SK Energy Daily

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SK 증권

1. News Summary (3 page)

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News		Conclusion
WTI comment	닷새 연속 상승…WTI 64달러 돌파	
Headline	[주간가격] 에틸렌, WoW 5$/mt 하락해 CFR SEA 1,290$/mt로 마감	동남아 스팟 카고 물량을 모두 떨어내어 추가 하락은 제한적일 것
News 1.	[주간가격] MEG, WoW 37$/mt 상승해 CFR China 1,025$/mt로 마감	춘절 연휴 앞두고 리스탁킹 기조가 나타나며 단기 모멘텀 유효함
News 2.	[주간가격] BD, WoW 10$/mt 상승해 FOB Korea 1,190$/mt로 마감	춘절 연휴 앞두고 리스탁킹 기조와 라니냐 효과로 단기 모멘텀 유효함
News 3.	[주간가격] SBR, 플랫한 모습 보이며 CFR NEA 1,520$/mt로 마감	원재료인 BD와 함께 춘절 연휴 앞두고 리스탁킹 영향으로 강세일 것
News 4.	[주간가격] PX, WoW 11.2$/mt 상승해 FOB Korea 936.33$/mt로 마감	PTA 공장들의 TA와 낮은 가동률로 가격 하락 압력 지속될 전망

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	64.3	0.8	4.7	12.7	25.0	22.8
Dubai	$/bbl	66.3	(0.3)	1.5	10.1	19.7	22.1
Gasoline	$/bbl	78.1	(1.0)	1.9	5.0	11.7	10.8
Diesel	$/bbl	80.3	0.1	0.9	8.3	17.2	21.9
Complex margin	$/bbl	6.7	0.0	(0.2)	(1.5)	(1.4)	(1.7)
1M lagging	$/bbl	12.7	(1.0)	0.6	5.9	1.4	2.9
Petrochemical			%	%	%	%	%
Naphtha	$/t	604	0.0	(0.1)	(0.2)	14.8	16.6
Butadiene	$/t	1,190	0.8	0.8	9.2	0.0	(54.1)
HDPE	$/t	1,290	0.0	0.8	0.0	9.3	12.2
MEG	$/t	1,025	2.0	3.7	12.6	17.1	13.3
PX	$/t	936	(0.4)	1.2	5.3	13.2	10.8
SM	$/t	1,364	0.4	3.6	3.6	15.8	6.2
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	3.20	3.8	14.5	21.4	(2.4)	(12.6)
Natural rubber	$/t	1,490	0.0	3.5	4.9	2.8	(32.0)
Cotton	C/lbs	81.7	(1.2)	4.7	7.6	19.0	13.0

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	01/08	$/t	1,330	4.5	9.7	7.9	32.3
Propylene	01/08	$/t	930	3.6	9.4	13.1	7.5
Benzene	01/08	$/t	898	0.8	(0.8)	13.6	2.6
Toluene	01/08	$/t	735	0.0	2.1	4.3	4.3
Xylene	01/08	$/t	730	2.5	5.0	12.3	6.6
PP	01/08	$/t	1,188	2.6	2.6	1.7	13.9
PVC	01/08	$/t	875	0.6	2.3	(7.9)	(1.7)
ABS	01/08	$/t	2,050	0.0	1.0	2.5	18.5
SBR	01/08	$/t	1,650	0.0	0.0	(5.7)	(31.3)
SM	01/08	$/t	1,343	4.1	(0.7)	8.3	8.0
BPA	01/08	$/t	2,128	6.6	20.5	28.4	39.5
Caustic	01/08	$/t	615	(0.6)	(12.1)	22.8	47.3
2-EH	01/08	$/t	1,035	1.5	1.5	3.5	17.6
Caprolactam	01/08	$/t	2,020	(1.9)	(1.5)	5.2	4.1
Solar				%	%	%	%
Polysilicon	01/10	$/kg	17.8	(0.2)	2.8	6.5	13.3
Module	01/10	$/W	0.31	(0.3)	(0.3)	(2.5)	(12.6)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	87.5	0.7	0.9	5.8	6.2	1.4
Shell	EUR	2,574	0.1	1.7	6.1	11.9	12.7
Petrochina	CNY	8.75	(0.1)	1.9	9.1	9.8	5.2
Gazprom	RUB	144.0	(0.4)	5.0	6.3	14.3	(8.4)
Petrobras	BRL	17.3	0.3	2.8	11.7	7.6	8.8
Refinery							
Phillips66	USD	105.0	2.5	2.8	6.0	11.3	24.5
Valero	USD	96.8	2.3	2.9	11.3	24.2	45.4
JX	JPY	779.5	(0.6)	3.1	13.0	39.9	50.4
Neste Oil	EUR	56.2	(0.5)	6.8	8.6	43.9	70.2

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	94.5	0.7	(0.3)	0.5	6.2	7.1
DowDuPont	USD	75.4	0.3	(0.0)	6.5	5.6	29.4
SABIC	SAR	101.5	0.0	0.1	0.3	2.8	9.5
Formosa Pla.	TWD	101.5	0.5	3.2	8.8	7.3	11.8
Shin-Etsu	JPY	11,945	(0.1)	(1.9)	0.2	18.8	26.5
Renewable							
Wacker	EUR	172.1	2.8	0.8	14.5	43.9	59.2
First Solar	USD	73.41	(3.7)	6.1	6.5	55.8	110.5
GCL-Poly	HKD	1.48	1.4	5.7	18.4	25.4	55.8
Tesla Motors	USD	336.2	(0.5)	6.2	(1.4)	(5.5)	46.4

4. Coverage Summary

	01/12	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,496	0.3	(0.0)	0.6	0.9	3.6	20.3				* 추정치는 12M fwd 기준임	
KOSPI화학	6,214	(0.6)	2.2	2.9	7.7	14.4	19.8				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	426,000	1.1	5.2	8.4	13.6	35.7	52.1	매수	450,000	5.6	14.22	2.01
롯데케미칼	394,500	3.0	12.2	8.1	(0.1)	13.4	1.3	매수	410,000	3.9	10.77	1.18
한화케미칼	32,550	(0.9)	(3.4)	7.8	(2.4)	4.2	22.6	매수	39,000	19.8	12.42	0.85
금호석유화학	103,500	(4.6)	(4.6)	15.9	54.2	44.2	17.7	매수	150,000	44.9	12.63	1.66
KCC	407,000	0.6	3.6	4.6	6.8	0.2	13.2	매수	450,000	10.6	15.07	0.60
OCI	178,500	2.0	10.5	37.8	79.8	112.2	129.1	매수	180,000	0.8	16.77	1.25
SKC	45,450	2.0	(3.2)	4.6	12.6	21.2	42.0	매수	55,000	21.0	11.43	1.12
SK이노베이션	201,000	0.2	(0.2)	(1.5)	(4.1)	23.3	26.0	매수	230,000	14.4	10.64	1.01
S-Oil	113,500	(2.2)	0.4	(7.3)	(14.0)	10.7	31.7	매수	140,000	23.3	12.98	2.06
GS	64,800	1.3	4.2	6.4	(3.6)	(8.2)	22.0	매수	80,000	23.5	6.33	0.84
SK가스	95,300	1.2	0.8	0.5	2.3	(18.9)	(16.4)	매수	130,000	36.4	8.26	0.64
포스코대우	21,500	4.1	7.8	15.6	12.6	(3.4)	(24.3)	매수	25,000	16.3	9.80	0.87
LG상사	31,050	2.1	5.8	11.7	12.9	3.5	(1.4)	매수	38,000	22.4	10.46	0.89
한국전력	36,450	(0.7)	(2.0)	(5.2)	(6.8)	(12.8)	(15.6)	매수	50,000	37.2	7.83	0.29
한국가스공사	47,950	7.3	10.4	11.9	9.4	(4.1)	(1.5)	매수	60,000	25.1	9.06	0.71

