SK Energy Daily

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SK 증권

1. News Summary (3 page)

2018년 1월 2일

News		Conclusion
WTI comment	강세로 한해 마감…WTI 60달러 돌파	
Headline	"라니냐로 겨울 가뭄 온다"… 콩·옥수수 등 곡물값 폭등 우려	라니냐로 진입하며 주요 원자재 운송에 차질 빚으며 가격 강세 가능함
News 1.	신재생·LNG 늘리는 8차 전력계획 확정 공고	친환경 기조 속 원전 유지한 채 석탄발전을 LNG발전으로 대체해 갈 것
News 2.	삼성重, 2100억규모 LNG선 수주 따냈다	스팟 용선료 상승으로 일시적인 발주여건 개선이 나타난 것으로 판단
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	60.4	1.0	3.3	4.2	16.9	12.5
Dubai	$/bbl	64.3	0.8	3.1	5.0	16.6	19.5
Gasoline	$/bbl	76.4	0.0	1.4	(0.2)	8.3	9.4
Diesel	$/bbl	78.7	0.8	3.0	5.4	11.8	20.1
Complex margin	$/bbl	7.5	(0.1)	(0.4)	(0.8)	(1.9)	(0.8)
1M lagging	$/bbl	10.3	0.5	0.6	(3.1)	(4.1)	(7.1)
Petrochemical			%	%	%	%	%
Naphtha	$/t	614	0.3	1.7	3.5	16.4	23.6
Butadiene	$/t	1,100	0.0	0.0	8.9	(21.4)	(50.9)
HDPE	$/t	1,280	0.0	0.0	(1.5)	9.9	9.9
MEG	$/t	951	1.0	3.4	4.3	7.7	4.7
PX	$/t	911	0.3	2.2	3.2	9.8	7.4
SM	$/t	1,287	(0.5)	3.8	(1.2)	4.0	10.0
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.95	1.3	11.1	(3.6)	(10.5)	(20.8)
Natural rubber	$/t	1,450	0.0	3.6	2.8	2.1	(25.3)
Cotton	C/lbs	78.6	(0.2)	1.0	4.2	13.8	11.3

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	12/25	$/t	1,273	2.2	6.5	1.4	28.5
Propylene	12/25	$/t	898	0.8	7.5	7.5	10.1
Benzene	12/25	$/t	890	(3.3)	1.4	10.6	8.2
Toluene	12/25	$/t	735	0.0	2.8	5.0	6.5
Xylene	12/25	$/t	713	0.4	2.5	8.4	5.6
PP	12/25	$/t	1,158	0.0	0.9	(0.9)	12.1
PVC	12/25	$/t	870	0.6	2.4	(8.2)	(5.4)
ABS	12/25	$/t	2,050	(1.0)	4.6	(0.5)	25.4
SBR	12/25	$/t	1,650	0.0	2.5	(9.8)	(17.5)
SM	12/25	$/t	1,290	(3.2)	(1.1)	(4.4)	7.1
BPA	12/25	$/t	1,995	6.5	18.9	27.9	26.1
Caustic	12/25	$/t	619	(0.3)	(11.6)	27.9	46.5
2-EH	12/25	$/t	1,020	(1.4)	0.0	3.0	17.9
Caprolactam	12/25	$/t	2,060	0.0	2.0	12.6	11.4
Solar				%	%	%	%
Polysilicon	12/27	$/kg	17.6	0.7	4.5	5.4	15.4
Module	12/27	$/W	0.31	0.0	(0.3)	(2.2)	(13.1)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	83.6	(0.5)	(0.4)	1.7	2.0	(7.4)
Shell	EUR	2,480	0.8	1.1	4.8	10.3	10.4
Petrochina	CNY	8.09	0.4	0.0	(1.8)	1.3	1.8
Gazprom	RUB	130.5	(0.0)	(1.4)	(2.3)	6.8	(14.5)
Petrobras	BRL	16.1	0.0	2.2	5.0	5.2	8.3
Refinery							
Phillips66	USD	101.2	(0.8)	0.3	6.6	10.4	16.7
Valero	USD	91.9	(0.4)	0.9	10.3	19.5	33.9
JX	JPY	727.0	(0.4)	1.1	17.2	25.6	46.8
Neste Oil	EUR	53.4	(1.3)	(0.4)	5.4	44.4	45.6

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	91.7	(1.2)	(1.9)	(2.1)	2.2	4.6
DowDuPont	USD	71.2	(0.4)	(1.2)	(0.8)	2.9	24.0
SABIC	SAR	101.9	0.0	0.1	1.3	(0.9)	11.4
Formosa Pla.	TWD	98.7	1.9	3.5	5.4	7.5	12.9
Shin-Etsu	JPY	11,450	(1.3)	(1.0)	(4.1)	13.8	25.3
Renewable							
Wacker	EUR	162.2	0.3	(0.0)	18.1	33.7	64.9
First Solar	USD	67.52	(1.2)	(1.9)	12.5	47.2	107.3
GCL-Poly	HKD	1.40	0.0	1.4	7.7	30.8	48.9
Tesla Motors	USD	311.4	(1.3)	(4.3)	1.2	(8.7)	45.0

