SK Energy Daily

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SK 증권

1. News Summary (3 page)

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News		Conclusion
WTI comment	미 증산 우려에 하락…WTI 0.5% ↓	
Headline	[주간가격] 에틸렌, WoW 20$/mt 하락해 CFR SEA 1,220$/mt로 마감	크래커 TA 돌입으로 단기적으로 가격 하락압력이 잦아들 전망
News 1.	[주간가격] MEG, WoW 20$/mt 상승해 CFR China 1,025$/mt로 마감	리스탁킹 수요와 운송차질로 인한 낮은 재고 레벨로 강세 지속 전망
News 2.	[주간가격] BD, WoW 5$/mt 하락해 FOB Korea 1,345$/mt로 마감	리스탁킹 수요와 주요 크래커 TA 돌입으로 가격 강세 지속 전망됨
News 3.	[주간가격] SBR, WoW 40$/mt 상승해 CFR NEA 1,680$/mt로 마감	춘절 가격 효과도 있지만 천연고무 재배면적 부족으로도 강세 가능
News 4.	[주간가격] PX, WoW 1.5$/mt 상승해 FOB Korea 963.17$/mt로 마감	상반기 유가 강세 기조와 맞물려 센티가 중기적으로 좋을 전망

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	65.5	(0.5)	(1.0)	5.5	17.6	21.6
Dubai	$/bbl	67.0	1.4	(0.6)	2.6	13.7	20.9
Gasoline	$/bbl	82.8	1.5	3.0	8.1	12.2	17.3
Diesel	$/bbl	82.9	1.1	(0.3)	3.6	18.3	23.9
Complex margin	$/bbl	8.7	(0.1)	1.1	1.6	1.0	1.4
1M lagging	$/bbl	11.3	0.7	(1.3)	(0.3)	(0.9)	3.3
Petrochemical			%	%	%	%	%
Naphtha	$/t	604	0.4	0.9	(2.2)	5.4	14.5
Butadiene	$/t	1,345	(0.4)	(0.4)	22.3	42.3	(55.2)
HDPE	$/t	1,350	0.0	2.3	5.5	8.9	13.9
MEG	$/t	1,025	0.5	2.0	6.2	14.1	7.9
PX	$/t	963	0.4	0.2	5.1	12.6	7.7
SM	$/t	1,417	0.9	0.6	8.7	21.2	(6.5)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.85	(0.4)	(10.4)	3.7	(7.2)	(17.2)
Natural rubber	$/t	1,470	0.0	(2.0)	2.1	6.5	(34.7)
Cotton	C/lbs	77.3	(1.3)	(4.0)	(0.9)	12.5	1.2

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	01/29	$/t	1,255	(3.1)	(1.4)	11.1	15.1
Propylene	01/29	$/t	1,020	2.5	13.6	26.3	6.8
Benzene	01/29	$/t	965	1.8	8.4	19.1	(4.9)
Toluene	01/29	$/t	765	1.3	4.1	10.9	(0.6)
Xylene	01/29	$/t	755	2.0	6.0	15.3	5.6
PP	01/29	$/t	1,228	1.7	6.0	7.0	16.1
PVC	01/29	$/t	925	0.0	6.3	3.9	1.6
ABS	01/29	$/t	2,020	0.0	(1.5)	5.2	10.4
SBR	01/29	$/t	1,755	6.4	6.4	3.2	(42.5)
SM	01/29	$/t	1,433	3.6	11.0	18.4	2.9
BPA	01/29	$/t	1,888	(3.8)	(5.4)	12.0	13.5
Caustic	01/29	$/t	549	(8.7)	(11.3)	(8.2)	31.5
2-EH	01/29	$/t	1,030	(5.9)	1.0	3.0	15.7
Caprolactam	01/29	$/t	2,030	0.5	(1.5)	(6.5)	(3.3)
Solar				%	%	%	%
Polysilicon	01/31	$/kg	17.4	(1.4)	(2.2)	4.6	7.3
Module	01/31	$/W	0.31	0.0	(1.0)	(2.2)	(12.4)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	84.5	(5.1)	(5.0)	(0.6)	1.2	1.3
Shell	EUR	2,396	(0.5)	(4.6)	(3.2)	(1.6)	10.6
Petrochina	CNY	9.30	3.3	(0.1)	12.7	10.8	7.5
Gazprom	RUB	144.0	(1.0)	(2.2)	10.3	14.6	(3.2)
Petrobras	BRL	20.0	(2.7)	0.2	20.7	18.2	34.1
Refinery							
Phillips66	USD	97.0	(3.8)	(9.0)	(4.7)	3.8	19.7
Valero	USD	93.2	(1.6)	(5.6)	0.4	14.2	42.4
JX	JPY	740.8	(0.8)	0.5	1.9	22.0	41.1
Neste Oil	EUR	54.9	(2.1)	(1.3)	3.0	13.2	70.4

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	90.0	(2.3)	(5.9)	(1.6)	(6.0)	0.3
DowDuPont	USD	70.9	(3.6)	(8.0)	(1.4)	(1.6)	18.4
SABIC	SAR	106.8	0.0	(1.9)	5.8	7.4	10.7
Formosa Pla.	TWD	100.0	(2.9)	(3.4)	1.9	9.3	12.4
Shin-Etsu	JPY	12,155	(2.6)	(2.8)	6.2	0.4	25.0
Renewable							
Wacker	EUR	154.3	(2.2)	(11.3)	(5.5)	11.9	38.5
First Solar	USD	66.44	(1.6)	(5.8)	(5.7)	14.8	110.3
GCL-Poly	HKD	1.32	(1.5)	3.1	(5.0)	0.0	33.3
Tesla Motors	USD	343.8	(1.6)	0.3	7.2	14.9	36.7

4. Coverage Summary

	02/02	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,525	(1.7)	(1.9)	1.6	(1.3)	5.8	21.4				* 추정치는 12M fwd 기준임	
KOSPI화학	6,292	(1.4)	(1.1)	2.7	2.9	11.6	22.1				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	400,500	(4.3)	(8.0)	(2.2)	(3.3)	21.7	47.0	매수	450,000	12.4	13.37	1.89
롯데케미칼	417,500	(2.3)	2.7	15.0	10.6	10.9	7.5	매수	410,000	(1.8)	11.40	1.25
한화케미칼	35,400	(0.8)	(0.8)	7.6	9.8	7.6	33.1	매수	39,000	10.2	13.51	0.92
금호석유화학	106,000	2.9	2.4	2.9	39.5	36.6	26.2	매수	150,000	41.5	12.93	1.70
KCC	415,500	(0.7)	3.5	9.3	6.1	(3.9)	19.7	매수	450,000	8.3	15.39	0.61
OCI	156,000	(0.3)	(1.0)	8.0	25.8	63.9	73.9	매수	180,000	15.4	14.66	1.09
SKC	43,450	(2.7)	(2.2)	(11.3)	7.7	18.9	36.9	매수	55,000	26.6	10.93	1.07
SK이노베이션	200,000	(2.7)	1.0	(1.2)	(4.3)	15.9	26.2	매수	230,000	15.0	10.59	1.01
S-Oil	123,000	(0.8)	6.5	8.4	(3.1)	9.3	51.5	매수	140,000	13.8	14.07	2.23
GS	68,000	(2.9)	(1.0)	10.9	3.7	(7.5)	31.5	매수	80,000	17.6	6.64	0.88
SK가스	101,500	(3.8)	(0.5)	8.2	7.7	(11.7)	(3.8)	매수	130,000	28.1	8.79	0.68
포스코대우	24,250	(1.4)	0.8	24.4	25.6	3.2	(8.1)	매수	25,000	3.1	11.06	0.98
LG상사	30,350	(1.8)	(1.1)	6.3	2.5	5.2	(6.2)	매수	38,000	25.2	10.23	0.87
한국전력	35,650	(1.0)	(1.1)	(5.1)	(8.9)	(19.3)	(16.0)	매수	50,000	40.3	7.66	0.28
한국가스공사	49,600	(0.8)	(3.5)	13.0	18.7	(0.4)	6.0	매수	60,000	21.0	9.37	0.74