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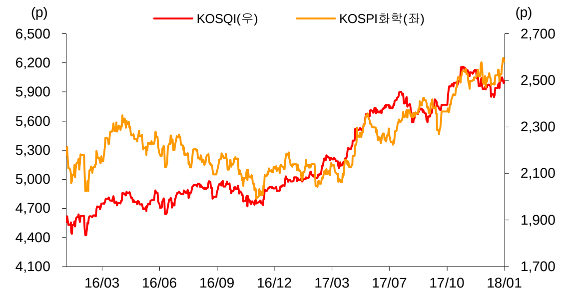
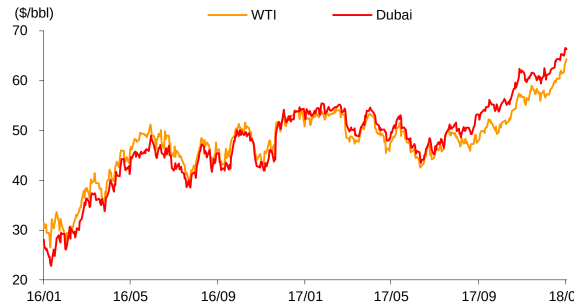
Key Chart

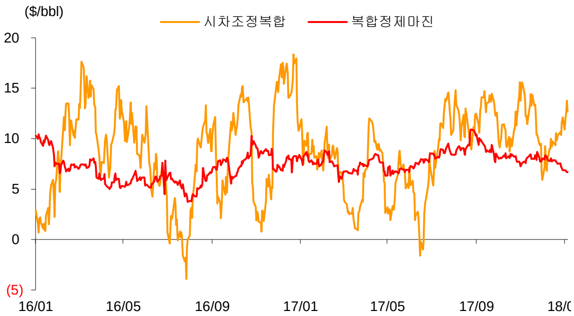
KOSPI/KOSPI화학



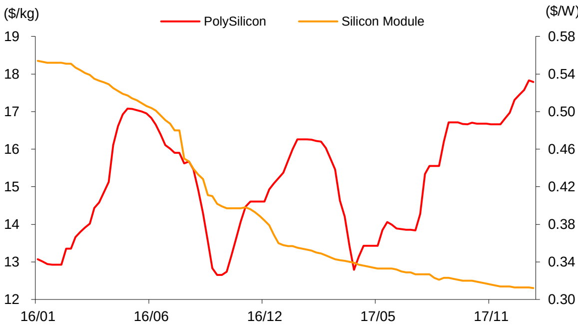
WTI/Dubai



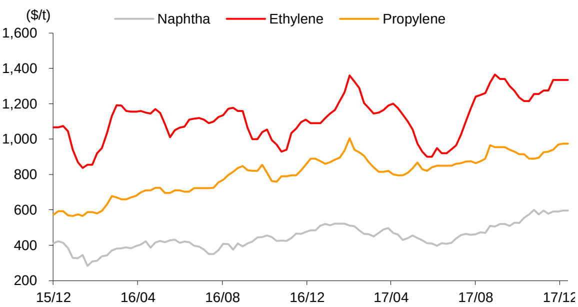
Complex & 1M lagging margin



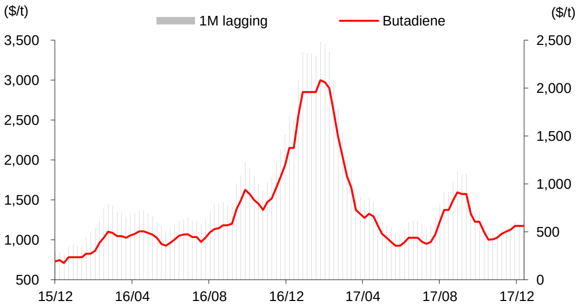
Polysilicon & Module prices



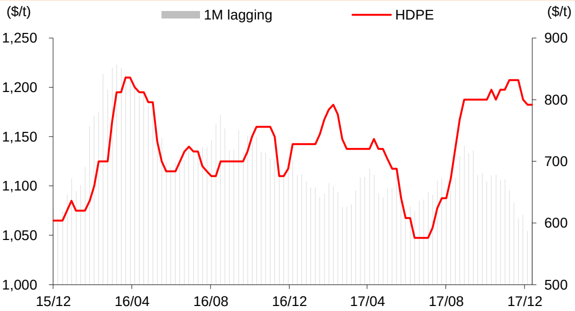
Naphtha/Ethylene/Propylene prices



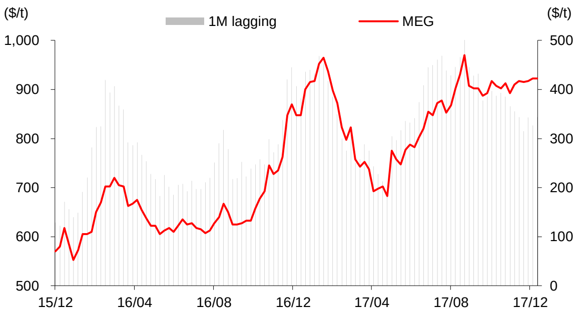
Butadiene price & 1M lagging naphtha spread



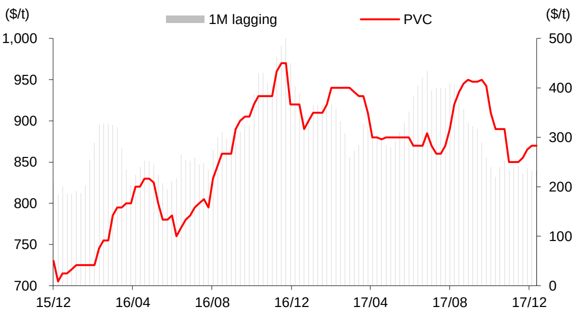
HDPE price & 1M lagging naphtha spread



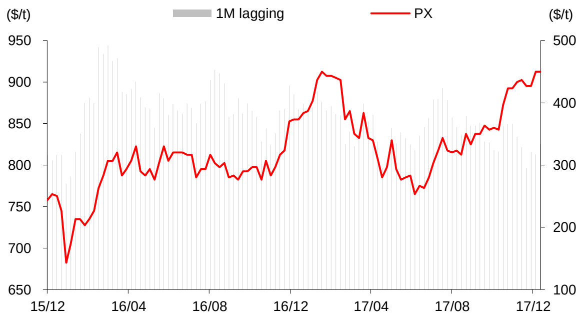
MEG price & 1M lagging naphtha spread



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$/mt 하락해 CFR SEA 1,290$/mt로 마감
결론	동남아 스팟 카고 물량을 모두 떨어내어 추가 하락은 제한적일 것
세부	
	1) 주 초반 강세를 보이며 CFR NEA 에틸렌은 '17년 4월 이후 최고가 기록
	2) 주 후반 싱가포르, 말레이시아, 태국 생산자들이 물량 쏟아내며 하락
	3) 동남아 생산자들은 차익거래를 위해 스팟 카고를 동북아 지역에 판 것
	4) SM, MEG 등 에틸렌 파생품 마진은 각각 100$/mt, 10~20$/mt 수준 보임
	5) 동남아 스팟 카고 물량을 모두 떨어내어 추가 하락은 제한적일 것

