SK Energy Daily

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SK증권

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1. News Summary (3 page)

News		Conclusion
WTI comment	감산연장 기대에 상승…WTI 2.5%↑	
Headline	[주간가격] 에틸렌, WoW $5/mt 상승해 CFR SEA $1,285/mt로 마감	다운스트림 역마진으로 가동률 낮아지며 에틸렌 수요 감소할 수 있음
News 1.	[주간가격] MEG, WoW $33/mt 상승해 CFR China $898/mt로 마감	백만톤 수준의 재고가 부담으로 가격 하락 압력 받을 것
News 2.	[주간가격] BD, WoW $20/mt 하락해 CFR China $1,410/mt로 마감	천연고무 가격 하락으로 합성고무 가격도 하락 압력 받을 것
News 3.	[주간가격] SBR, WoW $50/mt 하락해 CFR SEA $1,700/mt로 마감	천연고무 가격 하락과 타이어 메이커들의 수요가 줄어 하락 압력 전망
News 4.	[주간가격] PX, WoW $1/mt 하락해 FOB Korea $928/mt로 마감	사우디 PX 물량 진입과 중미간 무역전쟁 우려로 하락 압력 지속될 것

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	65.9	2.5	5.7	6.8	12.7	37.3
Dubai	$/bbl	65.3	(0.2)	5.8	6.6	4.7	33.4
Gasoline	$/bbl	80.5	0.9	6.1	7.5	6.7	27.8
Diesel	$/bbl	80.3	(0.3)	4.8	5.9	5.1	33.4
Complex margin	$/bbl	8.2	0.3	(0.1)	0.4	0.3	1.4
1M lagging	$/bbl	11.5	(0.1)	1.3	8.3	1.7	10.3
Petrochemical			%	%	%	%	%
Naphtha	$/t	596	0.7	4.2	5.7	(0.4)	31.0
Butadiene	$/t	1,410	(1.4)	(1.4)	1.4	28.2	(32.9)
HDPE	$/t	1,320	0.0	(1.5)	(2.2)	3.1	13.8
MEG	$/t	898	(1.0)	3.8	(12.4)	(2.4)	18.9
PX	$/t	928	(0.9)	(0.1)	(3.3)	4.3	11.4
SM	$/t	1,246	(0.8)	(1.0)	(11.9)	(1.1)	8.8
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.59	(1.0)	(3.6)	(2.5)	1.2	(10.8)
Natural rubber	$/t	1,320	(5.7)	(8.3)	(8.3)	(5.7)	(29.0)
Cotton	C/lbs	81.8	(0.4)	(1.2)	0.5	5.1	5.6

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	03/19	$/t	1,250	2.5	6.6	0.4	16.3
Propylene	03/19	$/t	980	(1.5)	(3.4)	10.1	13.3
Benzene	03/19	$/t	868	(1.7)	(3.1)	(5.7)	4.5
Toluene	03/19	$/t	720	0.0	(4.0)	(2.0)	4.3
Xylene	03/19	$/t	763	(0.3)	0.7	7.4	5.9
PP	03/19	$/t	1,298	(0.8)	1.8	12.1	17.2
PVC	03/19	$/t	970	(1.0)	(1.0)	12.1	3.2
ABS	03/19	$/t	2,020	(2.4)	(1.9)	(2.4)	12.2
SBR	03/19	$/t	1,750	0.0	(0.3)	6.1	(36.2)
SM	03/19	$/t	1,338	(4.3)	(7.0)	0.4	3.7
BPA	03/19	$/t	1,875	(4.5)	(1.7)	0.1	30.9
Caustic	03/19	$/t	601	1.9	9.5	(3.2)	34.8
2-EH	03/19	$/t	1,130	0.4	4.6	9.2	12.4
Caprolactam	03/19	$/t	2,180	1.4	5.8	5.8	(5.2)
Solar				%	%	%	%
Polysilicon	03/21	$/kg	14.9	0.0	(8.0)	(14.6)	(3.6)
Module	03/21	$/W	0.30	(0.3)	(1.6)	(3.2)	(11.7)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	72.9	(0.8)	(3.0)	(6.0)	(13.2)	(11.0)
Shell	EUR	2,199	(0.2)	(0.7)	(2.6)	(10.3)	4.8
Petrochina	CNY	7.83	(2.7)	(1.0)	(4.4)	(3.2)	(1.1)
Gazprom	RUB	142.0	1.8	0.7	(2.7)	7.2	8.4
Petrobras	BRL	21.8	0.1	1.5	3.0	38.1	60.3
Refinery							
Phillips66	USD	93.4	(1.4)	(2.5)	1.7	(7.4)	19.0
Valero	USD	91.2	(2.0)	(2.7)	(1.3)	0.1	35.9
JX	JPY	631.4	(2.8)	0.1	(6.5)	(12.2)	17.8
Neste Oil	EUR	57.2	0.2	(0.2)	(7.4)	6.8	56.8

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	80.4	(2.4)	(5.1)	(9.1)	(14.1)	(10.2)
DowDuPont	USD	63.1	(3.9)	(7.2)	(13.9)	(12.6)	(1.2)
SABIC	SAR	112.8	0.0	2.3	7.8	10.8	17.6
Formosa Pla.	TWD	104.5	0.5	2.5	0.5	9.5	13.0
Shin-Etsu	JPY	10,450	(6.7)	(6.3)	(7.8)	(9.6)	10.1
Renewable							
Wacker	EUR	133.7	0.3	0.0	(3.7)	(17.6)	32.3
First Solar	USD	70.65	(2.0)	1.1	14.3	2.6	147.2
GCL-Poly	HKD	0.96	(5.9)	(15.8)	(26.2)	(30.4)	(7.7)
Tesla Motors	USD	301.5	(2.4)	(6.2)	(14.3)	(7.3)	18.4

4. Coverage Summary

	03/23	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,417	(3.2)	(3.1)	(0.5)	(1.0)	0.4	11.5				* 추정치는 12M fwd 기준임	
KOSPI화학	5,924	(2.8)	(3.5)	(2.0)	(1.0)	4.4	17.3				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	393,500	(3.8)	(4.8)	5.1	0.0	1.2	35.5	매수	450,000	14.4	13.14	1.86
롯데케미칼	430,000	(2.2)	1.1	(2.7)	19.3	11.5	18.9	매수	410,000	(4.7)	11.74	1.29
한화케미칼	29,450	(3.6)	(4.2)	(12.1)	(1.7)	(20.2)	17.1	매수	39,000	32.4	11.24	0.76
금호석유화학	95,800	(3.8)	2.0	5.0	(1.0)	25.4	30.7	매수	150,000	56.6	11.69	1.54
KCC	342,000	(1.7)	(3.1)	(6.3)	(9.8)	(9.6)	(2.8)	매수	450,000	31.6	12.67	0.51
OCI	158,500	0.6	7.1	(2.5)	24.3	48.1	89.6	매수	180,000	13.6	14.89	1.11
SKC	36,950	(5.6)	(7.3)	(1.6)	(16.1)	(11.7)	22.4	매수	55,000	48.8	9.29	0.91
SK이노베이션	209,500	(1.9)	0.5	7.2	2.7	10.8	28.5	매수	230,000	9.8	11.09	1.06
S-Oil	117,000	(2.1)	(2.1)	(2.1)	(6.0)	(4.1)	20.5	매수	140,000	19.7	13.38	2.12
GS	61,900	(3.9)	(1.9)	(2.7)	(0.3)	(6.8)	11.1	매수	80,000	29.2	6.05	0.80
SK가스	92,500	(1.9)	(3.6)	0.2	0.0	(11.1)	(26.3)	매수	130,000	40.5	8.01	0.62
포스코대우	22,300	(0.7)	5.7	7.2	24.9	9.0	0.0	매수	25,000	12.1	10.17	0.90
LG상사	26,300	(3.0)	(2.8)	(5.6)	(2.4)	(9.6)	(10.8)	매수	38,000	44.5	8.86	0.75
한국전력	31,350	(2.0)	(2.2)	(7.1)	(19.1)	(20.1)	(33.6)	매수	50,000	59.5	6.73	0.25
한국가스공사	46,950	(1.9)	(0.2)	(0.3)	10.9	8.8	3.0	매수	60,000	27.8	8.87	0.70