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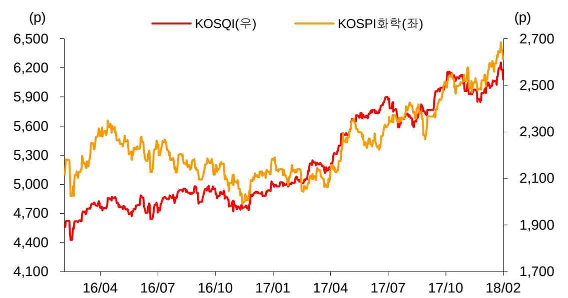
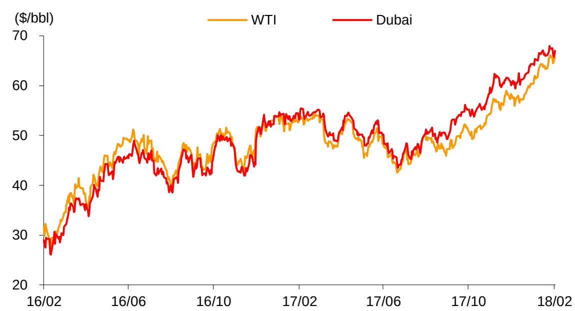
Key Chart

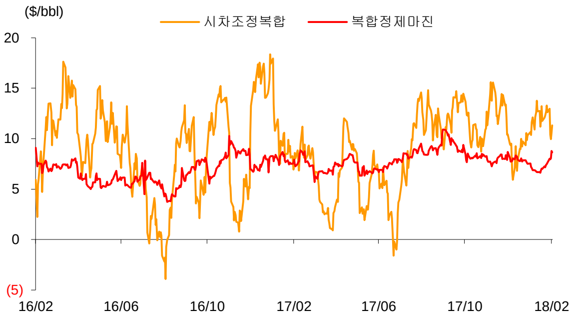
KOSPI/KOSPI화학



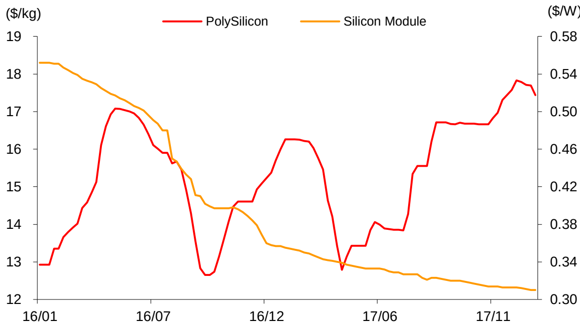
WTI/Dubai



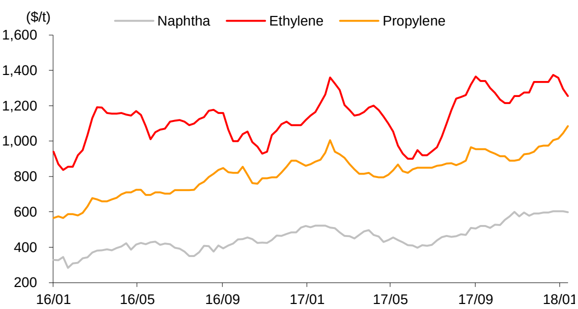
Complex & 1M lagging margin



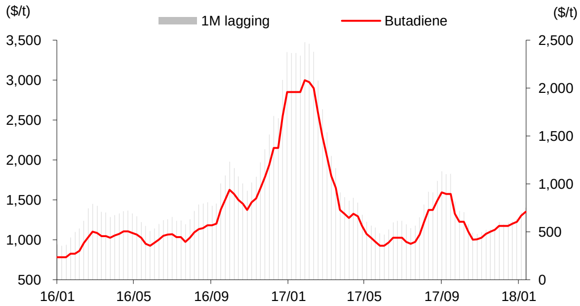
Polysilicon & Module prices



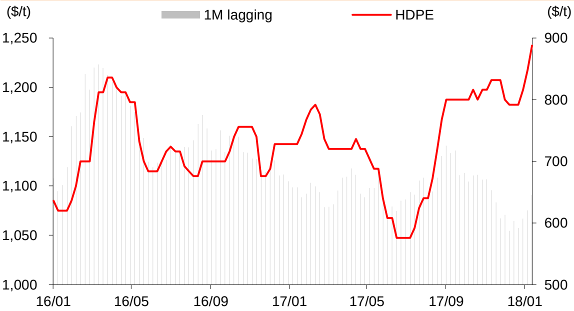
Naphtha/Ethylene/Propylene prices



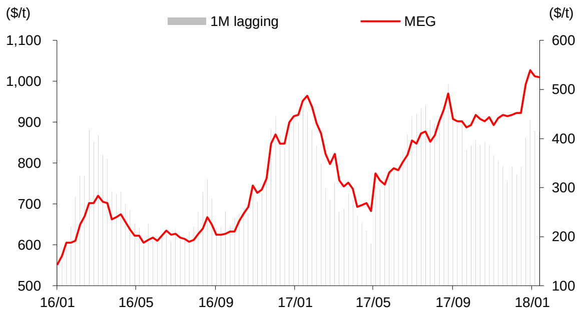
Butadiene price & 1M lagging naphtha spread



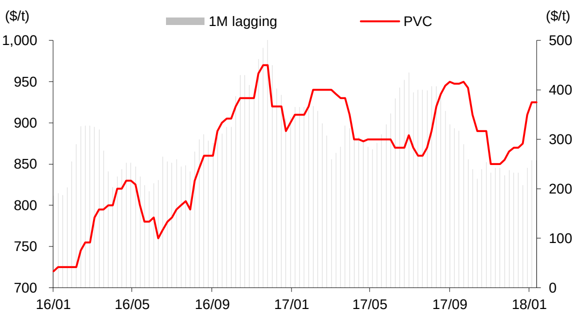
HDPE price & 1M lagging naphtha spread



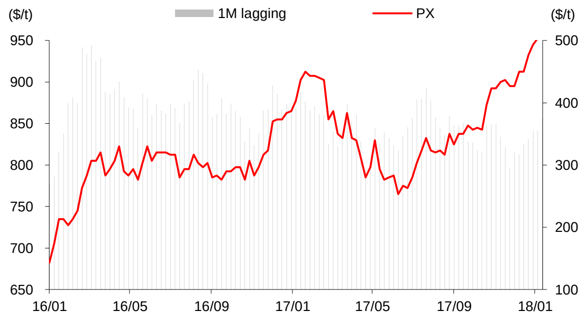
MEG price & 1M lagging naphtha spread



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, WoW 20$/mt 하락해 CFR SEA 1,220$/mt로 마감
결론	크래커 TA 돌입으로 단기적으로 가격 하락압력이 잦아들 전망
세부	
	1) 춘절 연휴를 앞두고 매도 압력을 받아 센티먼트가 불량했음
	2) 관계자, "아시아 에틸렌은 3월물 스팟 공급이 부족해 현재 저점 수준"
	3) 관계자, "3월에는 다수의 스팀크래커가 TA에 돌입할 계획이기 때문"
	4) 게다가 deepsea 카고도 마진을 위해 유럽으로 옮겨갈 전망임
	5) 크래커 TA 돌입으로 단기적으로 가격 하락압력이 잦아들 전망