WTI Comment	(출처: 연합뉴스)
제목	닷새 연속 상승…WTI 64달러 돌파
상승 요인	러시아 에너지 장관, "원유 공급 줄고 있지만 아직 균형 아님"
하락 요인	

Issue 1	(출처: Platts)
제목	[주간가격] MEG, WoW 37$/mt 상승해 CFR China 1,025$/mt로 마감
결론	춘절 연휴 앞두고 리스탁킹 기조가 나타나며 단기 모멘텀 유효함
세부	
	1) 2015년 5월 이래 최고가 기록했으며 아시아 MEG 마진은 47$/mt로 상승
	2) 동중국항 MEG 재고는 42.9만톤으로 WoW 3.2만톤(6.5%) 감소함
	3) 관계자, "리스탁킹이 시작되며 스팟 카고 물량이 타이트해진 것"
	4) 폴리에스터 1Q TA로 인한 수요 감소분을 상쇄시킬 만큼의 강한 수요임
	5) 춘절 연휴 앞두고 리스탁킹 기조가 나타나며 단기 모멘텀 유효함

Issue 2	(출처: Platts)
제목	[주간가격] BD, WoW 10$/mt 상승해 FOB Korea 1,190$/mt로 마감
결론	춘절 연휴 앞두고 리스탁킹 기조와 라니냐 효과로 단기 모멘텀 유효함
세부	
	1) 화요일 Sinopec은 동중국 BD 오퍼 가격을 1,251$/mt로 3.2% 올림
	2) 관계자, "춘절 연휴를 앞두고 중국 바이어들의 ABS 수요가 급증함"
	3) 1월 도착하는 deepsea 카고는 다음주에 들어오는 것으로 파악됨
	4) 인도네시아 Chandra Asri는 3.7만톤 규모의 BD 공장을 2분기 가동함
	5) 춘절 연휴 앞두고 리스탁킹 기조와 라니냐 효과로 단기 모멘텀 유효함

Issue 3	(출처: Platts)
제목	[주간가격] SBR, 플랫한 모습 보이며 CFR NEA 1,520$/mt로 마감
결론	원재료인 BD와 함께 춘절 연휴 앞두고 리스탁킹 영향으로 강세일 것
세부	
	1) 관계자, "대부분의 SBR 공장이 가동률이 높았으며 수요도 안정적"
	2) Sinopec의 Qilu PetChem 10만톤 SBR 공장이 1월 하순 재가동 예정
	3) SBR 생산자들은 춘절을 앞두고 리스탁킹을 기다리고 있음
	4) 원재료인 BD는 목요일 강세를 보이며 FOB Korea 기준 1,190$/mt 기록
	5) 원재료인 BD와 함께 춘절 연휴 앞두고 리스탁킹 영향으로 강세일 것

Issue 4	(출처: Platts)
제목	[주간가격] PX, WoW 11.2$/mt 상승해 FOB Korea 936.33$/mt로 마감
결론	PTA 공장들의 TA와 낮은 가동률로 가격 하락 압력 지속될 전망
세부	
	1) 주 후반 3월물에 대한 매도세가 강해지며 센티먼트가 악화되었음
	2) 동중국 PTA 생산자들의 예기치 못한 셧다운 이후 대만 카고 수요 급증
	3) 관계자, "이 수요는 150만톤 규모 Taoyuan PTA 공장 TA 시기와 겹침"
	4) Jiaxing PetChem의 220만톤 규모 PTA 공장 가동률도 60%로 수급 타이트
	5) PTA 공장들의 TA와 낮은 가동률로 가격 하락 압력 지속될 전망

Issue 5	(출처: Platts)
제목	[주간가격] PTA, WoW 5$/mt 상승해 CFR China 735$/mt로 마감
결론	아시아지역 PTA 공장들의 정기보수로 가격 상승 압력 지속될 전망
세부	
	1) 아시아 공장들 셧다운으로 공급이 타이트해져 상승 마감함
	2) 인도 Reliance Industry는 125만톤 규모 PTA 라인 정기보수 돌입함
	3) RIL의 51만톤 규모 PTA 라인은 5월에 정기보수 돌입 예정
	4) 중국 Jiangyin은 120만톤 규모 PTA 공장을 1월 20일까지 정기 보수
	5) 아시아지역 PTA 공장들의 정기보수로 가격 상승 압력 지속될 전망

Issue 6	(출처: PVinsights)
제목	[주간가격] 달러 절상으로 태양광 제품 약세 폭이 강화됨
결론	폴리실리콘 공급 타이트도 해소되며 바이어들의 보수적 접근이 증가
세부	
	1) 폴리실리콘 가격이 달러대비 RMB 약세에 접어들며 6주간의 강세 종료
	2) Multi-crystalline wafer는 CNY의 달러대비 약세로 2주 연속 하락함
	3) Multi-crystalline cell 가격은 수요가 뒷걸음질치며 가격 하락함
	4) Multi-crystalline module 가격도 달러 강세로 이번주 가격 하락함
	5) 폴리실리콘 공급 타이트도 해소되며 바이어들의 보수적 접근이 증가