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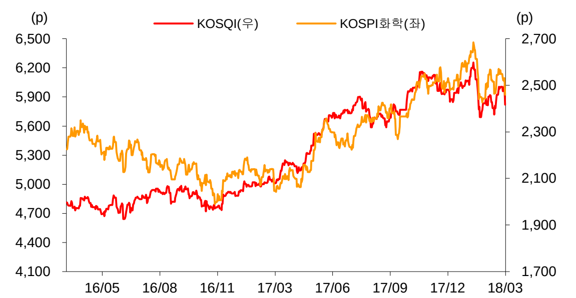
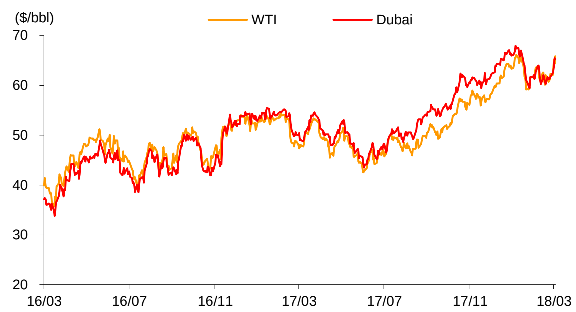
Key Chart

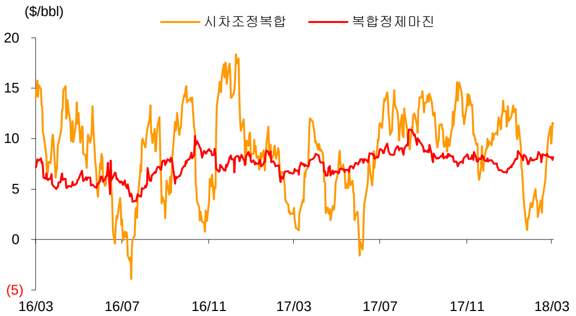
KOSPI/KOSPI화학



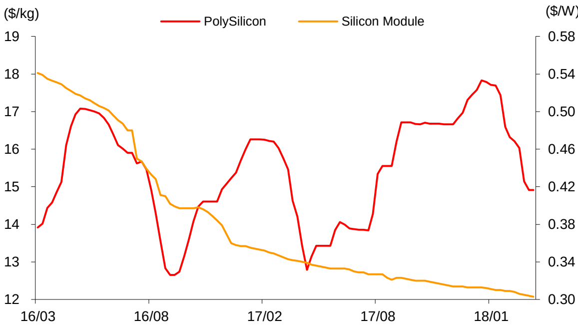
WTI/Dubai



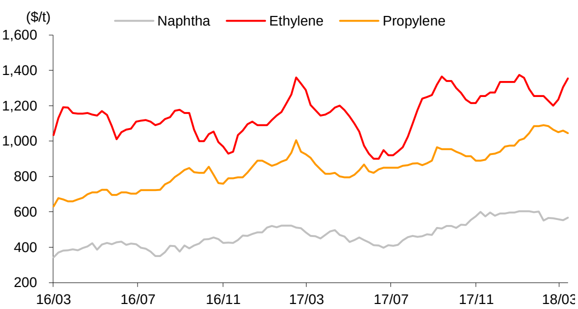
Complex & 1M lagging margin



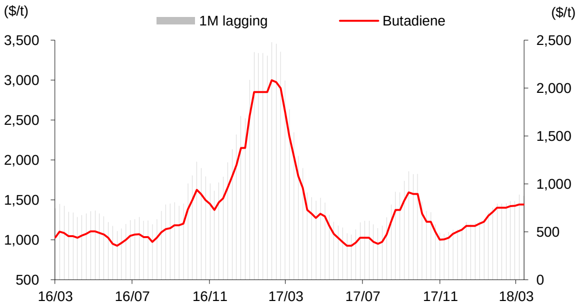
Polysilicon & Module prices



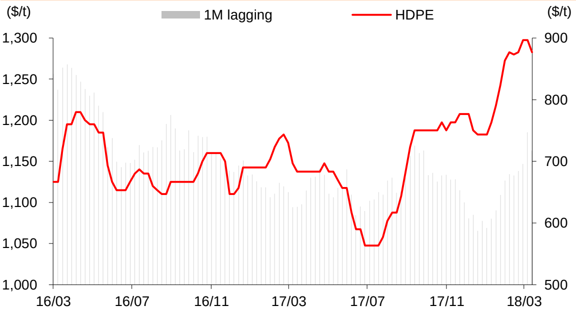
Naphtha/Ethylene/Propylene prices



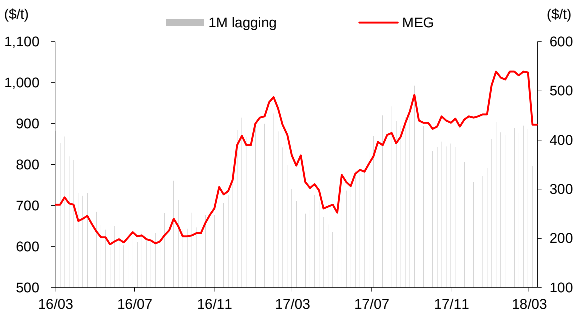
Butadiene price & 1M lagging naphtha spread



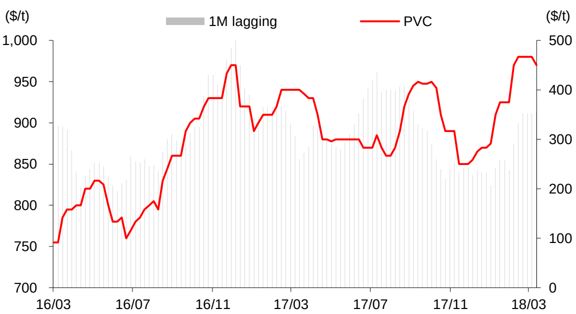
HDPE price & 1M lagging naphtha spread



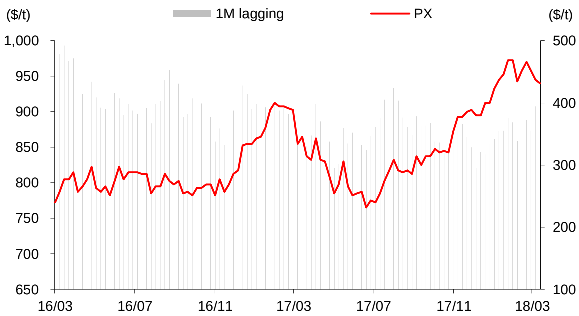
MEG price & 1M lagging naphtha spread



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 $5/mt 상승해 CFR SEA $1,285/mt로 마감
결론	다운스트림 역마진으로 가동률 낮아지며 에틸렌 수요 감소할 수 있음
세부	
	1) TA시즌 돌입에 앞서 공급 부족에 대비해 일본에서 스팟 수요 늘림
	2) 그러나 중국과 대만에서는 다운스트림 마진이 줄며 수요가 제한됨
	3) PE와 MEG는 이미 역마진 구간이고 SM 마진은 축소되고 있음
	4) 대만 Formosa의 NCC 긴급 셧다운으로 중국으로 공급이 제한되었음
	5) 다운스트림 역마진으로 가동률 낮아지며 에틸렌 수요 감소할 수 있음