WTI Comment	(출처: 연합뉴스)
제목	미 증산 우려에 하락…WTI 0.5% ↓
상승 요인	
하락 요인	美 원유채굴장비는 765개로, 전주보다 6개 증가한 것으로 집계됨

Issue 1	(출처: Platts)
제목	[주간가격] MEG, WoW 20$/mt 상승해 CFR China 1,025$/mt로 마감
결론	리스탁킹 수요와 운송차질로 인한 낮은 재고 레벨로 강세 지속 전망
세부	
	1) 화요일 9$/mt 하락해 약세였지만 춘절 리스탁킹 기조로 상승 마감
	2) Chang Jiang river의 port들이 기상악화로 셧다운한 것이 금주 화두
	3) Port 셧다운으로 Nanjing과 Shanghai 사이 port들 간 MEG 운송 차질
	4) 이에 따라 MEG 재고 레벨이 낮아졌고 춘절 수요가 겹쳐 강세로 마감
	5) 리스탁킹 수요와 운송차질로 인한 낮은 재고 레벨로 강세 지속 전망

Issue 2	(출처: Platts)
제목	[주간가격] BD, WoW 5$/mt 하락해 FOB Korea 1,345$/mt로 마감
결론	리스탁킹 수요와 주요 크래커 TA 돌입으로 가격 강세 지속 전망됨
세부	
	1) 춘절 앞두고 스팟 거래가 줄어 하락했지만 공급 부족 우려가 낙폭 제한
	2) Sinopec은 동중국 BD 오퍼 가격을 1,356$/mt로 3% 인상함
	3) 최근 엔드유저들이 2월 말 TA 시즌에 앞서 물량 확보에 나서며 강세
	4) 최근 아시아 NCC들이 LPG 크래킹으로 전환중이라 BD 생산 감소 전망
	5) 리스탁킹 수요와 주요 크래커 TA 돌입으로 가격 강세 지속 전망됨

Issue 3	(출처: Platts)
제목	[주간가격] SBR, WoW 40$/mt 상승해 CFR NEA 1,680$/mt로 마감
결론	춘절 가격 효과도 있지만 천연고무 재배면적 부족으로도 강세 가능
세부	
	1) 원재료 가격 인상 영향으로 생산자들이 가격을 올렸음
	2) BD 가격 상승으로 SBR 오퍼 가격도 CFR SEA 1,850$/mt까지 상승함
	3) 그러나 천연고무 가격이 1,494$/mt 수준이라 SBR 오퍼 가격 저항이 셈
	4) 대부분 바이어들은 춘절 전후로 BD와 SBR 가격에 주의를 기울임
	5) 춘절 가격 효과도 있지만 천연고무 재배면적 부족으로도 강세 가능

Issue 4	(출처: Platts)
제목	[주간가격] PX, WoW 1.5$/mt 상승해 FOB Korea 963.17$/mt로 마감
결론	상반기 유가 강세 기조와 맞물려 센티가 중기적으로 좋을 전망
세부	
	1) 4월 ICE Brent 원유 선물 가격이 89cents/lb 오르며 센티먼트 개선됨
	2) 금주에는 대련 PTA 생산 라인 셧다운 예정으로 3월물 수요가 뚜렷했음
	3) Sinopec은 2월 PX CP를 999.37$/mt 수준으로 nominate함
	4) 이는 1월 대비 200yuan/mt 가량 높게 조정한 가격임
	5) 상반기 유가 강세 기조와 맞물려 센티가 중기적으로 좋을 전망

Issue 5	(출처: Platts)
제목	[주간가격] PTA, 플랫한 모습 보이며 CFR China 750$/mt로 마감
결론	수요가 부진하나 춘절 전후로 공급도 부족해 플랫한 가격 유지 전망
세부	
	1) 아시아 PTA 가격은 플랫했지만 궂은 날씨로 운송료가 상승함
	2) 춘절이 지난 3월부터는 폴리에스터 수요가 살아나 PTA 수요 상승할 것
	3) 인도 JBF Industries의 125만톤급 PTA 공장이 3월 말 상업 가동 시작
	4) 중국 Yisheng PetChem의 Ningbo PTA 공장은 2월 하순 셧다운 예정
	5) 수요가 부진하나 춘절 전후로 공급도 부족해 플랫한 가격 유지 전망

Issue 6	(출처: PVinsights)
제목	[주간가격] 수요 약세 전환으로 태양광 제품 가격 하락세 지속
결론	다운스트림에서의 bearish한 센티먼트가 가격 하락세 부추길 전망
세부	
	1) 폴리실리콘 가격이 다운스트림 wafer 섹터의 강력 매도세로 하락함
	2) Multi-crystalline wafer향 폴리실리콘은 높은 재고 수준으로 하락 압력
	3) 고순도 폴리실리콘은 잉곳 재고 축적 수요로 상대적으로 안정적이었음
	4) 달러 약세로 폴리실리콘 하락세가 일부 상쇄된 측면도 있음
	5) 다운스트림에서의 bearish한 센티먼트가 가격 하락세 부추길 전망