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**	0.820	0.831	0.831	0.852	0.845	0.876	0.942	0.833	0.904	0.887	0.829
	Change, %		(1.4)	(1.4)	(3.8)	(3.1)	(6.5)	(13.0)	(1.6)	(9.3)	(7.6)	(1.2)
	USD/JPY	111.1	111.3	113.1	113.6	112.3	113.2	114.7	112.6	108.8	112.1	112.1
	Change, %		(0.2)	(1.8)	(2.2)	(1.1)	(1.9)	(3.2)	(1.4)	2.1	(1.0)	(1.0)
	USD/KRW	1,064.9	1,072.2	1,062.7	1,092.2	1,133.2	1,145.0	1,184.7	1,066.7	1,160.5	1,130.9	1,065.3
	Change, %		(0.7)	0.2	(2.5)	(6.0)	(7.0)	(10.1)	(0.2)	(8.2)	(5.8)	(0.0)
Agriculture	**Corn**	346.3	348.8	351.3	335.8	349.0	376.3	358.3	350.8	358.5	359.4	349.4
	Change, %		(0.7)	(1.4)	3.1	(0.8)	(8.0)	(3.3)	(1.3)	(3.4)	(3.6)	(0.9)
	Soybean	944.0	940.5	961.5	975.8	992.0	1,016.8	1,032.0	951.8	987.5	975.9	952.5
	Change, %		0.4	(1.8)	(3.3)	(4.8)	(7.2)	(8.5)	(0.8)	(4.4)	(3.3)	(0.9)
	Wheat	420.5	433.3	430.8	387.3	430.5	522.5	426.3	427.0	436.4	436.0	428.8
	Change, %		(2.9)	(2.4)	8.6	(2.3)	(19.5)	(1.3)	(1.5)	(3.6)	(3.6)	(1.9)
	Rice	11.6	11.5	11.6	12.3	12.3	11.6	9.8	11.7	10.3	11.1	11.6
	Change, %		0.5	0.1	(5.5)	(5.5)	0.0	18.5	(0.9)	12.0	4.7	0.0
	Oats	249.5	250.5	248.5	227.3	261.8	300.3	235.8	241.0	196.3	252.3	247.9
	Change, %		(0.4)	0.4	9.8	(4.7)	(16.9)	5.8	3.5	27.1	(1.1)	0.7
MYR/mt	**Palm Oil**	2,474.0	2,509.0	2,570.0	2,365.0	2,716.0	2,679.0	3,255.0	2,444.0	2,653.8	2,787.3	2,523.2
	Change, %		(1.4)	(3.7)	4.6	(8.9)	(7.7)	(24.0)	1.2	(6.8)	(11.2)	(1.9)
	Cocoa	1,914.0	1,928.0	1,895.0	1,872.0	2,090.0	1,782.0	2,230.0	1,892.0	2,854.0	2,005.2	1,910.9
	Change, %		(0.7)	1.0	2.2	(8.4)	7.4	(14.2)	1.2	(32.9)	(4.5)	0.2
	Cotton	81.7	82.7	78.0	72.9	67.8	68.1	72.3	78.6	65.6	73.5	79.5
	Change, %		(1.2)	4.7	12.0	20.4	19.9	12.9	3.9	24.5	11.1	2.7
	Sugar	14.2	14.2	15.1	13.8	14.3	13.5	20.8	15.2	18.2	15.8	14.8
	Change, %		0.0	(6.0)	3.0	(0.7)	5.1	(31.7)	(6.5)	(21.9)	(10.3)	(3.9)
	Coffee	122.3	122.8	128.5	117.1	126.4	126.0	149.6	126.2	136.1	133.0	125.7
	Change, %		(0.4)	(4.8)	4.4	(3.2)	(3.0)	(18.3)	(3.1)	(10.1)	(8.1)	(2.8)
Energy	**WTI**	64.3	63.8	61.4	57.1	50.6	45.5	53.0	60.4	43.4	51.0	62.5
	Change, %		0.8	4.7	12.5	27.1	41.3	21.3	6.4	48.2	26.2	2.8
	Brent	69.9	69.3	67.6	63.3	56.3	47.7	56.0	66.9	45.1	54.9	68.5
	Change, %		0.9	3.3	10.3	24.2	46.4	24.7	4.5	55.0	27.4	2.1
	Natural Gas	3.2	3.1	2.8	2.7	3.0	3.0	3.4	3.0	2.6	3.0	3.0
	Change, %		3.8	14.5	19.5	7.1	7.2	(5.5)	8.4	25.4	5.9	7.1
	Ethanol	1.4	1.3	1.3	1.3	1.4	1.6	1.5	1.3	1.5	1.5	1.3
	Change, %		0.7	3.2	4.8	(4.8)	(12.5)	(8.0)	2.8	(10.4)	(9.3)	1.9
	RBOB Gasoline	185.0	183.7	178.6	169.8	158.3	152.1	161.1	179.9	140.0	162.9	181.5
	Change, %		0.7	3.6	8.9	16.8	21.6	14.8	2.8	32.1	13.5	1.9
	Coal	105.9	106.1	105.3	98.7	95.2	83.2	84.1	100.8	65.5	88.2	105.2
	Change, %		(0.2)	0.5	7.3	11.2	27.2	25.9	5.0	61.7	20.0	0.6
Metal	**Gold**	1,338.0	1,322.4	1,319.4	1,244.6	1,293.7	1,220.5	1,195.4	1,302.6	1,248.5	1,258.6	1,322.5
	Change, %		1.2	1.4	7.5	3.4	9.6	11.9	2.7	7.2	6.3	1.2
	Silver	17.2	17.0	17.1	15.7	17.3	15.9	16.8	16.9	17.1	17.1	17.1
	Change, %		1.5	0.7	9.7	(0.0)	8.3	2.8	1.8	0.8	1.0	0.7
	Copper	7,110.0	7,140.5	7,121.0	6,663.0	6,887.0	5,905.0	5,842.0	7,247.0	4,872.0	6,199.4	7,140.7
	Change, %		(0.4)	(0.2)	6.7	3.2	20.4	21.7	(1.9)	45.9	14.7	(0.4)
	Nickel	803.7	802.8	794.3	716.6	740.3	592.4	701.8	809.1	646.4	680.2	801.9
	Change, %		0.1	1.2	12.2	8.6	35.7	14.5	(0.7)	24.3	18.1	0.2
	Zinc	3,383.5	3,386.0	3,354.0	3,157.0	3,250.0	2,833.0	2,727.0	3,319.0	2,097.5	2,888.5	3,359.7
	Change, %		(0.1)	0.9	7.2	4.1	19.4	24.1	1.9	61.3	17.1	0.7
	Lead	2,538.8	2,549.3	2,539.8	2,521.3	2,547.3	2,309.0	2,194.5	2,482.8	1,868.3	2,315.7	2,549.8
	Change, %		(0.4)	(0.0)	0.7	(0.3)	10.0	15.7	2.3	35.9	9.6	(0.4)
	Aluminum	14,935.0	14,995.0	14,965.0	14,050.0	16,195.0	14,045.0	12,925.0	15,020.0	12,373.5	14,556.6	14,950.0
	Change, %		(0.4)	(0.2)	6.3	(7.8)	6.3	15.6	(0.6)	20.7	2.6	(0.1)
	Cobalt	74,947.0	75,092.0	75,170.0	72,750.0	59,543.5	59,190.0	33,499.0	75,205.0	25,480.1	55,906.9	75,106.2
	Change, %		(0.2)	(0.3)	3.0	25.9	26.6	123.7	(0.3)	194.1	34.1	(0.2)
	HR Coil	669.0	666.0	662.0	642.0	595.0	624.0	622.0	662.0	519.3	620.1	664.3
	Change, %		0.5	1.1	4.2	12.4	7.2	7.6	1.1	28.8	7.9	0.7
	Scrap	384.0	384.0	367.0	360.0	330.0	340.0	305.0	367.0	275.7	344.7	373.0
	Change, %		0.0	4.6	6.7	16.4	12.9	25.9	4.6	39.3	11.4	2.9