WTI Comment	(출처: 연합뉴스)
제목	감산연장 기대에 상승…WTI 2.5%↑
상승	칼리드 알 팔리, "글로벌 원유재고 줄이기 위해 감산 협의 지속 필요"
요인	존 볼턴 전 유엔주재 미국 대사가 백악관 NSC 보좌관에 임명됨
하락	
요인	

Issue 1	(출처: Platts)
제목	[주간가격] MEG, WoW $33/mt 상승해 CFR China $898/mt로 마감
결론	백만톤 수준의 재고가 부담으로 가격 하락 압력 받을 것
세부	
	1) 목요일 동중국항 MEG 재고가 WoW 1.7만톤 증가해 75.4만톤 기록함
	2) 그럼에도 불구하고 Huaxicun MEG 선물 가격을 따라 상승 마감함
	3) 관계자, "다음 주에 24만톤이 추가 입고되어 재고는 80만톤이 될 것"
	4) 관계자, "폴리에스터 공장에도 MEG 재고가 50~60만톤 가량 있음"
	5) 백만톤 수준의 재고가 부담으로 가격 하락 압력 받을 것

Issue 2	(출처: Platts)
제목	[주간가격] BD, WoW $20/mt 하락해 CFR China $1,410/mt로 마감
결론	천연고무 가격 하락으로 합성고무 가격도 하락 압력 받을 것
세부	
	1) 중국 내수 가격은 $1,417~$1,444/mt 수준으로 하락함
	2) Sinopec은 동중국 오퍼 가격을 19주만에 $1,417/mt로 2.7% 인하함
	3) 금요일 상해선물거래소에서 천연고무가 Yuan 11,305/mt로 하락 마감함
	4) 심리적 지지선인 Yuan 12,000/mt가 무너진 것으로 시장 우려가 확대됨
	5) 천연고무 가격 하락으로 합성고무 가격도 하락 압력 받을 것

Issue 3	(출처: Platts)
제목	[주간가격] SBR, WoW $50/mt 하락해 CFR SEA $1,700/mt로 마감
결론	천연고무 가격 하락과 타이어 메이커들의 수요가 줄어 하락 압력 전망
세부	
	1) 금요일 상해선물거래소에서 천연고무가 Yuan 11,305/mt로 하락 마감함
	2) 심리적 지지선인 Yuan 12,000/mt가 무너진 것으로 시장 우려가 확대됨
	3) 카본 블랙 숏티지로 타이어 메이커들이 생산에 차질을 빚고 있음
	4) 따라서 SBR 수요가 줄어들며 SBR 공장들 평균 가동률이 55~65% 수준
	5) 천연고무 가격 하락과 타이어 메이커들의 수요가 줄어 하락 압력 전망

Issue 4	(출처: Platts)
제목	[주간가격] PX, WoW $1/mt 하락해 FOB Korea $928/mt로 마감
결론	사우디 PX 물량 진입과 중미간 무역전쟁 우려로 하락 압력 지속될 것
세부	
	1) 중국 원자재 시장이 전반적인 약세를 보이며 5월 PTA 선물 가격이 하락
	2) 트레이더, "미국과 중국의 무역전쟁 우려로 전반적인 침체를 보였음"
	3) 업스트림에서의 호재들이 거시경제적 요인으로 모두 상쇄되었음
	4) Sinopec은 3월 PX CP를 Yuan 7,380/mt로 2월 대비 Yuan 70/mt 상향함
	5) 사우디 PX 물량 진입과 중미간 무역전쟁 우려로 하락 압력 지속될 것

Issue 5	(출처: Platts)
제목	[주간가격] PTA, WoW $9/mt 하락해 CFR China $761/mt로 마감
결론	원재료인 PX 하락 압력이 지속되지만 수요가 받쳐줘 하락폭 제한될 것
세부	
	1) 중국 원자재 시장이 전반적인 약세를 보이며 5월 PTA 선물 가격이 하락
	2) 생산자들은 TA가 시장을 조인다고 여겨 오퍼 가격을 낮추지 않음
	3) 재고는 높은 수준이고 다운스트림인 폴리에스터 공장은 70% 수준임
	4) 통상 3월은 폴레이스터, 실, 직물, PET 생산의 성수기임
	5) 원재료인 PX 하락 압력이 지속되지만 수요가 받쳐줘 하락폭 제한될 것

Issue 6	(출처: PVinsights)
제목	[주간가격] 가격 협상이 답보 상태를 보이며 가격 하락이 제한됨
결론	일시적 낙폭 제한 불구, 전체적 수요 회복 기대감이 낮아 하락 지속 전망
세부	
	1) Polysilicon은 바이어들이 방어적 스탠스를 보이며 플랫한 모습 보임
	2) Multi-crystalline wafer는 2분기 수요 회복이 더딜 것이라는 우려로 하락
	3) Multi-crystalline cell은 wafer 낙폭 제한으로 일시적으로 하락세 멈춤
	4) Panel 가격은 글로벌 수요가 기대에 못 미치며 하락세를 면치 못함
	5) 일시적 낙폭 제한 불구, 전체적 수요 회복 기대감이 낮아 하락 지속 전망