SK Energy Daily

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	**USD/EUR**	0.803	0.800	0.805	0.829	0.858	0.844	0.930	0.833	0.904	0.887	0.818
	Change, %		*0.4*	*(0.2)*	*(3.2)*	*(6.4)*	*(4.8)*	*(13.6)*	*(3.6)*	*(11.2)*	*(9.5)*	*(1.8)*
	USD/JPY	110.2	109.4	108.6	112.3	114.1	110.7	112.8	112.6	108.8	112.1	110.8
	Change, %		*0.7*	*1.5*	*(1.9)*	*(3.4)*	*(0.5)*	*(2.3)*	*(2.2)*	*1.3*	*(1.8)*	*(0.6)*
	USD/KRW	1,079.9	1,071.8	1,064.0	1,061.4	1,114.3	1,123.9	1,147.0	1,066.7	1,160.5	1,130.9	1,067.3
	Change, %		*0.8*	*1.5*	*1.7*	*(3.1)*	*(3.9)*	*(5.8)*	*1.2*	*(6.9)*	*(4.5)*	*1.2*
Agriculture	**Corn**	361.5	361.8	356.5	353.3	350.5	365.0	367.5	350.8	358.5	359.4	353.2
	Change, %		*(0.1)*	*1.4*	*2.3*	*3.1*	*(1.0)*	*(1.6)*	*3.1*	*0.8*	*0.6*	*2.3*
	Soybean	978.8	985.0	985.5	955.0	989.0	966.5	1,037.3	951.8	987.5	975.9	970.0
	Change, %		*(0.6)*	*(0.7)*	*2.5*	*(1.0)*	*1.3*	*(5.6)*	*2.8*	*(0.9)*	*0.3*	*0.9*
	Wheat	446.8	451.0	441.0	433.5	426.0	460.8	434.5	427.0	436.4	436.0	432.9
	Change, %		*(0.9)*	*1.3*	*3.1*	*4.9*	*(3.0)*	*2.8*	*4.6*	*2.4*	*2.5*	*3.2*
	Rice	12.5	12.4	12.3	11.5	11.2	12.5	9.5	11.7	10.3	11.1	12.0
	Change, %		*0.4*	*1.0*	*8.0*	*11.7*	*(0.2)*	*30.7*	*6.7*	*20.5*	*12.6*	*4.0*
	Oats	267.5	267.3	266.0	242.5	264.5	289.5	255.0	241.0	196.3	252.3	257.1
	Change, %		*0.1*	*0.6*	*10.3*	*1.1*	*(7.6)*	*4.9*	*11.0*	*36.3*	*6.0*	*4.0*
MYR/mt	**Palm Oil**	2,475.0	2,490.0	2,482.0	2,472.0	2,798.0	2,630.0	3,258.0	2,444.0	2,653.8	2,787.3	2,497.6
	Change, %		*(0.6)*	*(0.3)*	*0.1*	*(11.5)*	*(5.9)*	*(24.0)*	*1.3*	*(6.7)*	*(11.2)*	*(0.9)*
	Cocoa	2,059.0	2,017.0	1,986.0	1,936.0	2,052.0	2,055.0	2,084.0	1,892.0	2,854.0	2,005.2	1,948.7
	Change, %		*2.1*	*3.7*	*6.4*	*0.3*	*0.2*	*(1.2)*	*8.8*	*(27.9)*	*2.7*	*5.7*
	Cotton	77.3	78.4	80.5	77.5	69.1	71.8	76.9	78.6	65.6	73.5	80.1
	Change, %		*(1.3)*	*(4.0)*	*(0.3)*	*11.9*	*7.7*	*0.5*	*(1.7)*	*17.9*	*5.1*	*(3.5)*
	Sugar	13.6	13.4	13.4	15.3	14.2	14.8	20.6	15.2	18.2	15.8	14.0
	Change, %		*1.9*	*2.0*	*(11.1)*	*(4.2)*	*(7.8)*	*(33.7)*	*(10.1)*	*(24.9)*	*(13.8)*	*(2.4)*
	Coffee	120.4	121.4	125.2	130.2	126.4	140.4	146.0	126.2	136.1	133.0	123.7
	Change, %		*(0.8)*	*(3.8)*	*(7.5)*	*(4.7)*	*(14.2)*	*(17.5)*	*(4.6)*	*(11.5)*	*(9.5)*	*(2.7)*
Energy	**WTI**	65.5	65.8	66.1	60.4	54.5	49.6	53.5	60.4	43.4	51.0	63.8
	Change, %		*(0.5)*	*(1.0)*	*8.4*	*20.0*	*32.0*	*22.2*	*8.3*	*50.9*	*28.4*	*2.5*
	Brent	68.6	69.7	70.5	66.6	60.6	52.4	56.6	66.9	45.1	54.9	69.0
	Change, %		*(1.5)*	*(2.8)*	*3.0*	*13.1*	*31.0*	*21.3*	*2.6*	*52.1*	*25.0*	*(0.6)*
	Natural Gas	2.8	2.9	3.5	3.1	2.9	2.8	3.2	3.0	2.6	3.0	3.1
	Change, %		*(0.4)*	*(18.8)*	*(6.9)*	*(3.0)*	*1.2*	*(10.7)*	*(3.6)*	*11.5*	*(5.8)*	*(8.9)*
	Ethanol	1.5	1.4	1.4	1.3	1.4	1.6	1.5	1.3	1.5	1.5	1.4
	Change, %		*2.6*	*7.5*	*9.6*	*3.0*	*(6.2)*	*(1.7)*	*10.8*	*(3.4)*	*(2.3)*	*8.0*
	RBOB Gasoline	187.2	189.6	193.8	176.3	177.0	164.5	153.3	179.9	140.0	162.9	185.9
	Change, %		*(1.3)*	*(3.4)*	*6.2*	*5.8*	*13.8*	*22.1*	*4.0*	*33.7*	*14.9*	*0.7*
	Coal	104.8	104.4	106.5	102.7	100.2	95.1	82.8	100.8	65.5	88.2	105.8
	Change, %		*0.3*	*(1.6)*	*2.0*	*4.5*	*10.2*	*26.6*	*3.9*	*60.0*	*18.8*	*(1.0)*
Metal	**Gold**	1,332.9	1,348.7	1,349.7	1,317.5	1,276.1	1,266.7	1,215.8	1,302.6	1,248.5	1,258.6	1,332.3
	Change, %		*(1.2)*	*(1.2)*	*1.2*	*4.5*	*5.2*	*9.6*	*2.3*	*6.8*	*5.9*	*0.0*
	Silver	16.6	17.2	17.4	17.2	17.1	16.6	17.5	16.9	17.1	17.1	17.1
	Change, %		*(3.7)*	*(4.6)*	*(3.4)*	*(3.0)*	*0.1*	*(5.0)*	*(2.1)*	*(3.0)*	*(2.8)*	*(3.1)*