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

SK Energy Daily

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Refining Price Data

Daily Price		01/12	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	64.3	63.8	61.4	57.0	51.5	46.5	52.4	53.7	43.4	50.9	62.4
	Change, %		*0.8*	*4.7*	*12.7*	*25.0*	*38.2*	*22.8*	*19.7*	*48.3*	*26.3*	*3.0*
	Dubai	66.3	66.5	65.3	60.2	55.4	47.0	54.3	53.8	41.3	53.1	65.5
	Change, %		*(0.3)*	*1.5*	*10.1*	*19.7*	*41.1*	*22.1*	*23.1*	*60.5*	*24.9*	*1.3*
Crude Oil Product	**Gasoline(휘발유)**	78.1	78.9	76.6	74.4	69.9	60.6	70.4	69.8	56.3	68.0	77.3
	Change, %		*(1.0)*	*1.9*	*5.0*	*11.7*	*28.9*	*10.8*	*11.8*	*38.8*	*14.8*	*1.1*
	Kerosene(등유)	81.0	80.9	79.6	74.0	67.9	57.6	66.2	66.4	52.9	65.2	79.9
	Change, %		*0.2*	*1.8*	*9.5*	*19.4*	*40.7*	*22.4*	*22.0*	*53.2*	*24.2*	*1.4*
	Diesel(경유)	80.3	80.2	79.6	74.2	68.6	60.0	65.9	65.5	52.1	65.6	79.6
	Change, %		*0.1*	*0.9*	*8.3*	*17.2*	*33.8*	*21.9*	*22.6*	*54.1*	*22.4*	*0.9*
	Bunker-C	58.7	58.8	58.2	55.2	51.7	45.8	52.1	52.1	35.5	49.7	58.3
	Change, %		*(0.1)*	*0.8*	*6.3*	*13.6*	*28.2*	*12.6*	*12.7*	*65.1*	*18.2*	*0.6*
	Naphtha	66.2	66.4	66.6	64.2	57.1	44.2	57.0	53.5	42.6	53.7	66.8
	Change, %		*(0.3)*	*(0.6)*	*3.0*	*15.9*	*49.8*	*16.1*	*23.8*	*55.3*	*23.1*	*(0.9)*
Dubai Spread	**Gasoline(휘발유)**	11.8	12.4	11.3	14.1	14.5	13.6	16.1	16.0	14.9	14.9	11.8
	Change		*(0.6)*	*0.5*	*(2.4)*	*(2.7)*	*(1.8)*	*(4.4)*	*(4.2)*	*(3.2)*	*(3.1)*	*(0.0)*
	Kerosene(등유)	14.7	14.4	14.3	13.8	12.5	10.6	11.9	12.6	11.6	12.1	14.4
	Change		*0.4*	*0.5*	*0.9*	*2.3*	*4.1*	*2.9*	*2.1*	*3.2*	*2.6*	*0.3*
	Diesel(경유)	14.0	13.7	14.3	13.9	13.2	13.0	11.6	11.7	10.8	12.5	14.1
	Change		*0.3*	*(0.3)*	*0.1*	*0.9*	*1.0*	*2.4*	*2.3*	*3.2*	*1.5*	*(0.1)*
	Bunker-C	(7.6)	(7.8)	(7.1)	(5.0)	(3.8)	(1.2)	(2.2)	(1.8)	(5.8)	(3.4)	(7.1)
	Change		*0.1*	*(0.5)*	*(2.6)*	*(3.9)*	*(6.4)*	*(5.4)*	*(5.9)*	*(1.8)*	*(4.2)*	*(0.5)*
	Naphtha	(0.1)	(0.2)	1.2	4.0	1.7	(2.8)	2.7	(0.4)	1.3	0.6	1.3
	Change		*0.0*	*(1.4)*	*(4.1)*	*(1.8)*	*2.7*	*(2.8)*	*0.2*	*(1.4)*	*(0.8)*	*(1.4)*
Refining Margin	**Simple(단순)**	1.1	1.0	1.4	2.8	3.1	4.0	3.7	3.8	1.9	3.2	1.4
	Change		*0.1*	*(0.3)*	*(1.7)*	*(2.0)*	*(2.9)*	*(2.6)*	*(2.7)*	*(0.8)*	*(2.1)*	*(0.3)*
	Complex(복합)	6.7	6.7	6.9	8.2	8.1	8.1	8.4	8.3	7.0	8.0	6.9
	Change		*0.0*	*(0.2)*	*(1.5)*	*(1.4)*	*(1.4)*	*(1.7)*	*(1.6)*	*(0.3)*	*(1.3)*	*(0.3)*
	Complex(lagging)	12.7	13.8	12.1	6.8	11.3	7.8	9.8	18.0	8.5	8.9	11.9
	Change		*(1.0)*	*0.6*	*5.9*	*1.4*	*5.0*	*2.9*	*(5.2)*	*4.2*	*3.8*	*0.8*

자료 : Petronet, SK증권
참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음
참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

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Petrochemical Price Data

Daily Price			01/12	01/11	01/10	01/09	01/08	01/05	01/04	01/03	01/02	12/29
Spot Price	**Naphtha**	CFR Japan	604.0	603.8	614.8	608.3	602.5	604.5	611.8	606.3	617.3	613.9
	Ethylene	CFR SE Asia	1,290.0	1,310.0	1,310.0	1,295.0	1,295.0	1,295.0	1,290.0	1,270.0	1,270.0	1,270.0
	Propylene	FOB Korea	985.0	985.0	984.0	982.0	975.0	975.0	965.0	955.0	946.0	946.0
	Butadiene	FOB Korea	1,190.0	1,180.0	1,180.0	1,180.0	1,180.0	1,180.0	1,100.0	1,100.0	1,100.0	1,100.0
	HDPE	CFR FE Asia	1,290.0	1,290.0	1,290.0	1,290.0	1,290.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0
	LDPE	CFR FE Asia	1,210.0	1,210.0	1,210.0	1,210.0	1,200.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0
	LLDPE	CFR FE Asia	1,180.0	1,180.0	1,180.0	1,170.0	1,160.0	1,155.0	1,155.0	1,155.0	1,155.0	1,155.0
	MEG	CFR China	1,025.0	1,005.0	1,014.0	1,014.0	1,010.0	988.0	980.0	967.0	965.0	951.0
	PP	CFR FE Asia	1,195.0	1,190.0	1,185.0	1,185.0	1,185.0	1,180.0	1,170.0	1,170.0	1,155.0	1,150.0
	PX	CFR China	936.3	940.3	940.3	937.3	931.7	925.2	926.7	917.7	916.7	911.0
	PTA	CFR China	735.0	735.0	735.0	735.0	732.0	730.0	730.0	720.0	715.0	715.0
	Benzene	FOB Korea	900.0	890.0	881.0	878.0	877.0	886.0	886.0	876.0	886.0	876.0
	Toluene	FOB Korea	732.0	730.0	725.0	715.0	713.0	713.0	709.0	703.0	703.5	699.0
	Xylene	FOB Korea	744.0	734.0	744.0	743.0	738.0	740.0	736.0	727.0	725.0	720.5
	SM	FOB Korea	1,364.0	1,358.0	1,330.0	1,322.0	1,324.0	1,316.0	1,299.0	1,296.0	1,304.0	1,286.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	604.0	597.0	590.5	509.5	510.0	511.0	484.5	399.5	493.5	604.0
	Change, %			*1.2*	*2.3*	*18.5*	*18.4*	*18.2*	*24.7*	*51.2*	*22.4*	*0.0*
	Ethylene	CFR SE Asia	1,330.0	1,272.5	1,212.5	1,232.5	1,225.0	1,005.0	990.0	1,040.9	1,090.9	1,330.0
	Change, %			*4.5*	*9.7*	*7.9*	*8.6*	*32.3*	*34.3*	*27.8*	*21.9*	*0.0*
	Propylene	CFR SE Asia	930.0	897.5	850.0	822.5	870.0	865.0	815.0	705.7	823.6	1,005.0
	Change, %			*3.6*	*9.4*	*13.1*	*6.9*	*7.5*	*14.1*	*31.8*	*12.9*	*(7.5)*
	Butadiene	CFR SE Asia	1,150.0	1,125.0	1,075.0	1,275.0	1,450.0	2,500.0	2,100.0	1,116.8	1,481.1	1,150.0
	Change, %			*2.2*	*7.0*	*(9.8)*	*(20.7)*	*(54.0)*	*(45.2)*	*3.0*	*(22.4)*	*0.0*
	Benzene	CFR SE Asia	897.5	890.0	905.0	790.0	822.5	875.0	822.5	646.7	838.8	897.5
	Change, %			*0.8*	*(0.8)*	*13.6*	*9.1*	*2.6*	*9.1*	*38.8*	*7.0*	*0.0*
	Toluene	CFR SE Asia	735.0	735.0	720.0	705.0	685.0	705.0	690.0	630.5	689.5	735.0
	Change, %			*0.0*	*2.1*	*4.3*	*7.3*	*4.3*	*6.5*	*16.6*	*6.6*	*0.0*
	Xylene	CFR SE Asia	730.0	712.5	695.0	650.0	635.0	685.0	675.0	627.7	668.8	730.0
	Change, %			*2.5*	*5.0*	*12.3*	*15.0*	*6.6*	*8.1*	*16.3*	*9.1*	*0.0*
Spread	**Ethylene**	-Naphtha	726.0	675.5	622.0	723.0	715.0	494.0	505.5	641.4	597.4	726.0
	Change, %			*7.5*	*16.7*	*0.4*	*1.5*	*47.0*	*43.6*	*13.2*	*21.5*	*0.0*
	Propylene	-Naphtha	326.0	300.5	259.5	313.0	360.0	354.0	330.5	306.2	330.1	401.0
	Change, %			*8.5*	*25.6*	*4.2*	*(9.4)*	*(7.9)*	*(1.4)*	*6.5*	*(1.2)*	*(18.7)*
	Butadiene	-Naphtha	546.0	528.0	484.5	765.5	940.0	1,989.0	1,615.5	717.3	987.6	546.0
	Change, %			*3.4*	*12.7*	*(28.7)*	*(41.9)*	*(72.5)*	*(66.2)*	*(23.9)*	*(44.7)*	*0.0*
	Benzene	-Naphtha	293.5	293.0	314.5	280.5	312.5	364.0	338.0	247.2	345.3	293.5
	Change, %			*0.2*	*(6.7)*	*4.6*	*(6.1)*	*(19.4)*	*(13.2)*	*18.7*	*(15.0)*	*0.0*
	Toluene	-Naphtha	131.0	138.0	129.5	195.5	175.0	194.0	205.5	231.0	196.0	131.0
	Change, %			*(5.1)*	*1.2*	*(33.0)*	*(25.1)*	*(32.5)*	*(36.3)*	*(43.3)*	*(33.2)*	*0.0*
	Xylene	-Naphtha	126.0	115.5	104.5	140.5	125.0	174.0	190.5	228.2	175.3	126.0
	Change, %			*9.1*	*20.6*	*(10.3)*	*0.8*	*(27.6)*	*(33.9)*	*(44.8)*	*(28.1)*	*0.0*