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.810	0.813	0.814	0.813	0.843	0.837	0.927	0.833	0.904	0.887	0.814
	Change, %		*(0.4)*	*(0.5)*	*(0.5)*	*(4.0)*	*(3.3)*	*(12.7)*	*(2.8)*	*(10.4)*	*(8.7)*	*(0.6)*
	USD/JPY	104.7	105.3	106.0	106.9	113.3	112.0	110.9	112.6	108.8	112.1	108.5
	Change, %		*(0.5)*	*(1.2)*	*(2.0)*	*(7.5)*	*(6.5)*	*(5.6)*	*(7.0)*	*(3.7)*	*(6.6)*	*(3.4)*
	USD/KRW	1,082.4	1,072.2	1,066.2	1,078.9	1,079.7	1,136.7	1,122.5	1,066.7	1,160.5	1,130.9	1,072.5
	Change, %		*0.9*	*1.5*	*0.3*	*0.3*	*(4.8)*	*(3.6)*	*1.5*	*(6.7)*	*(4.3)*	*0.9*
Agriculture	Corn	377.3	376.0	382.8	366.3	352.0	353.5	356.8	350.8	358.5	359.4	364.9
	Change, %		*0.3*	*(1.4)*	*3.0*	*7.2*	*6.7*	*5.7*	*7.6*	*5.2*	*5.0*	*3.4*
	Soybean	1,028.3	1,029.8	1,049.5	1,036.3	949.5	984.3	991.0	951.8	987.5	975.9	1,004.0
	Change, %		*(0.1)*	*(2.0)*	*(0.8)*	*8.3*	*4.5*	*3.8*	*8.0*	*4.1*	*5.4*	*2.4*
	Wheat	460.3	455.8	467.8	452.3	424.8	449.5	421.0	427.0	436.4	436.0	453.3
	Change, %		*1.0*	*(1.6)*	*1.8*	*8.4*	*2.4*	*9.3*	*7.8*	*5.5*	*5.6*	*1.5*
	Rice	12.4	12.3	12.5	12.0	12.0	12.4	9.9	11.7	10.3	11.1	12.1
	Change, %		*0.3*	*(0.8)*	*3.3*	*3.4*	*(0.0)*	*25.5*	*5.8*	*19.5*	*11.7*	*1.9*
	Oats	226.3	228.8	242.3	260.0	242.5	248.0	248.0	241.0	196.3	252.3	257.5
	Change, %		*(1.1)*	*(6.6)*	*(13.0)*	*(6.7)*	*(8.8)*	*(8.8)*	*(6.1)*	*15.3*	*(10.3)*	*(12.1)*
MYR/mt	Palm Oil	2,420.0	2,445.0	2,438.0	2,536.0	2,407.0	2,748.0	2,933.0	2,444.0	2,653.8	2,787.3	2,487.5
	Change, %		*(1.0)*	*(0.7)*	*(4.6)*	*0.5*	*(11.9)*	*(17.5)*	*(1.0)*	*(8.8)*	*(13.2)*	*(2.7)*
	Cocoa	2,615.0	2,535.0	2,522.0	2,204.0	1,809.0	1,983.0	2,176.0	1,892.0	2,854.0	2,005.2	2,155.9
	Change, %		*3.2*	*3.7*	*18.6*	*44.6*	*31.9*	*20.2*	*38.2*	*(8.4)*	*30.4*	*21.3*
	Cotton	81.8	82.2	82.9	81.5	77.9	69.1	77.3	78.6	65.6	73.5	80.4
	Change, %		*(0.4)*	*(1.2)*	*0.5*	*5.1*	*18.4*	*5.9*	*4.1*	*24.8*	*11.3*	*1.8*
	Sugar	12.6	12.8	12.7	13.7	14.6	14.0	17.6	15.2	18.2	15.8	13.5
	Change, %		*(1.6)*	*(0.6)*	*(8.1)*	*(13.9)*	*(10.1)*	*(28.6)*	*(17.1)*	*(30.7)*	*(20.5)*	*(7.2)*
	Coffee	117.2	119.0	117.0	119.5	120.4	134.5	140.5	126.2	136.1	133.0	121.3
	Change, %		*(1.5)*	*0.2*	*(1.9)*	*(2.7)*	*(12.8)*	*(16.6)*	*(7.1)*	*(13.9)*	*(11.9)*	*(3.4)*
Energy	WTI	65.9	64.3	62.3	63.6	58.5	50.7	47.7	60.4	43.4	51.0	62.8
	Change, %		*2.5*	*5.7*	*3.7*	*12.7*	*30.0*	*38.1*	*9.0*	*51.9*	*29.3*	*4.9*
	Brent	70.5	68.9	66.2	67.3	65.3	56.9	50.6	66.9	45.1	54.9	67.1
	Change, %		*2.2*	*6.4*	*4.7*	*8.0*	*23.9*	*39.3*	*5.4*	*56.3*	*28.4*	*5.0*
	Natural Gas	2.6	2.6	2.7	2.6	2.7	3.0	3.1	3.0	2.6	3.0	2.9
	Change, %		*(1.0)*	*(3.6)*	*(1.3)*	*(2.8)*	*(12.4)*	*(15.1)*	*(12.3)*	*1.5*	*(14.3)*	*(9.2)*
	Ethanol	1.5	1.5	1.5	1.5	1.3	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		*(2.0)*	*(2.8)*	*(1.4)*	*11.1*	*(4.2)*	*(5.6)*	*9.9*	*(4.2)*	*(3.1)*	*2.0*
	RBOB Gasoline	203.4	201.0	194.6	180.9	176.2	166.8	159.0	179.9	140.0	162.9	185.4
	Change, %		*1.2*	*4.5*	*12.4*	*15.4*	*21.9*	*27.9*	*13.0*	*45.3*	*24.8*	*9.7*
	Coal	96.8	96.7	97.2	105.1	100.2	97.2	81.0	100.8	65.5	88.2	103.2
	Change, %		*0.1*	*(0.4)*	*(7.9)*	*(3.4)*	*(0.5)*	*19.5*	*(4.0)*	*47.8*	*9.7*	*(6.3)*
Metal	Gold	1,347.3	1,329.0	1,314.4	1,328.8	1,275.3	1,297.4	1,245.3	1,302.6	1,248.5	1,258.6	1,329.6
	Change, %		*1.4*	*2.5*	*1.4*	*5.6*	*3.8*	*8.2*	*3.4*	*7.9*	*7.0*	*1.3*
	Silver	16.6	16.4	16.3	16.5	16.4	17.0	17.6	16.9	17.1	17.1	16.8
	Change, %		*1.1*	*1.3*	*0.2*	*1.0*	*(2.5)*	*(5.8)*	*(2.3)*	*(3.2)*	*(3.0)*	*(1.3)*
	Copper	6,660.0	6,695.0	6,888.0	7,095.0	7,125.0	6,457.0	5,825.0	7,247.0	4,872.0	6,199.4	7,014.3
	Change, %		*(0.5)*	*(3.3)*	*(6.1)*	*(6.5)*	*3.1*	*14.3*	*(8.1)*	*36.7*	*7.4*	*(5.1)*
	Nickel	843.5	856.2	883.6	889.9	770.0	686.9	654.1	809.1	646.4	680.2	855.1
	Change, %		*(1.5)*	*(4.5)*	*(5.2)*	*9.5*	*22.8*	*29.0*	*4.3*	*30.5*	*24.0*	*(1.4)*
	Zinc	3,217.0	3,203.0	3,260.0	3,503.0	3,265.5	3,031.0	2,814.0	3,319.0	2,097.5	2,888.5	3,395.4
	Change, %		*0.4*	*(1.3)*	*(8.2)*	*(1.5)*	*6.1*	*14.3*	*(3.1)*	*53.4*	*11.4*	*(5.3)*
	Lead	2,341.5	2,368.3	2,384.0	2,533.0	2,481.3	2,486.5	2,365.5	2,482.8	1,868.3	2,315.7	2,524.6
	Change, %		*(1.1)*	*(1.8)*	*(7.6)*	*(5.6)*	*(5.8)*	*(1.0)*	*(5.7)*	*25.3*	*1.1*	*(7.3)*
	Aluminum	13,690.0	13,855.0	13,870.0	14,210.0	14,540.0	16,445.0	13,705.0	15,020.0	12,373.5	14,556.6	14,341.3
	Change, %		*(1.2)*	*(1.3)*	*(3.7)*	*(5.8)*	*(16.8)*	*(0.1)*	*(8.9)*	*10.6*	*(6.0)*	*(4.5)*
	Cobalt	94,050.0	94,300.0	88,375.0	80,725.0	75,205.0	59,341.0	54,000.0	75,205.0	25,480.1	55,906.9	81,122.5
	Change, %		*(0.3)*	*6.4*	*16.5*	*25.1*	*58.5*	*74.2*	*25.1*	*269.1*	*68.2*	*15.9*
	HR Coil	825.0	825.0	822.0	745.0	636.0	620.0	653.0	662.0	519.3	620.1	741.4
	Change, %		*0.0*	*0.4*	*10.7*	*29.7*	*33.1*	*26.3*	*24.6*	*58.9*	*33.1*	*11.3*
	Scrap	400.0	410.0	420.0	385.0	367.0	350.0	345.0	367.0	275.7	344.7	384.5
	Change, %		*(2.4)*	*(4.8)*	*3.9*	*9.0*	*14.3*	*15.9*	*9.0*	*45.1*	*16.0*	*4.0*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		03/23	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	65.9	64.3	62.3	61.7	58.5	50.7	48.0	53.7	43.4	50.9	62.8
	Change, %		*2.5*	*5.7*	*6.8*	*12.7*	*30.0*	*37.3*	*22.6*	*51.9*	*29.4*	*5.0*
	Dubai	65.3	65.4	61.7	61.3	62.4	54.7	49.0	53.8	41.3	53.1	63.8
	Change, %		*(0.2)*	*5.8*	*6.6*	*4.7*	*19.5*	*33.4*	*21.4*	*58.2*	*23.1*	*2.4*
Crude Oil Product	**Gasoline(휘발유)**	80.5	79.8	75.8	74.8	75.4	69.8	63.0	69.8	56.3	68.0	77.4
	Change, %		*0.9*	*6.1*	*7.5*	*6.7*	*15.3*	*27.8*	*15.2*	*43.1*	*18.3*	*4.0*
	Kerosene(등유)	80.8	80.9	76.4	78.3	76.3	69.3	59.7	66.4	52.9	65.2	79.8
	Change, %		*(0.1)*	*5.8*	*3.2*	*6.0*	*16.7*	*35.5*	*21.6*	*52.8*	*23.9*	*1.2*
	Diesel(경유)	80.3	80.5	76.6	75.8	76.4	68.8	60.2	65.5	52.1	65.6	78.5
	Change, %		*(0.3)*	*4.8*	*5.9*	*5.1*	*16.6*	*33.4*	*22.5*	*54.0*	*22.3*	*2.3*
	Bunker-C	58.6	58.4	56.5	55.7	57.4	51.4	44.1	52.1	35.5	49.7	57.6
	Change, %		*0.3*	*3.8*	*5.3*	*2.2*	*14.0*	*33.1*	*12.6*	*65.0*	*18.1*	*1.8*
	Naphtha	65.2	64.8	62.2	59.8	65.6	55.9	48.5	53.5	42.6	53.7	63.3
	Change, %		*0.6*	*4.9*	*9.1*	*(0.5)*	*16.7*	*34.5*	*22.0*	*53.1*	*21.3*	*3.0*
Dubai Spread	**Gasoline(휘발유)**	15.2	14.3	14.1	13.5	13.0	15.2	14.0	16.0	14.9	14.9	13.6
	Change		*0.8*	*1.1*	*1.6*	*2.1*	*(0.0)*	*1.1*	*(0.9)*	*0.2*	*0.2*	*1.6*
	Kerosene(등유)	15.5	15.4	14.7	17.0	13.9	14.6	10.7	12.6	11.6	12.1	16.0
	Change		*0.0*	*0.8*	*(1.5)*	*1.6*	*0.9*	*4.8*	*2.9*	*3.9*	*3.3*	*(0.5)*
	Diesel(경유)	14.9	15.0	14.8	14.5	14.0	14.2	11.2	11.7	10.8	12.5	14.7
	Change		*(0.1)*	*0.1*	*0.5*	*0.9*	*0.8*	*3.7*	*3.3*	*4.1*	*2.4*	*0.3*
	Bunker-C	(6.7)	(7.0)	(5.2)	(5.6)	(5.0)	(3.3)	(4.9)	(1.8)	(5.8)	(3.4)	(6.3)
	Change		*0.3*	*(1.5)*	*(1.1)*	*(1.7)*	*(3.5)*	*(1.8)*	*(4.9)*	*(0.9)*	*(3.3)*	*(0.5)*
	Naphtha	(0.1)	(0.6)	0.4	(1.6)	3.2	1.2	(0.5)	(0.4)	1.3	0.6	(0.5)
	Change		*0.5*	*(0.6)*	*1.4*	*(3.3)*	*(1.4)*	*0.4*	*0.3*	*(1.4)*	*(0.8)*	*0.4*
Refining Margin	**Simple(단순)**	2.2	2.0	2.8	2.6	2.6	3.9	1.9	3.8	1.9	3.2	2.3
	Change		*0.2*	*(0.6)*	*(0.4)*	*(0.4)*	*(1.7)*	*0.3*	*(1.6)*	*0.3*	*(0.9)*	*(0.0)*
	Complex(복합)	8.2	7.9	8.2	7.8	7.9	8.8	6.8	8.3	7.0	8.0	7.8
	Change		*0.3*	*(0.1)*	*0.4*	*0.3*	*(0.7)*	*1.4*	*(0.1)*	*1.2*	*0.2*	*0.4*
	Complex(lagging)	11.5	11.6	10.1	3.2	9.7	13.5	1.1	18.0	8.5	8.9	8.1
	Change		*(0.1)*	*1.3*	*8.3*	*1.7*	*(2.1)*	*10.3*	*(6.5)*	*3.0*	*2.5*	*3.4*