	Copper	7,045.0	7,119.0	7,085.0	7,205.0	6,929.0	6,352.0	5,886.0	7,247.0	4,872.0	6,199.4	7,101.8
	Change, %		*(1.0)*	*(0.6)*	*(2.2)*	*1.7*	*10.9*	*19.7*	*(2.8)*	*44.6*	*13.6*	*(0.8)*
	Nickel	866.8	894.4	868.2	803.7	808.6	658.9	696.9	809.1	646.4	680.2	825.7
	Change, %		*(3.1)*	*(0.2)*	*7.9*	*7.2*	*31.6*	*24.4*	*7.1*	*34.1*	*27.4*	*5.0*
	Zinc	3,502.0	3,557.0	3,478.0	3,349.0	3,258.0	2,801.5	2,851.0	3,319.0	2,097.5	2,888.5	3,418.5
	Change, %		*(1.5)*	*0.7*	*4.6*	*7.5*	*25.0*	*22.8*	*5.5*	*67.0*	*21.2*	*2.4*
	Lead	2,699.8	2,682.5	2,602.5	2,570.5	2,441.8	2,335.8	2,340.8	2,482.8	1,868.3	2,315.7	2,592.0
	Change, %		*0.6*	*3.7*	*5.0*	*10.6*	*15.6*	*15.3*	*8.7*	*44.5*	*16.6*	*4.2*
	Aluminum	14,310.0	14,275.0	14,610.0	15,055.0	16,045.0	14,545.0	13,745.0	15,020.0	12,373.5	14,556.6	14,712.1
	Change, %		*0.2*	*(2.1)*	*(4.9)*	*(10.8)*	*(1.6)*	*4.1*	*(4.7)*	*15.7*	*(1.7)*	*(2.7)*
	Cobalt	80,382.0	79,881.5	79,623.0	75,205.0	61,370.0	55,750.0	37,500.0	75,205.0	25,480.1	55,906.9	77,568.8
	Change, %		*0.6*	*1.0*	*6.9*	*31.0*	*44.2*	*114.4*	*6.9*	*215.5*	*43.8*	*3.6*
	HR Coil	722.0	722.0	679.0	660.0	612.0	625.0	620.0	662.0	519.3	620.1	678.3
	Change, %		*0.0*	*6.3*	*9.4*	*18.0*	*15.5*	*16.5*	*9.1*	*39.0*	*16.4*	*6.4*
	Scrap	370.0	370.0	375.0	367.0	330.0	354.0	292.0	367.0	275.7	344.7	375.9
	Change, %		*0.0*	*(1.3)*	*0.8*	*12.1*	*4.5*	*26.7*	*0.8*	*34.2*	*7.3*	*(1.6)*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		02/02	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	65.5	65.8	66.1	62.0	55.6	49.6	53.8	53.7	43.4	50.9	63.8
	Change, %		(0.5)	(1.0)	5.5	17.6	32.0	21.6	21.8	50.9	28.6	2.5
	Dubai	67.0	66.1	67.4	65.4	58.9	50.4	55.5	53.8	41.3	53.1	66.2
	Change, %		1.4	(0.6)	2.6	13.7	33.1	20.9	24.5	62.3	26.2	1.2
Crude Oil Product	**Gasoline(휘발유)**	82.8	81.6	80.4	76.6	73.8	66.2	70.6	69.8	56.3	68.0	79.0
	Change, %		1.5	3.0	8.1	12.2	25.2	17.3	18.6	47.3	21.8	4.9
	Kerosene(등유)	84.4	82.9	83.2	80.2	71.4	63.4	66.9	66.4	52.9	65.2	81.2
	Change, %		1.9	1.5	5.3	18.2	33.2	26.2	27.1	59.6	29.4	4.0
	Diesel(경유)	82.9	82.1	83.2	80.0	70.1	63.4	66.9	65.5	52.1	65.6	80.9
	Change, %		1.1	(0.3)	3.6	18.3	30.8	23.9	26.6	59.1	26.4	2.5
	Bunker-C	60.1	60.0	59.9	58.4	55.6	46.9	50.2	52.1	35.5	49.7	59.0
	Change, %		0.2	0.3	2.9	8.1	28.0	19.6	15.4	69.1	21.0	1.9
	Naphtha	65.7	65.5	65.4	66.9	63.0	50.1	56.8	53.5	42.6	53.7	66.1
	Change, %		0.3	0.4	(1.9)	4.2	31.0	15.6	22.8	54.1	22.2	(0.7)
Dubai Spread	**Gasoline(휘발유)**	15.8	15.5	13.0	11.3	14.9	15.8	15.2	16.0	14.9	14.9	12.8
	Change		0.3	2.8	4.5	0.9	(0.0)	0.7	(0.2)	0.9	0.9	3.1
	Kerosene(등유)	17.4	16.7	15.8	14.8	12.5	13.0	11.4	12.6	11.6	12.1	14.9
	Change		0.7	1.6	2.6	4.9	4.4	6.0	4.8	5.8	5.2	2.4
	Diesel(경유)	15.9	15.9	15.8	14.7	11.2	13.1	11.5	11.7	10.8	12.5	14.7
	Change		(0.0)	0.2	1.2	4.7	2.9	4.4	4.2	5.1	3.4	1.2
	Bunker-C	(7.0)	(6.2)	(7.5)	(7.0)	(3.4)	(3.4)	(5.2)	(1.8)	(5.8)	(3.4)	(7.3)
	Change		(0.8)	0.6	0.0	(3.6)	(3.5)	(1.7)	(5.2)	(1.2)	(3.5)	0.3
	Naphtha	(1.4)	(0.7)	(2.0)	1.6	4.1	(0.2)	1.3	(0.4)	1.3	0.6	(0.1)
	Change		(0.7)	0.7	(3.0)	(5.4)	(1.1)	(2.7)	(1.0)	(2.7)	(2.0)	(1.2)
Refining Margin	**Simple(단순)**	2.5	2.9	1.7	1.6	2.9	3.5	2.0	3.8	1.9	3.2	1.6
	Change		(0.3)	0.8	0.9	(0.4)	(1.0)	0.5	(1.3)	0.6	(0.6)	1.0
	Complex(복합)	8.7	8.8	7.6	7.1	7.7	8.4	7.3	8.3	7.0	8.0	7.3
	Change		(0.1)	1.1	1.6	1.0	0.2	1.4	0.4	1.7	0.7	1.4
	Complex(lagging)	11.3	10.6	12.6	11.6	12.2	10.4	8.1	18.0	8.5	8.9	11.9
	Change		0.7	(1.3)	(0.3)	(0.9)	0.9	3.3	(6.7)	2.8	2.4	(0.6)