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

SK Energy Daily

에너지/Commodity/정유화학. 손지우 I 3773-8827, jwshon@sk.com
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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	1,182.5	1,182.5	1,207.5	1,187.5	1,167.5	1,142.5	1,142.5	1,134.6	1,142.5	1,182.5
	Change, %			0.0	(2.1)	(0.4)	1.3	3.5	3.5	4.2	3.5	0.0
	MEG	CFR SE Asia	992.5	922.5	915.0	887.5	970.0	900.0	847.5	660.8	850.6	992.5
	Change, %			7.6	8.5	11.8	2.3	10.3	17.1	50.2	16.7	0.0
	PVC	CFR SE Asia	875.0	870.0	855.0	950.0	945.0	890.0	920.0	823.4	899.9	875.0
	Change, %			0.6	2.3	(7.9)	(7.4)	(1.7)	(4.9)	6.3	(2.8)	0.0
	PP	CFR SE Asia	1,187.5	1,157.5	1,157.5	1,167.5	1,147.5	1,042.5	1,032.5	978.4	1,099.6	1,187.5
	Change, %			2.6	2.6	1.7	3.5	13.9	15.0	21.4	8.0	0.0
	2-EH	CFR Korea	1,035.0	1,020.0	1,020.0	1,000.0	990.0	880.0	865.0	772.4	970.0	1,035.0
	Change, %			1.5	1.5	3.5	4.5	17.6	19.7	34.0	6.7	0.0
	ABS	CFR SE Asia	2,050.0	2,050.0	2,030.0	2,000.0	2,030.0	1,730.0	1,635.0	1,347.1	1,844.7	2,050.0
	Change, %			0.0	1.0	2.5	1.0	18.5	25.4	52.2	11.1	0.0
	SBR	CFR SE Asia	1,650.0	1,650.0	1,650.0	1,750.0	1,790.0	2,400.0	2,000.0	1,483.0	1,980.5	1,650.0
	Change, %			0.0	0.0	(5.7)	(7.8)	(31.3)	(17.5)	11.3	(16.7)	0.0
	SM	CFR SE Asia	1,342.5	1,290.0	1,352.5	1,240.0	1,440.0	1,242.5	1,205.0	1,064.6	1,253.8	1,342.5
	Change, %			4.1	(0.7)	8.3	(6.8)	8.0	11.4	26.1	7.1	0.0
	Caustic	FOB NEA	615.0	619.0	699.5	501.0	477.0	417.5	422.5	316.6	491.2	615.0
	Change, %			(0.6)	(12.1)	22.8	28.9	47.3	45.6	94.3	25.2	0.0
	PX	CFR SE Asia	932.5	912.5	895.0	847.5	837.5	862.5	855.0	790.4	844.4	932.5
	Change, %			2.2	4.2	10.0	11.3	8.1	9.1	18.0	10.4	0.0
	PO	CFR China	2,127.5	1,995.0	1,765.0	1,657.5	1,887.5	1,525.0	1,562.5	1,396.8	1,601.2	2,127.5
	Change, %			6.6	20.5	28.4	12.7	39.5	36.2	52.3	32.9	0.0
	Caprolactam	CFR SE Asia	2,020.0	2,060.0	2,050.0	1,920.0	1,720.0	1,940.0	1,850.0	1,344.9	1,936.4	2,020.0
	Change, %			(1.9)	(1.5)	5.2	17.4	4.1	9.2	50.2	4.3	0.0
	PTA	CFR SE Asia	737.5	717.5	725.0	672.5	667.5	657.5	642.5	613.7	667.8	737.5
	Change, %			2.8	1.7	9.7	10.5	12.2	14.8	20.2	10.4	0.0
Spread	HDPE		578.5	585.5	617.0	678.0	657.5	631.5	658.0	735.1	649.0	578.5
	Change, %			(1.2)	(6.2)	(14.7)	(12.0)	(8.4)	(12.1)	(21.3)	(10.9)	0.0
	MEG		388.5	325.5	324.5	378.0	460.0	389.0	363.0	261.3	357.1	388.5
	Change, %			19.4	19.7	2.8	(15.5)	(0.1)	7.0	48.7	8.8	0.0
	PVC		271.0	273.0	264.5	440.5	435.0	379.0	435.5	423.9	406.4	271.0
	Change, %			(0.7)	2.5	(38.5)	(37.7)	(28.5)	(37.8)	(36.1)	(33.3)	0.0
	PP		583.5	560.5	567.0	658.0	637.5	531.5	548.0	578.9	606.1	583.5
	Change, %			4.1	2.9	(11.3)	(8.5)	9.8	6.5	0.8	(3.7)	0.0
	2-EH		431.0	423.0	429.5	490.5	480.0	369.0	380.5	372.9	476.5	431.0
	Change, %			1.9	0.3	(12.1)	(10.2)	16.8	13.3	15.6	(9.5)	0.0
	ABS		1,446.0	1,453.0	1,439.5	1,490.5	1,520.0	1,219.0	1,150.5	947.6	1,351.2	1,446.0
	Change, %			(0.5)	0.5	(3.0)	(4.9)	18.6	25.7	52.6	7.0	0.0
	SBR	BD spread	500.0	525.0	575.0	475.0	340.0	(100.0)	(100.0)	366.2	499.4	500.0
	Change, %			(4.8)	(13.0)	5.3	47.1	(600.0)	(600.0)	36.5	0.1	0.0
	SM		738.5	693.0	762.0	730.5	930.0	731.5	720.5	665.1	760.3	738.5
	Change, %			6.6	(3.1)	1.1	(20.6)	1.0	2.5	11.0	(2.9)	0.0
	Caustic											
	Change, %											
	PX		328.5	315.5	304.5	338.0	327.5	351.5	370.5	390.9	351.0	328.5
	Change, %			4.1	7.9	(2.8)	0.3	(6.5)	(11.3)	(16.0)	(6.4)	0.0
	PO	propylene sprea	1,197.5	1,097.5	915.0	835.0	1,017.5	660.0	747.5	691.1	777.6	1,122.5
	Change, %			9.1	30.9	43.4	17.7	81.4	60.2	73.3	54.0	6.7
	Caprolactam	benzene spread	1,122.5	1,170.0	1,145.0	1,130.0	897.5	1,065.0	1,027.5	698.2	1,097.6	1,122.5
	Change, %			(4.1)	(2.0)	(0.7)	25.1	5.4	9.2	60.8	2.3	0.0
	PTA	px spread	84.8	78.8	98.5	79.3	81.3	53.8	44.0	60.4	76.7	84.8
	Change, %			7.6	(14.0)	6.9	4.3	57.7	92.6	40.3	10.5	0.0