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			03/23	03/22	03/21	03/20	03/19	03/16	03/15	03/14	03/13	03/12
Spot Price	**Naphtha**	CFR Japan	596.0	592.0	582.9	578.5	575.5	572.0	570.0	566.0	558.0	564.5
	Ethylene	CFR SE Asia	1,285.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,250.0	1,250.0	1,250.0	1,230.0
	Propylene	FOB Korea	1,020.0	1,020.0	1,020.0	1,020.0	1,025.0	1,025.0	1,010.0	1,010.0	1,015.0	1,015.0
	Butadiene	FOB Korea	1,410.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,390.0
	HDPE	CFR FE Asia	1,320.0	1,320.0	1,320.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0
	LDPE	CFR FE Asia	1,215.0	1,215.0	1,215.0	1,220.0	1,225.0	1,225.0	1,225.0	1,225.0	1,225.0	1,225.0
	LLDPE	CFR FE Asia	1,190.0	1,190.0	1,190.0	1,200.0	1,205.0	1,205.0	1,205.0	1,205.0	1,205.0	1,205.0
	MEG	CFR China	898.0	907.0	899.0	908.0	911.0	865.0	880.0	917.0	910.0	895.0
	PP	CFR FE Asia	1,185.0	1,210.0	1,190.0	1,200.0	1,220.0	1,200.0	1,200.0	1,200.0	1,225.0	1,225.0
	PX	CFR China	928.0	936.0	932.0	931.0	933.0	929.0	932.0	932.5	935.5	935.3
	PTA	CFR China	761.0	770.0	769.0	769.0	770.0	770.0	775.0	775.0	780.0	785.0
	Benzene	FOB Korea	836.3	852.3	841.3	850.3	858.3	835.3	842.7	861.7	864.0	875.0
	Toluene	FOB Korea	677.0	678.5	678.0	677.0	677.0	677.0	677.0	677.0	682.0	686.0
	Xylene	FOB Korea	738.0	738.0	737.0	738.0	738.0	744.0	746.0	749.0	745.0	745.0
	SM	FOB Korea	1,246.0	1,256.0	1,231.0	1,251.0	1,276.0	1,259.0	1,284.0	1,326.0	1,326.0	1,326.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	568.0	553.0	565.0	590.5	574.5	462.5	484.5	399.5	493.5	579.0
	Change, %			*2.7*	*0.5*	*(3.8)*	*(1.1)*	*22.8*	*17.2*	*42.2*	*15.1*	*(1.9)*
	Ethylene	CFR SE Asia	1,250.0	1,220.0	1,172.5	1,245.0	1,165.0	1,075.0	990.0	1,040.9	1,090.9	1,239.8
	Change, %			*2.5*	*6.6*	*0.4*	*7.3*	*16.3*	*26.3*	*20.1*	*14.6*	*0.8*
	Propylene	CFR SE Asia	980.0	995.0	1,015.0	890.0	810.0	865.0	815.0	705.7	823.6	1,057.3
	Change, %			*(1.5)*	*(3.4)*	*10.1*	*21.0*	*13.3*	*20.2*	*38.9*	*19.0*	*(7.3)*
	Butadiene	CFR SE Asia	1,390.0	1,390.0	1,350.0	1,125.0	965.0	2,000.0	2,100.0	1,116.8	1,481.1	1,313.6
	Change, %			*0.0*	*3.0*	*23.6*	*44.0*	*(30.5)*	*(33.8)*	*24.5*	*(6.1)*	*5.8*
	Benzene	CFR SE Asia	867.5	882.5	895.0	920.0	860.0	830.0	822.5	646.7	838.8	913.6
	Change, %			*(1.7)*	*(3.1)*	*(5.7)*	*0.9*	*4.5*	*5.5*	*34.1*	*3.4*	*(5.0)*
	Toluene	CFR SE Asia	720.0	720.0	750.0	735.0	715.0	690.0	690.0	630.5	689.5	746.8
	Change, %			*0.0*	*(4.0)*	*(2.0)*	*0.7*	*4.3*	*4.3*	*14.2*	*4.4*	*(3.6)*
	Xylene	CFR SE Asia	762.5	765.0	757.5	710.0	670.0	720.0	675.0	627.7	668.8	754.3
	Change, %			*(0.3)*	*0.7*	*7.4*	*13.8*	*5.9*	*13.0*	*21.5*	*14.0*	*1.1*
Spread	**Ethylene**	-Naphtha	682.0	667.0	607.5	654.5	590.5	612.5	505.5	641.4	597.4	660.8
	Change, %			*2.2*	*12.3*	*4.2*	*15.5*	*11.3*	*34.9*	*6.3*	*14.2*	*3.2*
	Propylene	-Naphtha	412.0	442.0	450.0	299.5	235.5	402.5	330.5	306.2	330.1	478.3
	Change, %			*(6.8)*	*(8.4)*	*37.6*	*74.9*	*2.4*	*24.7*	*34.6*	*24.8*	*(13.9)*
	Butadiene	-Naphtha	822.0	837.0	785.0	534.5	390.5	1,537.5	1,615.5	717.3	987.6	734.7
	Change, %			*(1.8)*	*4.7*	*53.8*	*110.5*	*(46.5)*	*(49.1)*	*14.6*	*(16.8)*	*11.9*
	Benzene	-Naphtha	299.5	329.5	330.0	329.5	285.5	367.5	338.0	247.2	345.3	334.7
	Change, %			*(9.1)*	*(9.2)*	*(9.1)*	*4.9*	*(18.5)*	*(11.4)*	*21.2*	*(13.3)*	*(10.5)*
	Toluene	-Naphtha	152.0	167.0	185.0	144.5	140.5	227.5	205.5	231.0	196.0	167.9
	Change, %			*(9.0)*	*(17.8)*	*5.2*	*8.2*	*(33.2)*	*(26.0)*	*(34.2)*	*(22.4)*	*(9.5)*
	Xylene	-Naphtha	194.5	212.0	192.5	119.5	95.5	257.5	190.5	228.2	175.3	175.4
	Change, %			*(8.3)*	*1.0*	*62.8*	*103.7*	*(24.5)*	*2.1*	*(14.8)*	*10.9*	*10.9*