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

SK Energy Daily

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Petrochemical Price Data

Daily Price			02/02	02/01	01/31	01/30	01/29	01/26	01/25	01/24	01/23	01/22
Spot Price	**Naphtha**	CFR Japan	603.9	601.5	587.3	588.5	602.0	598.8	607.8	601.5	597.0	601.3
	Ethylene	CFR SE Asia	1,220.0	1,220.0	1,240.0	1,240.0	1,240.0	1,240.0	1,270.0	1,270.0	1,270.0	1,290.0
	Propylene	FOB Korea	1,065.0	1,080.0	1,080.0	1,080.0	1,080.0	1,080.0	1,020.0	1,011.0	1,005.0	1,001.0
	Butadiene	FOB Korea	1,345.0	1,350.0	1,350.0	1,350.0	1,350.0	1,350.0	1,270.0	1,270.0	1,270.0	1,270.0
	HDPE	CFR FE Asia	1,350.0	1,350.0	1,350.0	1,330.0	1,330.0	1,320.0	1,320.0	1,320.0	1,315.0	1,315.0
	LDPE	CFR FE Asia	1,250.0	1,250.0	1,250.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0
	LLDPE	CFR FE Asia	1,220.0	1,220.0	1,220.0	1,210.0	1,210.0	1,200.0	1,200.0	1,200.0	1,185.0	1,185.0
	MEG	CFR China	1,025.0	1,020.0	1,010.0	998.0	1,007.0	1,005.0	1,007.0	1,007.0	1,015.0	1,019.0
	PP	CFR FE Asia	1,220.0	1,220.0	1,230.0	1,240.0	1,240.0	1,225.0	1,225.0	1,225.0	1,210.0	1,210.0
	PX	CFR China	963.2	959.0	961.3	961.7	970.7	961.7	965.7	968.7	965.7	955.2
	PTA	CFR China	750.0	750.0	745.0	743.0	745.0	745.0	740.0	735.0	725.0	730.0
	Benzene	FOB Korea	940.3	929.3	923.7	930.7	946.7	953.7	951.7	942.7	943.7	948.7
	Toluene	FOB Korea	753.0	746.0	743.5	756.5	756.5	756.5	756.5	751.5	746.5	743.5
	Xylene	FOB Korea	788.0	780.0	776.5	776.0	788.5	788.5	790.5	788.5	786.5	784.5
	SM	FOB Korea	1,417.0	1,405.0	1,400.5	1,396.5	1,418.5	1,408.0	1,390.5	1,376.0	1,385.0	1,363.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	598.0	603.0	597.0	554.5	520.5	523.0	484.5	399.5	493.5	602.1
	Change, %			*(0.8)*	*0.2*	*7.8*	*14.9*	*14.3*	*23.4*	*49.7*	*21.2*	*(0.7)*
	Ethylene	CFR SE Asia	1,255.0	1,295.0	1,272.5	1,130.0	1,255.0	1,090.0	990.0	1,040.9	1,090.9	1,300.6
	Change, %			*(3.1)*	*(1.4)*	*11.1*	*0.0*	*15.1*	*26.8*	*20.6*	*15.0*	*(3.5)*
	Propylene	CFR SE Asia	1,020.0	995.0	897.5	807.5	835.0	955.0	815.0	705.7	823.6	1,037.5
	Change, %			*2.5*	*13.6*	*26.3*	*22.2*	*6.8*	*25.2*	*44.5*	*23.9*	*(1.7)*
	Butadiene	CFR SE Asia	1,300.0	1,250.0	1,125.0	1,050.0	1,525.0	2,800.0	2,100.0	1,116.8	1,481.1	1,218.8
	Change, %			*4.0*	*15.6*	*23.8*	*(14.8)*	*(53.6)*	*(38.1)*	*16.4*	*(12.2)*	*6.7*
	Benzene	CFR SE Asia	965.0	947.5	890.0	810.0	805.0	1,015.0	822.5	646.7	838.8	929.4
	Change, %			*1.8*	*8.4*	*19.1*	*19.9*	*(4.9)*	*17.3*	*49.2*	*15.0*	*3.8*
	Toluene	CFR SE Asia	765.0	755.0	735.0	690.0	700.0	770.0	690.0	630.5	689.5	750.0
	Change, %			*1.3*	*4.1*	*10.9*	*9.3*	*(0.6)*	*10.9*	*21.3*	*11.0*	*2.0*
	Xylene	CFR SE Asia	755.0	740.0	712.5	655.0	657.5	715.0	675.0	627.7	668.8	741.3
	Change, %			*2.0*	*6.0*	*15.3*	*14.8*	*5.6*	*11.9*	*20.3*	*12.9*	*1.9*
Spread	**Ethylene**	-Naphtha	657.0	692.0	675.5	575.5	734.5	567.0	505.5	641.4	597.4	698.5
	Change, %			*(5.1)*	*(2.7)*	*14.2*	*(10.6)*	*15.9*	*30.0*	*2.4*	*10.0*	*(5.9)*
	Propylene	-Naphtha	422.0	392.0	300.5	253.0	314.5	432.0	330.5	306.2	330.1	435.4
	Change, %			*7.7*	*40.4*	*66.8*	*34.2*	*(2.3)*	*27.7*	*37.8*	*27.9*	*(3.1)*
	Butadiene	-Naphtha	702.0	647.0	528.0	495.5	1,004.5	2,277.0	1,615.5	717.3	987.6	616.6
	Change, %			*8.5*	*33.0*	*41.7*	*(30.1)*	*(69.2)*	*(56.5)*	*(2.1)*	*(28.9)*	*13.8*
	Benzene	-Naphtha	367.0	344.5	293.0	255.5	284.5	492.0	338.0	247.2	345.3	327.3
	Change, %			*6.5*	*25.3*	*43.6*	*29.0*	*(25.4)*	*8.6*	*48.5*	*6.3*	*12.1*
	Toluene	-Naphtha	167.0	152.0	138.0	135.5	179.5	247.0	205.5	231.0	196.0	147.9
	Change, %			*9.9*	*21.0*	*23.2*	*(7.0)*	*(32.4)*	*(18.7)*	*(27.7)*	*(14.8)*	*12.9*
	Xylene	-Naphtha	157.0	137.0	115.5	100.5	137.0	192.0	190.5	228.2	175.3	139.1
	Change, %			*14.6*	*35.9*	*56.2*	*14.6*	*(18.2)*	*(17.6)*	*(31.2)*	*(10.4)*	*12.8*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,242.5	1,217.5	1,182.5	1,197.5	1,187.5	1,142.5	1,142.5	1,134.6	1,142.5	1,210.0
	Change, %			2.1	5.1	3.8	4.6	8.8	8.8	9.5	8.8	2.7
	MEG	CFR SE Asia	1,010.0	1,012.5	922.5	907.5	902.5	952.5	847.5	660.8	850.6	1,010.6
	Change, %			(0.2)	9.5	11.3	11.9	6.0	19.2	52.8	18.7	(0.1)
	PVC	CFR SE Asia	925.0	925.0	870.0	890.0	947.5	910.0	920.0	823.4	899.9	908.8
	Change, %			0.0	6.3	3.9	(2.4)	1.6	0.5	12.3	2.8	1.8
	PP	CFR SE Asia	1,227.5	1,207.5	1,157.5	1,147.5	1,167.5	1,057.5	1,032.5	978.4	1,099.6	1,205.0
	Change, %			1.7	6.0	7.0	5.1	16.1	18.9	25.5	11.6	1.9
	2-EH	CFR Korea	1,030.0	1,095.0	1,020.0	1,000.0	990.0	890.0	865.0	772.4	970.0	1,052.5
	Change, %			(5.9)	1.0	3.0	4.0	15.7	19.1	33.4	6.2	(2.1)
	ABS	CFR SE Asia	2,020.0	2,020.0	2,050.0	1,920.0	2,060.0	1,830.0	1,635.0	1,347.1	1,844.7	2,022.5
	Change, %			0.0	(1.5)	5.2	(1.9)	10.4	23.5	49.9	9.5	(0.1)
	SBR	CFR SE Asia	1,755.0	1,650.0	1,650.0	1,700.0	1,820.0	3,050.0	2,000.0	1,483.0	1,980.5	1,676.3
	Change, %			6.4	6.4	3.2	(3.6)	(42.5)	(12.3)	18.3	(11.4)	4.7
	SM	CFR SE Asia	1,432.5	1,382.5	1,290.0	1,210.0	1,350.0	1,392.5	1,205.0	1,064.6	1,253.8	1,380.0
	Change, %			3.6	11.0	18.4	6.1	2.9	18.9	34.6	14.3	3.8
	Caustic	FOB NEA	549.0	601.0	619.0	598.0	484.0	417.5	422.5	316.6	491.2	593.5
	Change, %			(8.7)	(11.3)	(8.2)	13.4	31.5	29.9	73.4	11.8	(7.5)
	PX	CFR SE Asia	972.5	952.5	912.5	842.5	837.5	902.5	855.0	790.4	844.4	950.6
	Change, %			2.1	6.6	15.4	16.1	7.8	13.7	23.0	15.2	2.3
	PO	CFR China	1,887.5	1,962.5	1,995.0	1,685.0	1,560.0	1,662.5	1,562.5	1,396.8	1,601.2	1,977.5
	Change, %			(3.8)	(5.4)	12.0	21.0	13.5	20.8	35.1	17.9	(4.6)
	Caprolactam	CFR SE Asia	2,030.0	2,020.0	2,060.0	2,170.0	1,830.0	2,100.0	1,850.0	1,344.9	1,936.4	2,022.5
	Change, %			0.5	(1.5)	(6.5)	10.9	(3.3)	9.7	50.9	4.8	0.4
	PTA	CFR SE Asia	762.5	745.0	717.5	667.5	667.5	677.5	642.5	613.7	667.8	748.8
	Change, %			2.3	6.3	14.2	14.2	12.5	18.7	24.2	14.2	1.8
Spread	HDPE		644.5	614.5	585.5	643.0	667.0	619.5	658.0	735.1	649.0	607.9
	Change, %			4.9	10.1	0.2	(3.4)	4.0	(2.1)	(12.3)	(0.7)	6.0
	MEG		412.0	409.5	325.5	353.0	382.0	429.5	363.0	261.3	357.1	408.5
	Change, %			0.6	26.6	16.7	7.9	(4.1)	13.5	57.7	15.4	0.9
	PVC		327.0	322.0	273.0	335.5	427.0	387.0	435.5	423.9	406.4	306.6
	Change, %			1.6	19.8	(2.5)	(23.4)	(15.5)	(24.9)	(22.9)	(19.5)	6.6
	PP		629.5	604.5	560.5	593.0	647.0	534.5	548.0	578.9	606.1	602.9
	Change, %			4.1	12.3	6.2	(2.7)	17.8	14.9	8.7	3.9	4.4
	2-EH		432.0	492.0	423.0	445.5	469.5	367.0	380.5	372.9	476.5	450.4
	Change, %			(12.2)	2.1	(3.0)	(8.0)	17.7	13.5	15.9	(9.3)	(4.1)
	ABS		1,422.0	1,417.0	1,453.0	1,365.5	1,539.5	1,307.0	1,150.5	947.6	1,351.2	1,420.4
	Change, %			0.4	(2.1)	4.1	(7.6)	8.8	23.6	50.1	5.2	0.1
	SBR	BD spread	455.0	400.0	525.0	650.0	295.0	250.0	(100.0)	366.2	499.4	457.5
	Change, %			13.8	(13.3)	(30.0)	54.2	82.0	(555.0)	24.3	(8.9)	(0.5)
	SM		834.5	779.5	693.0	655.5	829.5	869.5	720.5	665.1	760.3	777.9
	Change, %			7.1	20.4	27.3	0.6	(4.0)	15.8	25.5	9.8	7.3
	Caustic											
	Change, %											
	PX		374.5	349.5	315.5	288.0	317.0	379.5	370.5	390.9	351.0	348.5
	Change, %			7.2	18.7	30.0	18.1	(1.3)	1.1	(4.2)	6.7	7.5
	PO	propylene sprea	867.5	967.5	1,097.5	877.5	725.0	707.5	747.5	691.1	777.6	940.0
	Change, %			(10.3)	(21.0)	(1.1)	19.7	22.6	16.1	25.5	11.6	(7.7)
	Caprolactam	benzene spreac	1,065.0	1,072.5	1,170.0	1,360.0	1,025.0	1,085.0	1,027.5	698.2	1,097.6	1,093.1
	Change, %			(0.7)	(9.0)	(21.7)	3.9	(1.8)	3.6	52.5	(3.0)	(2.6)
	PTA	px spread	81.8	78.3	78.8	77.8	81.3	45.8	44.0	60.4	76.7	83.3
	Change, %			4.5	3.8	5.1	0.6	78.7	85.8	35.3	6.6	(1.9)