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	01/12	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	75.4	0.3	(0.0)	6.5	5.6	13.8	29.4	5.9	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	97.4	(0.1)	0.3	4.7	10.3	13.6	24.4	5.2	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	94.5	0.7	(0.3)	0.5	6.2	14.9	7.1	3.0	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	76.0	(0.0)	1.2	1.3	(3.0)	(1.9)	27.4	4.1	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	102.1	(1.1)	(2.2)	(0.5)	(1.0)	5.4	15.4	0.5	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	69.1	0.3	0.1	6.3	4.0	1.6	6.0	4.3	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	854	(0.6)	(0.6)	7.7	22.3	31.6	53.0	5.4	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,294	0.4	(0.3)	4.5	16.3	32.1	64.7	4.7	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	11,945	(0.1)	(1.9)	0.2	18.8	17.9	26.5	4.3	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,493	(1.4)	(2.8)	2.6	9.1	21.8	43.9	2.7	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,275	(0.9)	(1.0)	(0.7)	10.9	15.6	16.7	2.6	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	10,185	(1.8)	(3.1)	(0.6)	7.7	3.9	15.1	1.7	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	101.5	0.0	0.1	0.3	2.8	0.1	9.5	0.1	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	61.5	0.0	2.7	4.7	7.0	12.7	13.8	4.2	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	101.5	0.5	3.2	8.8	7.3	13.2	11.8	2.8	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	108.5	(0.5)	4.3	15.1	15.1	18.4	10.7	5.3	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	81.1	(1.1)	4.0	9.3	8.1	4.8	10.5	4.1	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	6.94	1.0	(0.1)	9.5	11.0	3.3	3.9	9.6	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.92	0.7	(0.3)	5.0	(7.0)	(9.3)	(30.8)	9.4	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	949	1.2	2.8	3.6	8.7	25.6	75.2	4.3	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	106.0	0.0	8.7	14.1	8.3	7.6	(11.7)	9.3	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	92.5	(0.3)	2.5	11.8	13.8	34.1	47.4	8.8	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.1	0.1	(0.9)	8.9	10.2	17.1	12.2	4.9	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	426,000	1.1	5.2	9.2	12.4	42.2	49.5	5.2	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	394,500	3.0	12.2	10.5	4.5	12.7	(0.3)	7.2	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	32,550	(0.9)	(3.4)	5.3	(2.7)	6.0	22.4	3.0	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	103,500	(4.6)	(4.6)	17.2	46.4	42.6	12.1	4.0	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	45,450	2.0	(3.2)	8.0	10.2	21.2	37.7	(3.3)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	64,900	0.3	2.7	(5.5)	16.1	24.1	18.4	2.9	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	8,330	1.6	(0.1)	6.9	20.4	46.9	5.4	9.9	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(0.0)**	**0.8**	**5.8**	**10.0**	**16.4**	**20.9**	**4.5**							
Refinery																
Valero	USD	96.8	2.3	2.9	11.3	24.2	42.2	45.4	5.3	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	60.1	1.5	5.6	15.6	20.6	38.9	19.7	9.4	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	120.0	0.4	0.0	9.6	12.7	15.9	11.1	3.9	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	119.1	1.4	2.5	7.9	12.7	23.5	47.7	4.2	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	71.4	1.7	3.0	10.7	26.3	32.8	45.0	8.2	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	44.0	2.3	2.2	14.7	23.7	42.9	(5.2)	6.4	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	52.5	2.0	2.5	11.1	44.6	93.7	71.9	2.5	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	105.0	2.5	2.8	6.0	11.3	27.6	24.5	3.8	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	34.6	1.0	4.7	20.9	34.6	40.0	11.9	11.5	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	779.5	(0.6)	3.1	13.0	39.9	60.4	50.4	7.2	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,470.0	(0.2)	(0.3)	5.3	41.7	61.6	35.7	(1.2)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	56.2	(0.5)	6.8	8.6	43.9	56.4	70.2	5.3	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	74.1	0.5	0.1	4.4	12.4	12.2	36.5	4.1	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	44.3	0.4	(3.4)	0.9	(11.7)	(9.8)	11.7	0.2	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	201,000	0.2	(0.2)	2.0	(4.3)	22.9	25.2	(1.7)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	113,500	(2.2)	0.4	(4.6)	(13.4)	11.3	31.5	(3.0)	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	64,800	1.3	4.2	8.4	(3.0)	(9.1)	20.9	4.2	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.8**	**2.2**	**8.6**	**18.6**	**33.1**	**32.6**	**4.1**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