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	1,282.5	1,297.5	1,280.0	1,187.5	1,197.5	1,137.5	1,142.5	1,134.6	1,142.5	1,257.7
	Change, %			(1.2)	0.2	8.0	7.1	12.7	12.3	13.0	12.3	2.0
	MEG	CFR SE Asia	897.5	897.5	1,017.5	917.5	892.5	822.5	847.5	660.8	850.6	996.4
	Change, %			0.0	(11.8)	(2.2)	0.6	9.1	5.9	35.8	5.5	(9.9)
	PVC	CFR SE Asia	970.0	980.0	980.0	865.0	850.0	940.0	920.0	823.4	899.9	947.3
	Change, %			(1.0)	(1.0)	12.1	14.1	3.2	5.4	17.8	7.8	2.4
	PP	CFR SE Asia	1,297.5	1,307.5	1,275.0	1,157.5	1,147.5	1,107.5	1,032.5	978.4	1,099.6	1,257.4
	Change, %			(0.8)	1.8	12.1	13.1	17.2	25.7	32.6	18.0	3.2
	2-EH	CFR Korea	1,130.0	1,125.0	1,080.0	1,035.0	990.0	1,005.0	865.0	772.4	970.0	1,082.7
	Change, %			0.4	4.6	9.2	14.1	12.4	30.6	46.3	16.5	4.4
	ABS	CFR SE Asia	2,020.0	2,070.0	2,060.0	2,070.0	1,930.0	1,800.0	1,635.0	1,347.1	1,844.7	2,049.1
	Change, %			(2.4)	(1.9)	(2.4)	4.7	12.2	23.5	49.9	9.5	(1.4)
	SBR	CFR SE Asia	1,750.0	1,750.0	1,755.0	1,650.0	1,590.0	2,745.0	2,000.0	1,483.0	1,980.5	1,729.1
	Change, %			0.0	(0.3)	6.1	10.1	(36.2)	(12.5)	18.0	(11.6)	1.2
	SM	CFR SE Asia	1,337.5	1,397.5	1,437.5	1,332.5	1,280.0	1,290.0	1,205.0	1,064.6	1,253.8	1,404.1
	Change, %			(4.3)	(7.0)	0.4	4.5	3.7	11.0	25.6	6.7	(4.7)
	Caustic	FOB NEA	601.0	590.0	549.0	621.0	700.0	446.0	422.5	316.6	491.2	579.4
	Change, %			1.9	9.5	(3.2)	(14.1)	34.8	42.2	89.8	22.4	3.7
	PX	CFR SE Asia	940.0	945.0	957.5	895.0	892.5	865.0	855.0	790.4	844.4	953.4
	Change, %			(0.5)	(1.8)	5.0	5.3	8.7	9.9	18.9	11.3	(1.4)
	PO	CFR China	1,875.0	1,962.5	1,907.5	1,872.5	1,782.5	1,432.5	1,562.5	1,396.8	1,601.2	1,941.6
	Change, %			(4.5)	(1.7)	0.1	5.2	30.9	20.0	34.2	17.1	(3.4)
	Caprolactam	CFR SE Asia	2,180.0	2,150.0	2,060.0	2,060.0	2,040.0	2,300.0	1,850.0	1,344.9	1,936.4	2,073.6
	Change, %			1.4	5.8	5.8	6.9	(5.2)	17.8	62.1	12.6	5.1
	PTA	CFR SE Asia	790.0	810.0	777.5	727.5	707.5	667.5	642.5	613.7	667.8	772.7
	Change, %			(2.5)	1.6	8.6	11.7	18.4	23.0	28.7	18.3	2.2
Spread	**HDPE**		714.5	744.5	715.0	597.0	623.0	675.0	658.0	735.1	649.0	678.8
	Change, %			(4.0)	(0.1)	19.7	14.7	5.9	8.6	(2.8)	10.1	5.3
	MEG		329.5	344.5	452.5	327.0	318.0	360.0	363.0	261.3	357.1	417.4
	Change, %			(4.4)	(27.2)	0.8	3.6	(8.5)	(9.2)	26.1	(7.7)	(21.1)
	PVC		402.0	427.0	415.0	274.5	275.5	477.5	435.5	423.9	406.4	368.3
	Change, %			(5.9)	(3.1)	46.4	45.9	(15.8)	(7.7)	(5.2)	(1.1)	9.1
	PP		729.5	754.5	710.0	567.0	573.0	645.0	548.0	578.9	606.1	678.4
	Change, %			(3.3)	2.7	28.7	27.3	13.1	33.1	26.0	20.4	7.5
	2-EH		562.0	572.0	515.0	444.5	415.5	542.5	380.5	372.9	476.5	503.8
	Change, %			(1.7)	9.1	26.4	35.3	3.6	47.7	50.7	17.9	11.6
	ABS		1,452.0	1,517.0	1,495.0	1,479.5	1,355.5	1,337.5	1,150.5	947.6	1,351.2	1,470.1
	Change, %			(4.3)	(2.9)	(1.9)	7.1	8.6	26.2	53.2	7.5	(1.2)
	SBR	BD spread	360.0	360.0	405.0	525.0	625.0	745.0	(100.0)	366.2	499.4	415.5
	Change, %			0.0	(11.1)	(31.4)	(42.4)	(51.7)	(460.0)	(1.7)	(27.9)	(13.3)
	SM		769.5	844.5	872.5	742.0	705.5	827.5	720.5	665.1	760.3	825.1
	Change, %			(8.9)	(11.8)	3.7	9.1	(7.0)	6.8	15.7	1.2	(6.7)
	Caustic											
	Change, %											
	PX		372.0	392.0	392.5	304.5	318.0	402.5	370.5	390.9	351.0	374.5
	Change, %			(5.1)	(5.2)	22.2	17.0	(7.6)	0.4	(4.8)	6.0	(0.7)
	PO	propylene sprea	895.0	967.5	892.5	982.5	972.5	567.5	747.5	691.1	777.6	884.3
	Change, %			(7.5)	0.3	(8.9)	(8.0)	57.7	19.7	29.5	15.1	1.2
	Caprolactam	benzene spreac	1,312.5	1,267.5	1,165.0	1,140.0	1,180.0	1,470.0	1,027.5	698.2	1,097.6	1,160.0
	Change, %			3.6	12.7	15.1	11.2	(10.7)	27.7	88.0	19.6	13.1
	PTA	px spread	132.0	148.5	107.3	101.0	82.8	62.0	44.0	60.4	76.7	105.3
	Change, %			(11.1)	23.1	30.7	59.5	112.9	200.0	118.5	72.1	25.3