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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SK증권

Global peers

	Currency	02/02	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	70.9	(3.6)	(8.0)	(1.4)	(1.6)	10.2	18.4	(0.5)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	99.3	0.9	(3.0)	5.3	8.9	18.3	27.9	7.2	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	90.0	(2.3)	(5.9)	(1.6)	(6.0)	11.7	0.3	(1.9)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	74.7	(1.7)	(0.6)	3.0	(3.1)	(3.3)	17.4	2.3	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	100.0	(2.5)	(6.0)	(1.4)	(8.4)	3.2	7.8	(1.5)	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	67.5	(2.8)	(6.3)	2.2	(2.9)	1.3	(0.6)	1.8	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	799	(1.8)	(3.6)	(1.4)	(2.6)	25.8	32.3	(1.4)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,197	(0.9)	(1.0)	(3.2)	(0.5)	24.1	50.7	(3.2)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	12,155	(2.6)	(2.8)	6.2	0.4	17.9	25.0	6.2	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,431	(2.2)	(2.1)	(1.6)	2.3	11.2	37.1	(1.6)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,573	(1.3)	12.6	16.0	16.3	34.1	29.6	16.0	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	9,523	(1.8)	(5.2)	(4.9)	(15.7)	(9.1)	3.0	(4.9)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	106.8	0.0	(1.9)	5.8	7.4	9.8	10.7	5.3	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	66.0	0.0	3.2	11.6	18.2	20.4	10.9	11.8	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	100.0	(2.9)	(3.4)	1.9	9.3	9.9	12.4	1.3	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	107.0	(3.2)	(3.6)	3.4	16.7	16.9	12.4	3.9	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	79.8	(0.4)	(2.2)	3.6	6.4	5.8	7.3	2.4	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	6.74	1.7	(1.5)	2.3	4.8	(2.2)	(0.9)	6.5	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.34	(2.1)	(20.1)	(14.0)	(20.7)	(26.2)	(39.2)	(12.4)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	904	(4.2)	(6.4)	(0.7)	(4.5)	11.0	73.3	(0.6)	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	109.7	0.0	(3.3)	12.2	14.6	15.4	(5.0)	13.1	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	95.0	(1.3)	(1.6)	11.8	22.6	31.0	42.9	11.8	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.0	(1.5)	0.5	2.2	9.7	14.9	12.6	4.2	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	400,500	(4.3)	(8.0)	(2.6)	(4.6)	20.1	45.9	(1.1)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	417,500	(2.3)	2.7	15.8	10.9	9.0	5.6	13.5	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	35,400	(0.8)	(0.8)	8.8	7.8	6.0	34.3	12.0	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	106,000	2.9	2.4	2.4	40.4	37.0	24.6	6.5	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	43,450	(2.7)	(2.2)	(6.6)	10.4	16.3	38.4	(7.6)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	62,800	0.0	(0.3)	(4.3)	5.0	8.8	19.6	(0.5)	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	10,100	(2.4)	(5.2)	34.1	28.0	55.1	25.8	33.2	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(1.5)**	**(2.8)**	**3.5**	**5.6**	**13.5**	**19.3**	**4.1**							
Refinery																
Valero	USD	93.2	(1.6)	(5.6)	0.4	14.2	36.0	42.4	1.4	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	57.7	(2.7)	(4.4)	4.3	10.0	26.6	18.5	5.2	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	120.5	(3.2)	(2.8)	4.8	14.2	13.7	16.4	4.3	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	103.5	(3.1)	(9.3)	(9.8)	(5.7)	3.8	25.5	(9.5)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	67.4	(1.9)	(6.0)	0.3	8.4	19.9	40.7	2.2	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	40.0	(5.2)	(8.7)	(5.2)	3.1	19.9	(12.3)	(3.3)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	46.4	(2.6)	(4.9)	(9.6)	15.3	52.2	64.7	(9.4)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	97.0	(3.8)	(9.0)	(4.7)	3.8	11.9	19.7	(4.1)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	29.5	(6.3)	(15.2)	(8.3)	6.0	14.8	0.7	(5.0)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	740.8	(0.8)	0.5	1.9	22.0	50.5	41.1	1.9	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,190.0	(1.4)	0.1	(7.4)	22.3	59.0	20.2	(7.4)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	54.9	(2.1)	(1.3)	3.0	13.2	48.4	70.4	3.0	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	73.9	4.6	2.0	1.0	7.5	16.5	28.4	3.8	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	43.2	(1.8)	(0.4)	(2.9)	(11.0)	(12.2)	1.6	(2.4)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	200,000	(2.7)	1.0	(3.1)	(2.2)	13.3	24.2	(2.2)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	123,000	(0.8)	6.5	5.1	(2.8)	5.1	50.0	5.1	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	68,000	(2.9)	(1.0)	8.8	3.5	(10.5)	31.5	9.3	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**(2.2)**	**(3.4)**	**(1.2)**	**7.2**	**21.7**	**28.5**	**(0.4)**							

