	1.1	1.0	5.4	5.0
Beijing Enterprise	HKD	43.4	1.6	(1.0)	(0.5)	1.4	1.5	1.8	(6.5)	6,984	7.6	6.8	0.8	0.7	13.1	12.9
ENN Energy	HKD	62.6	0.6	2.0	(1.7)	16.1	21.8	41.3	12.3	8,657	13.9	11.9	2.7	2.3	8.5	7.5
China Resources Gas	HKD	25.8	0.0	(1.5)	(2.8)	(7.7)	(2.1)	(6.4)	(9.2)	7,303	13.6	12.2	2.4	2.1	8.0	7.4
China Gas Holdings	HKD	25.3	3.9	6.5	4.3	16.9	20.8	101.8	17.1	16,029	17.3	14.6	4.2	3.5	13.4	11.6
Shenzen Gas	HKD	15.7	0.3	1.2	0.9	15.1	9.5	34.0	5.5	4,068	10.8	10.0	1.3	1.2	7.8	7.8
Shann Xi	CNY	7.3	(0.4)	(2.3)	2.5	(13.3)	(14.5)	(23.9)	(13.4)	1,284	13.9	15.7	1.4	1.3	#N/A N/A	#N/A N/A
Suntien	HKD	2.0	(1.5)	(0.5)	4.3	0.0	2.1	28.1	(5.3)	929	5.8	5.1	0.6	0.6	8.2	7.1
China Oil & Gas	HKD	0.7	(2.9)	0.0	(6.9)	9.8	26.4	11.7	(21.2)	498	10.3	8.9	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.3**	**0.9**	**0.3**	**4.1**	**8.5**	**23.3**	**(3.0)**							
EV																
LG화학	KRW	413,500	(1.3)	1.7	11.0	4.9	3.1	48.5	2.1	27,261	14.5	13.4	1.8	1.6	6.6	6.1
삼성SDI	KRW	215,500	0.5	9.7	19.4	3.1	0.5	58.5	5.4	13,839	16.5	12.4	1.2	1.1	13.9	11.2
Panasonic	JPY	1684.0	(0.3)	3.0	5.0	0.9	4.5	32.9	2.1	38,938	16.0	13.8	2.1	1.9	6.2	5.7
GS Yuasa	JPY	579.0	(1.2)	0.7	0.2	6.0	0.9	6.6	3.2	2,257	16.5	14.8	1.3	1.2	7.1	6.5
NEC	JPY	3225.0	(0.5)	0.6	1.9	2.9	9.0	11.2	6.1	7,918	21.8	15.2	0.9	0.9	7.0	6.2
BYD Auto	CNY	64.2	(0.7)	(2.0)	6.2	2.4	20.3	28.4	(1.3)	27,059	27.5	22.0	2.9	2.6	13.0	11.4
Tesla Motors	USD	321.4	(1.3)	(1.8)	(4.2)	(6.4)	(15.4)	22.6	3.2	54,282	#N/A N/A	161.8	11.8	10.6	46.0	18.2
Kandi Technologies	USD	5.0	(3.9)	(6.2)	(13.9)	(28.8)	6.5	33.8	(27.2)	267	#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			**(1.1)**	**0.7**	**3.2**	**(1.9)**	**3.7**	**30.3**	**(0.8)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임