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

SK Energy Daily

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Global peers

	Currency	03/23	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	63.1	(3.9)	(7.2)	(13.9)	(12.6)	(9.9)	(1.2)	(11.5)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	102.8	(1.1)	(4.6)	(0.6)	11.0	18.9	31.7	11.0	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	80.4	(2.4)	(5.1)	(9.1)	(14.1)	(9.3)	(10.2)	(12.4)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	76.0	(2.0)	(4.6)	(4.1)	3.8	(3.2)	(2.4)	4.1	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	105.1	(2.3)	(2.9)	(1.3)	3.2	3.9	13.2	3.4	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	61.4	(2.6)	(3.3)	(9.9)	(5.5)	(7.3)	(0.3)	(7.4)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	588	(4.2)	(4.9)	(11.8)	(29.2)	(15.9)	(6.8)	(27.4)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	978	(4.4)	(5.4)	(11.6)	(21.8)	(6.8)	16.4	(20.9)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,450	(6.7)	(6.3)	(7.8)	(9.6)	3.5	10.1	(8.7)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,363	(2.5)	(3.2)	(1.2)	(7.2)	(1.0)	27.4	(6.2)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,303	(4.2)	(7.1)	(5.8)	3.9	8.8	20.1	3.8	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	7,660	(5.4)	(9.9)	(11.8)	(25.2)	(19.2)	(11.3)	(23.5)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	112.8	0.0	2.3	7.8	10.8	11.8	17.6	11.2	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	70.4	0.0	(0.1)	5.3	20.8	18.9	27.6	19.3	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	104.5	0.5	2.5	0.5	9.5	12.4	13.0	5.9	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	110.0	(0.9)	0.0	0.9	12.8	18.0	16.3	6.8	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	82.2	(1.1)	0.6	3.9	7.9	7.6	15.1	5.5	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	6.08	(0.2)	1.8	2.7	(4.7)	(4.3)	(5.0)	(3.9)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.22	(4.3)	(2.6)	(3.9)	(19.9)	(31.7)	(40.6)	(16.9)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	894	(1.6)	(0.7)	(4.3)	(2.9)	9.4	40.4	(1.7)	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	108.4	0.0	3.3	(0.3)	9.6	20.4	(2.4)	11.7	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	98.5	0.5	(2.0)	4.0	15.5	26.3	38.2	15.9	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.2	(0.4)	0.4	0.9	7.6	12.1	8.9	6.2	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	393,500	(3.8)	(4.8)	1.2	0.0	6.6	37.1	(2.8)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	430,000	(2.2)	1.1	(6.7)	19.3	15.9	21.5	16.8	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	29,450	(3.6)	(4.2)	(12.9)	(1.7)	(17.3)	14.8	(6.8)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	95,800	(3.8)	2.0	8.1	(1.0)	32.1	28.9	(3.7)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	36,950	(5.6)	(7.3)	(3.3)	(16.1)	(8.7)	21.7	(21.4)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	61,400	(1.3)	(1.0)	3.4	(2.1)	13.3	26.3	(2.7)	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	9,280	(5.8)	(0.9)	(3.8)	23.4	42.1	6.7	22.4	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(2.5)**	**(2.5)**	**(2.9)**	**(0.5)**	**4.9**	**12.4**	**(1.1)**							
Refinery																
Valero	USD	91.2	(2.0)	(2.7)	(1.3)	0.1	22.8	35.9	(0.8)	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	57.7	2.2	5.1	1.2	4.0	17.6	29.8	5.2	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	117.5	0.9	1.3	1.7	4.0	12.4	10.8	1.7	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	100.9	(0.1)	1.7	6.7	(10.1)	(3.0)	23.3	(11.8)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	71.3	(2.3)	2.3	6.7	7.4	30.2	44.6	8.0	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	32.2	(0.2)	0.8	2.5	(22.5)	(9.9)	(17.5)	(22.1)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	47.8	(0.8)	2.8	6.2	(5.6)	39.6	76.8	(6.7)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	93.4	(1.4)	(2.5)	1.7	(7.4)	3.9	19.0	(7.7)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	25.8	0.5	(0.4)	(2.1)	(17.2)	(1.5)	(0.9)	(16.9)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	631.4	(2.8)	0.1	(6.5)	(12.2)	8.5	17.8	(13.1)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	3,850.0	(7.1)	(2.2)	(6.3)	(13.8)	26.4	(1.5)	(14.9)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	57.2	0.2	(0.2)	(7.4)	6.8	55.0	56.8	7.2	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	68.0	(0.3)	(9.1)	(4.8)	(4.9)	5.9	13.1	(4.6)	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	44.2	(2.6)	(6.9)	(6.0)	(0.8)	(9.7)	0.5	(0.0)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	209,500	(1.9)	0.5	5.0	2.7	12.3	28.5	2.4	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	117,000	(2.1)	(2.1)	(1.7)	(6.0)	(2.5)	20.9	0.0	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	61,900	(3.9)	(1.9)	(4.2)	(0.3)	(4.2)	10.3	(0.5)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**(1.4)**	**(0.8)**	**(0.5)**	**(4.5)**	**12.0**	**21.7**	**(4.4)**							