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

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SK 증권

Global peers

	Currency	02/02	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	85	(5.1)	(5.0)	(0.6)	1.2	4.9	1.3	1.1	358,163	17.0	18.2	1.9	1.9	8.2	8.3
BP	GBP	489	(2.4)	(5.2)	(5.4)	(5.5)	6.6	3.5	(6.4)	138,096	15.5	14.2	1.4	1.3	5.6	5.4
Shell	EUR	2,396	(0.5)	(4.6)	(3.2)	(1.6)	11.0	10.6	(3.4)	284,389	14.6	13.4	1.4	1.4	6.2	6.0
Chevron	USD	119	(5.6)	(9.6)	(7.1)	2.8	7.4	5.7	(5.3)	225,228	17.9	18.6	1.5	1.5	6.4	6.3
Total	EUR	46	(2.0)	(2.9)	0.2	(4.8)	5.7	(0.8)	0.2	145,890	12.6	12.0	1.3	1.2	5.4	5.1
Sinopec	CNY	8	5.3	2.2	18.4	23.2	22.8	25.0	23.0	137,079	14.6	13.8	1.2	1.2	4.9	4.9
Petrochina	CNY	9	3.3	(0.1)	12.7	10.8	14.3	7.5	15.0	256,054	31.8	27.0	1.4	1.3	6.5	6.3
CNOOC	CNY	13	6.2	(7.6)	19.0	10.2	14.9	(1.2)	20.5	72,268	10.5	9.9	1.1	1.0	4.0	3.9
Gazprom	RUB	144	(1.0)	(2.2)	10.3	14.6	20.9	(3.2)	10.3	60,459	4.1	4.4	0.3	0.3	3.7	3.6
Rosneft	RUB	340	(1.5)	(3.4)	16.6	6.7	5.6	(14.4)	16.6	63,888	8.1	7.0	0.9	0.8	4.8	4.4
Anadarko	USD	59	(3.7)	(4.4)	7.9	19.7	32.4	(14.5)	10.2	32,342	151.6	86.7	2.3	2.2	6.9	6.1
Petrobras	BRL	20	(2.7)	0.2	20.7	18.2	47.8	34.1	24.0	84,626	11.0	8.2	0.8	0.7	5.3	5.0
Lukoil	USD	3,797	1.0	(0.6)	13.9	20.5	29.2	12.9	13.9	56,988	6.7	6.4	0.8	0.7	N/A	N/A
Kinder	USD	18	(3.1)	(6.8)	(6.9)	(1.7)	(13.9)	(22.7)	(3.2)	47,497	21.8	19.6	1.1	1.2	10.4	10.0
Statoil	NOK	178	(2.2)	(3.8)	0.5	7.7	19.5	16.5	1.7	76,696	16.4	15.4	1.9	1.8	3.4	3.3
BHP	AUD	31	0.5	(0.1)	3.8	12.7	19.7	13.9	4.2	124,627	17.7	17.7	2.1	2.0	6.7	6.7
PTT E&P	THB	123	0.8	2.5	22.5	39.6	40.0	25.6	22.5	15,471	14.3	13.6	1.2	1.2	4.0	3.9
Petronas gas	MYR	18	2.1	(0.1)	4.3	2.1	(2.6)	(11.4)	4.6	9,306	19.0	18.5	2.8	2.7	10.7	10.4
Chesapeake	USD	3	(3.8)	(16.8)	(18.8)	(9.0)	(27.9)	(48.4)	(15.9)	3,026	4.0	3.6	#N/A N/A	5.1	6.1	5.7
Noble Energy	USD	29	(5.5)	(10.3)	(3.3)	4.8	3.8	(26.5)	0.2	14,209	61.3	35.5	1.4	1.4	7.1	6.0
Average		**0**	**(1.0)**	**(3.9)**	**5.3**	**8.6**	**13.1**	**0.7**	**6.7**							
PV																
WACKER	EUR	154.3	(2.2)	(11.3)	(5.5)	11.9	46.9	38.5	(4.9)	10,034	22.1	19.0	2.3	2.2	7.5	7.2
GCL-Poly	HKD	1.3	(1.5)	3.1	(5.0)	0.0	55.3	33.3	(5.7)	3,138	7.6	6.7	0.8	0.7	5.8	5.3
SunPower	USD	7.6	(3.3)	(7.2)	(15.8)	(8.5)	(17.8)	10.1	(10.4)	1,054	#N/A N/A	24.3	1.3	1.3	12.1	9.7
Canadian Solar	USD	15.4	(0.6)	(4.0)	(10.1)	(16.7)	(6.6)	30.0	(8.6)	894	8.3	8.8	0.9	0.8	9.1	9.2
JA Solar	USD	7.7	1.6	3.1	3.1	(0.6)	26.6	65.8	2.7	364	14.6	12.2	1.7	1.6	4.1	3.7
Yingli	USD	1.7	(0.6)	(5.6)	0.0	(23.1)	(28.0)	(37.5)	0.6	31	#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	66.4	(1.6)	(5.8)	(5.7)	14.8	36.6	110.3	(1.6)	6,939	43.7	20.3	1.2	1.1	12.7	7.5
한화큐셀	USD	7.3	(1.9)	1.5	1.2	(10.4)	(7.0)	(6.9)	4.0	608	33.2	23.5	#N/A N/A	#N/A N/A	8.1	7.3
OCI	KRW	156,000	(0.3)	(1.0)	14.7	28.9	67.6	79.5	14.7	3,421	17.1	16.8	1.1	1.0	8.9	7.4
웅진에너지	KRW	8,330	(4.1)	(7.9)	(1.8)	5.4	1.0	70.0	1.3	225	N/A	1.1	1.0	8.9	7.4	9.0
신성솔라에너지	KRW	1,880	(2.6)	(3.8)	(2.8)	9.0	(17.5)	(5.3)	(1.8)	299	N/A	1.0	8.9	7.4	9.0	8.4
Average			**(1.6)**	**(3.5)**	**(2.5)**	**1.0**	**14.3**	**35.3**	**(0.9)**							
Gas Company																
Towngas China	HKD	6.5	(1.5)	0.3	3.3	(1.2)	17.5	55.0	3.7	2,304	13.5	12.4	1.1	1.1	12.2	10.9
Kulun	HKD	7.9	2.3	(1.2)	(5.3)	10.1	1.1	30.0	(2.6)	8,184	10.6	9.4	1.2	1.1	5.7	5.3
Beijing Enterprise	HKD	47.2	(1.5)	(4.9)	0.7	0.9	15.8	25.0	1.7	7,616	8.3	7.4	0.9	0.8	14.6	13.8
ENN Energy	HKD	59.6	1.4	(4.7)	3.6	3.8	9.7	56.7	6.8	8,244	13.3	11.4	2.5	2.2	8.1	7.2
China Resources Gas	HKD	26.3	1.5	(4.0)	(6.3)	(6.9)	(12.5)	6.9	(7.4)	7,464	13.7	12.3	2.5	2.2	8.3	7.5
China Gas Holdings	HKD	24.1	1.7	(4.6)	11.3	2.6	22.7	110.6	11.3	15,278	16.5	14.0	4.0	3.3	13.0	11.3
Shenzen Gas	HKD	15.8	0.5	(3.4)	3.3	6.5	19.0	42.3	6.2	4,099	11.3	10.2	1.3	1.2	8.3	7.8
Shann Xi	CNY	7.8	1.8	(4.0)	(9.2)	(5.2)	(11.3)	(17.5)	(7.9)	1,371	13.5	17.3	1.5	1.3	#N/A N/A	#N/A N/A
Suntien	HKD	2.0	2.1	(3.5)	(6.7)	(6.7)	16.1	61.2	(5.8)	926	5.9	5.0	0.6	0.6	8.2	7.2
China Oil & Gas	HKD	0.8	2.6	(1.3)	(1.3)	49.1	43.6	29.5	(7.1)	588	11.0	9.6	1.2	1.0	6.5	5.9
Average			**1.1**	**(3.1)**	**(0.6)**	**5.3**	**12.2**	**40.0**	**(0.1)**							
EV																
LG화학	KRW	400,500	(4.3)	(8.0)	(2.6)	(4.6)	20.1	45.9	(1.1)	25,996	13.7	12.8	1.7	1.5	6.5	6.0
삼성SDI	KRW	179,000	(4.5)	(13.5)	(15.6)	(20.4)	(0.3)	51.1	(12.5)	11,318	12.0	9.9	1.0	0.9	11.6	9.3
Panasonic	JPY	1641.0	(0.0)	(1.1)	(0.5)	(4.2)	9.7	40.4	(0.5)	36,545	16.0	14.0	2.1	1.9	6.0	5.6
GS Yuasa	JPY	590.0	(1.0)	(1.0)	5.2	3.7	13.2	27.2	5.2	2,215	16.2	14.4	1.3	1.3	7.1	6.6
NEC	JPY	3325.0	(1.3)	5.1	9.4	9.7	10.5	26.4	9.4	7,863	21.0	16.6	0.9	0.9	7.1	6.5
BYD Auto	CNY	61.9	2.0	(5.5)	(6.0)	(2.2)	27.6	27.2	(4.8)	26,310	25.9	20.5	2.8	2.5	12.6	10.9
Tesla Motors	USD	343.8	(1.6)	0.3	7.2	14.9	5.5	36.7	10.4	58,048	#N/A N/A	85.6	12.1	10.2	38.5	18.4
Kandi Technologies	USD	5.8	(0.9)	(10.2)	(20.1)	(12.9)	45.6	36.9	(15.4)	276	#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			**(1.4)**	**(4.2)**	**(2.9)**	**(2.0)**	**16.5**	**36.5**	**(1.2)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임