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Global peers

	Currency	01/12	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	18E	19E	18E	19E	18E	19E
E&P/Shale																
Exxon Mobil	USD	88	0.7	0.9	5.8	6.2	8.1	1.4	4.6	370,832	20.2	19.4	2.0	2.0	9.1	9.0
BP	GBP	535	0.3	1.0	4.7	8.8	18.7	3.8	2.3	145,437	17.8	15.8	1.5	1.5	6.0	5.6
Shell	EUR	2,574	0.1	1.7	6.1	11.9	23.9	12.7	3.8	295,455	15.6	14.2	1.5	1.4	6.8	6.4
Chevron	USD	134	0.8	4.5	11.6	12.1	28.6	15.0	6.7	253,756	23.5	21.7	1.7	1.8	7.7	7.2
Total	EUR	49	1.0	1.6	1.7	6.4	12.8	(0.2)	5.6	149,442	13.4	12.6	1.3	1.2	5.8	5.4
Sinopec	CNY	7	1.0	1.3	18.4	22.9	17.6	22.6	16.6	126,957	14.4	13.4	1.1	1.1	4.8	4.7
Petrochina	CNY	9	(0.1)	1.9	9.1	9.8	12.3	5.2	8.2	235,234	32.8	30.3	1.3	1.3	6.3	6.1
CNOOC	CNY	12	0.9	(0.9)	12.9	3.8	7.4	(10.2)	11.6	71,343	11.6	10.9	1.1	1.0	4.2	4.1
Gazprom	RUB	144	(0.4)	5.0	6.3	14.3	15.3	(8.4)	10.3	60,236	4.2	4.4	0.3	0.2	3.7	3.7
Rosneft	RUB	324	(0.2)	4.0	7.0	1.6	1.2	(17.0)	11.3	60,744	8.0	7.0	0.8	0.7	4.8	4.4
Anadarko	USD	59	0.8	7.2	21.5	23.6	34.6	(17.5)	10.0	32,271	#N/A N/A	106.7	2.2	2.1	7.2	6.1
Petrobras	BRL	17	0.3	2.8	11.7	7.6	33.7	8.8	7.5	72,760	10.2	7.5	0.7	0.6	5.0	4.7
Lukoil	USD	3,908	6.0	9.5	12.5	28.8	34.1	18.4	17.2	58,723	7.1	6.8	0.8	0.7	N/A	N/A
Kinder	USD	20	1.7	3.0	10.0	3.4	0.6	(12.0)	8.0	47,497	24.7	23.2	1.2	1.3	11.2	10.8
Statoil	NOK	186	0.2	2.0	6.8	16.4	32.3	15.6	6.1	77,654	18.1	16.6	1.9	1.8	3.7	3.5
BHP	AUD	32	2.2	3.1	14.0	20.3	26.7	19.6	6.6	127,514	19.7	19.2	2.1	2.1	7.3	7.2
PTT E&P	THB	111	2.3	3.7	17.8	20.0	32.5	14.7	11.0	13,795	14.0	13.6	1.1	1.0	3.8	3.8
Petronas gas	MYR	19	2.7	3.5	18.3	2.8	1.1	(9.1)	8.7	9,452	19.8	19.2	2.9	2.8	11.1	10.8
Chesapeake	USD	4	2.1	7.3	12.3	11.2	(8.4)	(38.2)	8.1	3,889	5.4	4.8	#N/A N/A	11.0	6.5	6.1
Noble Energy	USD	32	0.3	2.3	20.0	18.1	15.8	(13.3)	10.6	15,683	110.0	43.6	1.6	1.6	7.8	6.4
Average		**0**	**1.1**	**3.3**	**11.4**	**12.5**	**17.4**	**0.6**	**8.7**							
PV																
WACKER	EUR	172.1	2.8	0.8	14.5	43.9	80.3	59.2	6.1	10,892	26.2	22.5	2.6	2.5	8.6	8.1
GCL-Poly	HKD	1.5	1.4	5.7	18.4	25.4	76.2	55.8	5.7	3,517	9.2	8.1	0.9	0.8	6.3	5.8
SunPower	USD	9.1	(3.9)	5.2	4.8	30.9	(10.4)	24.5	7.9	1,270	#N/A N/A	29.3	1.7	2.1	13.1	10.4
Canadian Solar	USD	16.6	(4.3)	(2.7)	(7.1)	3.1	1.1	33.5	(1.8)	960	9.0	10.5	0.9	0.8	9.4	9.2
JA Solar	USD	7.4	(0.9)	(0.5)	0.8	1.9	20.8	51.9	(1.1)	351	13.7	12.3	1.7	1.6	3.9	3.7
Yingli	USD	2.0	(1.5)	(4.5)	8.0	(12.6)	(13.3)	(26.8)	19.5	37	#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	73.4	(3.7)	6.1	6.5	55.8	75.7	110.5	8.7	7,666	48.7	22.1	1.3	1.3	14.7	8.5
한화큐셀	USD	7.3	(1.3)	(2.1)	3.4	(9.3)	3.5	(11.4)	4.6	611	33.4	23.7	#N/A N/A	#N/A N/A	8.1	7.3
OCI	KRW	178,500	2.0	10.5	40.6	78.5	112.5	123.1	31.3	4,005	19.7	19.1	1.3	1.2	9.9	8.2
웅진에너지	KRW	8,020	(3.3)	(8.6)	(13.8)	8.8	9.3	63.7	(2.4)	192	N/A	1.3	1.2	9.9	8.2	8.5
신성솔라에너지	KRW	2,020	(0.5)	0.0	(1.5)	16.1	(5.8)	(6.3)	5.5	329	N/A	1.2	9.9	8.2	8.5	8.1
Average			**(1.2)**	**0.9**	**6.8**	**22.1**	**31.8**	**43.4**	**7.6**							
Gas Company																
Towngas China	HKD	6.1	2.9	(1.6)	(0.5)	9.5	15.3	41.8	(2.7)	2,163	12.5	11.3	1.1	1.0	11.6	10.3
Kulun	HKD	8.0	(1.8)	1.0	12.8	9.3	12.7	32.8	(1.6)	8,266	11.0	9.7	1.3	1.2	5.8	5.5
Beijing Enterprise	HKD	45.7	1.4	(1.9)	4.5	0.4	9.9	20.6	(1.6)	7,365	8.0	7.3	0.8	0.8	14.0	13.2
ENN Energy	HKD	54.1	2.3	2.0	(2.0)	(7.6)	0.0	51.0	(3.0)	7,482	12.2	10.6	2.3	2.0	7.7	6.7
China Resources Gas	HKD	25.2	3.5	(6.8)	(12.3)	(9.0)	(17.4)	0.8	(11.1)	7,164	12.8	11.4	2.4	2.1	7.8	7.1
China Gas Holdings	HKD	21.8	2.6	(1.6)	(3.8)	(9.6)	15.0	93.9	0.7	13,814	14.9	12.5	3.6	3.0	11.9	10.3
Shenzen Gas	HKD	15.8	0.0	0.8	15.2	1.3	16.4	40.4	6.0	4,094	11.4	10.3	1.4	1.2	8.3	7.8
Shann Xi	CNY	8.5	(2.4)	(0.1)	3.7	(0.6)	(1.7)	(11.1)	0.1	1,454	16.0	18.8	1.6	1.5	#N/A N/A	#N/A N/A
Suntien	HKD	2.1	0.5	0.5	10.6	(0.5)	26.8	79.3	0.5	988	6.4	5.5	0.7	0.6	8.4	7.4
China Oil & Gas	HKD	0.8	2.5	9.5	39.7	42.1	42.1	35.0	(4.7)	603	11.3	9.9	1.2	1.1	6.5	6.0
Average			**1.1**	**0.2**	**6.8**	**3.5**	**11.9**	**38.4**	**(1.7)**							
EV																
LG화학	KRW	426,000	1.1	5.2	9.2	12.4	42.2	49.5	5.2	28,289	14.3	13.4	1.8	1.6	6.8	6.4
삼성SDI	KRW	215,500	0.5	(2.3)	0.9	0.2	24.9	85.0	5.4	13,940	13.5	11.6	1.2	1.1	15.0	11.9
Panasonic	JPY	1708.0	(1.2)	(0.6)	5.6	5.4	12.2	40.7	3.5	37,665	16.7	14.5	2.2	2.0	6.3	5.8
GS Yuasa	JPY	576.0	(5.6)	(0.5)	2.1	(2.5)	16.1	21.3	2.7	2,141	15.8	14.1	1.3	1.2	6.9	6.4
NEC	JPY	3120.0	(1.0)	0.3	2.0	2.0	5.1	(3.4)	2.6	7,306	18.5	15.5	0.9	0.9	6.2	6.0
BYD Auto	CNY	67.1	2.6	4.2	8.1	(1.8)	34.6	37.0	3.1	27,119	28.1	22.1	3.0	2.7	13.1	11.3
Tesla Motors	USD	336.2	(0.5)	6.2	(1.4)	(5.5)	2.0	46.4	8.0	56,508	#N/A N/A	79.4	11.8	10.0	34.7	17.0
Kandi Technologies	USD	7.2	(1.4)	(8.3)	3.6	(12.2)	73.5	44.0	5.9	346	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(0.7)**	**0.5**	**3.8**	**(0.2)**	**26.3**	**40.1**	**4.6**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임