4. Coverage Summary

	12/28	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,467	1.3	1.5	(1.9)	3.0	3.6	20.8				* 추정치는 12M fwd 기준임	
KOSPI화학	6,072	1.6	1.7	(0.4)	6.5	11.9	18.2				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	405,000	2.7	3.6	(3.7)	3.3	44.4	52.0	매수	400,000	(1.2)	12.83	2.12
롯데케미칼	368,000	1.5	1.0	3.7	(2.6)	11.7	3.8	매수	410,000	11.4	5.79	1.27
한화케미칼	31,600	4.1	4.8	6.2	(2.6)	3.6	23.9	매수	39,000	23.4	5.33	0.88
금호석유화학	99,500	1.7	2.4	15.0	38.0	35.2	21.9	매수	100,000	0.5	16.86	1.85
KCC	381,000	3.8	1.6	(0.5)	1.7	(10.1)	2.6	매수	450,000	18.1	21.15	0.55
OCI	136,000	5.4	4.6	10.6	32.7	49.1	74.6	매수	120,000	(11.8)	17.27	1.04
SKC	47,000	7.2	9.0	10.8	13.9	39.3	39.7	매수	45,000	(4.3)	12.99	1.28
SK이노베이션	204,500	1.2	1.0	(1.0)	2.8	29.4	34.5	매수	210,000	2.7	8.25	1.09
S-Oil	117,000	(0.8)	(5.6)	(2.1)	(8.2)	24.3	36.8	매수	140,000	19.7	12.66	2.21
GS	62,200	0.6	0.6	2.8	(5.2)	(8.9)	14.3	매수	80,000	28.6	5.90	0.92
SK가스	94,200	(0.1)	1.4	(3.1)	(0.1)	(23.7)	(24.6)	매수	130,000	38.0	7.12	0.70
포스코대우	18,150	1.7	1.4	(1.1)	(6.0)	(18.2)	(35.4)	매수	25,000	37.7	10.17	0.79
LG상사	27,150	0.4	0.9	0.2	(0.5)	(10.5)	(8.7)	매수	38,000	40.0	9.88	0.88
한국전력	38,150	(0.7)	(1.4)	(0.4)	(2.2)	(6.5)	(18.8)	매수	55,000	44.2	7.32	0.31
한국가스공사	42,550	2.0	(0.9)	(3.3)	1.1	(19.0)	(13.3)	매수	60,000	41.0	8.69	0.55

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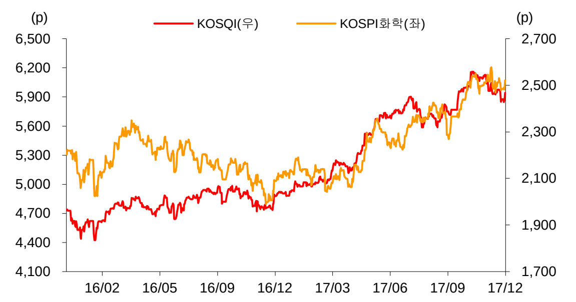
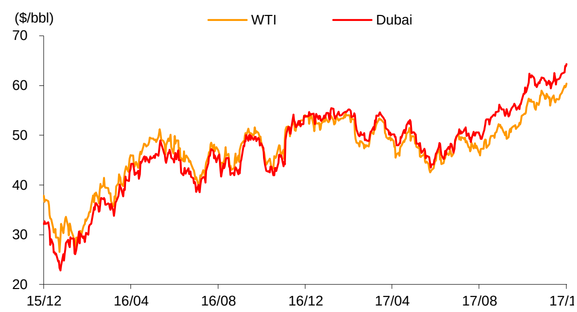
Key Chart