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

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SK증권

Global peers

	Currency	03/23	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	73	(0.8)	(3.0)	(6.0)	(13.2)	(8.8)	(11.0)	(12.9)	308,869	15.6	15.5	1.6	1.6	7.2	6.9
BP	GBP	462	(0.2)	(2.4)	(2.9)	(10.6)	(0.9)	1.3	(11.5)	130,335	14.5	13.7	1.3	1.3	5.2	5.0
Shell	EUR	2,199	(0.2)	(0.7)	(2.6)	(10.3)	0.4	4.8	(11.3)	262,230	13.2	12.2	1.3	1.3	5.8	5.6
Chevron	USD	113	(0.6)	(2.1)	0.3	(9.6)	(3.7)	4.7	(9.8)	215,820	18.2	17.9	1.5	1.5	6.4	6.3
Total	EUR	46	(1.0)	(4.1)	(2.7)	(1.4)	(0.3)	(1.5)	(0.5)	149,138	11.9	11.6	1.2	1.2	5.2	4.9
Sinopec	CNY	7	(0.1)	6.4	3.8	13.3	16.2	19.6	11.4	124,770	12.9	12.3	1.1	1.0	4.6	4.6
Petrochina	CNY	8	(2.7)	(1.0)	(4.4)	(3.2)	(1.5)	(1.1)	(3.2)	215,187	25.0	19.1	1.2	1.1	5.7	5.5
CNOOC	CNY	11	(2.5)	1.7	3.8	8.3	0.2	(10.9)	7.1	65,445	9.1	9.0	1.0	0.9	3.7	3.6
Gazprom	RUB	142	1.8	0.7	(2.7)	7.2	16.4	8.4	8.8	58,842	3.8	3.9	0.3	0.2	3.6	3.5
Rosneft	RUB	315	(0.5)	(1.5)	(6.8)	7.1	(0.7)	(1.1)	7.9	58,343	7.6	6.6	0.8	0.7	4.8	4.4
Anadarko	USD	62	1.5	5.2	1.2	16.3	26.1	1.3	14.8	31,724	42.5	40.3	2.6	2.5	6.4	5.9
Petrobras	BRL	22	0.1	1.5	3.0	38.1	38.6	60.3	35.1	90,240	10.4	8.4	0.9	0.8	5.5	5.1
Lukoil	USD	3,875	0.5	0.0	1.0	15.8	30.5	26.4	16.2	57,379	6.0	6.0	0.8	0.7	N/A	N/A
Kinder	USD	15	(2.3)	(8.5)	(11.8)	(16.8)	(22.1)	(29.0)	(16.9)	47,497	18.5	16.8	1.0	1.0	9.8	9.4
Statoil	NOK	182	0.9	1.8	0.4	3.9	16.7	25.5	3.7	78,376	15.8	15.0	1.8	1.8	3.6	3.4
BHP	AUD	29	(3.1)	(1.3)	(6.2)	(1.1)	10.9	18.9	(2.7)	113,126	15.7	16.3	1.9	1.9	6.0	6.1
PTT E&P	THB	116	(0.4)	(1.3)	0.0	15.8	30.5	26.6	15.5	14,707	13.2	12.5	1.2	1.1	3.7	3.6
Petronas gas	MYR	18	(0.7)	(0.7)	1.1	4.6	(0.8)	(9.3)	2.3	9,040	18.8	18.4	2.7	2.6	10.4	10.2
Chesapeake	USD	3	(1.3)	0.3	(4.1)	(20.3)	(27.3)	(39.7)	(22.5)	2,791	3.9	4.2	#N/A N/A	5.0	6.0	5.9
Noble Energy	USD	30	(1.0)	2.9	(1.4)	5.0	11.9	(8.3)	3.8	14,884	38.3	25.0	1.4	1.3	7.5	6.5
Average		**0**	**(0.6)**	**(0.3)**	**(1.8)**	**2.4**	**6.6**	**4.3**	**1.8**							
PV																
WACKER	EUR	133.7	0.3	0.0	(3.7)	(17.6)	14.7	32.3	(17.6)	8,620	19.4	16.5	2.0	2.0	6.8	6.4
GCL-Poly	HKD	1.0	(5.9)	(15.8)	(26.2)	(30.4)	(10.3)	(7.7)	(31.4)	2,275	6.0	5.3	0.6	0.5	6.2	5.7
SunPower	USD	7.7	(0.3)	7.4	8.1	(14.4)	1.3	24.4	(8.2)	1,083	#N/A N/A	47.8	4.5	4.0	13.1	8.9
Canadian Solar	USD	17.1	0.8	10.3	10.5	(0.1)	3.8	46.8	1.3	991	11.4	10.2	1.0	0.9	8.7	9.1
JA Solar	USD	6.7	(0.4)	(2.9)	(10.0)	(9.9)	(15.6)	17.7	(10.9)	316	12.6	10.5	1.5	1.4	3.9	3.5
Yingli	USD	1.6	0.6	(5.5)	(3.7)	(8.2)	(35.8)	(25.7)	(7.7)	28	#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	70.7	(2.0)	1.1	14.3	2.6	37.4	147.2	4.6	7,381	42.2	21.7	1.3	1.3	12.6	7.6
한화큐셀	USD	7.8	(1.8)	(4.7)	(8.5)	8.1	(3.6)	16.9	11.5	652	35.6	25.3	#N/A N/A	#N/A N/A	8.3	7.5
OCI	KRW	158,500	0.6	7.1	(1.2)	24.3	48.8	84.5	16.5	3,502	0.0	14.3	0.0	1.0	0.0	6.8
웅진에너지	KRW	6,600	(6.0)	(7.7)	(12.0)	(18.9)	(25.0)	35.0	(19.7)	182	N/A	0.0	1.0	0.0	6.8	0.0
신성솔라에너지	KRW	1,710	(3.1)	(4.7)	(9.0)	(12.5)	(13.9)	(8.6)	(10.7)	274	N/A	1.0	0.0	6.8	0.0	8.1
Average			**(1.5)**	**(1.4)**	**(3.8)**	**(7.0)**	**0.2**	**33.0**	**(6.6)**							
Gas Company																
Towngas China	HKD	6.8	(3.0)	6.2	4.1	13.3	27.7	52.8	8.8	2,410	13.6	12.2	1.1	1.1	11.9	10.8
Kulun	HKD	6.7	(1.9)	(6.1)	(7.7)	(17.7)	(7.3)	(7.0)	(17.3)	6,925	9.0	7.8	1.0	0.9	5.5	5.0
Beijing Enterprise	HKD	41.4	(1.2)	(4.6)	(5.5)	(9.9)	(2.9)	(0.4)	(10.8)	6,660	7.3	6.5	0.8	0.7	12.8	12.6
ENN Energy	HKD	64.8	1.0	3.5	5.7	13.4	18.1	45.1	16.2	8,957	14.3	12.2	2.8	2.4	8.8	7.7
China Resources Gas	HKD	26.8	(0.7)	4.1	(0.2)	(4.6)	(0.6)	(4.3)	(5.5)	7,597	14.2	12.7	2.5	2.2	8.1	7.4
China Gas Holdings	HKD	27.8	(0.2)	9.9	11.2	25.8	19.3	116.2	28.7	17,606	19.0	16.1	4.6	3.9	14.5	12.5
Shenzen Gas	HKD	16.5	(1.8)	4.8	2.1	12.4	11.8	40.7	10.6	4,263	11.7	11.0	1.4	1.3	8.0	8.0
Shann Xi	CNY	6.8	(6.1)	(6.6)	(6.9)	(26.1)	(18.8)	(28.0)	(19.1)	1,203	13.0	14.7	1.3	1.2	#N/A N/A	#N/A N/A
Suntien	HKD	2.1	(2.3)	8.2	9.3	6.0	7.6	47.2	2.4	1,004	6.1	5.3	0.7	0.6	8.0	6.9
China Oil & Gas	HKD	0.7	(4.3)	0.0	(6.9)	(1.5)	26.4	13.6	(21.2)	498	10.3	8.9	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(2.0)**	**1.9**	**0.5**	**1.1**	**8.1**	**27.6**	**(0.7)**							
EV																
LG화학	KRW	393,500	(3.8)	(4.8)	1.2	0.0	6.6	37.1	(2.8)	25,733	13.7	12.7	1.7	1.5	6.3	5.8
삼성SDI	KRW	199,500	(4.1)	(7.4)	9.6	(1.5)	(4.3)	47.2	(2.4)	12,709	15.2	11.4	1.1	1.0	12.7	10.2
Panasonic	JPY	1593.5	(3.1)	(5.4)	(3.2)	(4.5)	(2.3)	32.8	(3.4)	37,217	15.1	13.1	2.0	1.8	5.8	5.4
GS Yuasa	JPY	556.0	(3.5)	(4.0)	(7.5)	(0.9)	(2.3)	6.5	(0.9)	2,189	15.8	14.2	1.3	1.2	6.9	6.4
NEC	JPY	3090.0	(2.8)	(4.2)	(3.9)	1.0	4.0	12.0	1.6	7,663	20.9	14.6	0.9	0.8	6.8	6.0
BYD Auto	CNY	59.5	(5.0)	(7.4)	(5.3)	(4.4)	(4.6)	20.3	(8.6)	25,228	25.5	20.3	2.7	2.4	12.3	10.9
Tesla Motors	USD	301.5	(2.4)	(6.2)	(14.3)	(7.3)	(14.1)	18.4	(3.2)	50,936	#N/A N/A	120.0	11.1	10.0	44.3	17.2
Kandi Technologies	USD	5.1	2.0	2.0	(11.4)	(29.9)	3.1	36.5	(25.7)	273	#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			**(2.8)**	**(4.7)**	**(4.4)**	**(5.9)**	**(1.7)**	**26.3**	**(5.7)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임