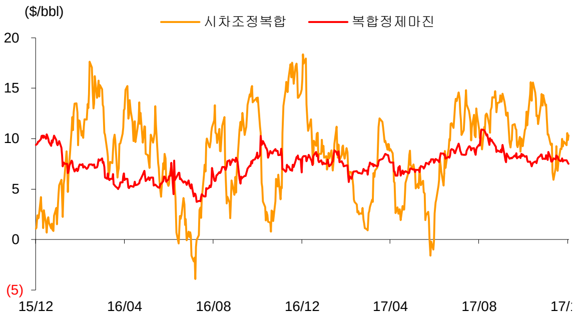
KOSPI/KOSPI화학



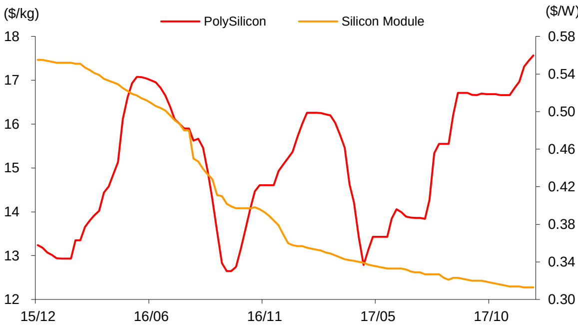
WTI/Dubai



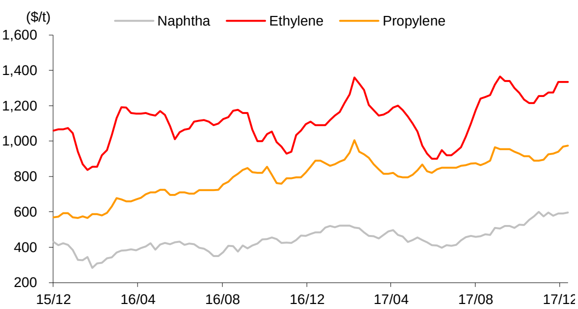
Complex & 1M lagging margin



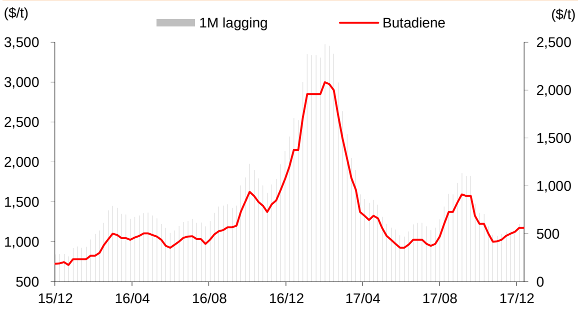
Polysilicon & Module prices



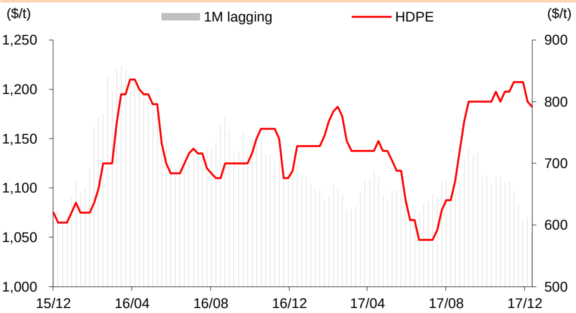
Naphtha/Ethylene/Propylene prices



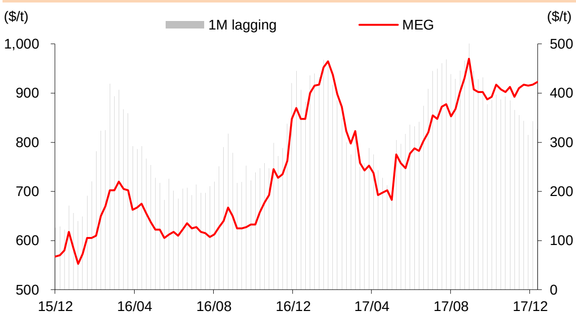
Butadiene price & 1M lagging naphtha spread



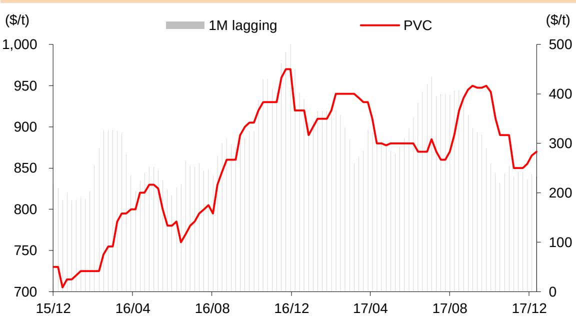
HDPE price & 1M lagging naphtha spread



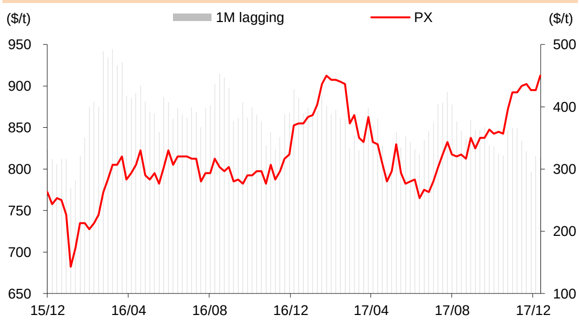
MEG price & 1M lagging naphtha spread



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: 한국경제)
제목	"라니냐로 겨울 가뭄 온다"… 콩·옥수수 등 곡물값 폭등 우려
결론	라니냐로 진입하며 주요 원자재 운송에 차질 빚으며 가격 강세 가능함
세부	
	1) WSJ, "2012년 수준의 라니냐가 2018년 다시 나타날 가능성이 있다"
	2) 네덜란드 라보은행, "올겨울 라니냐가 나타날 확률은 75%에 달함"
	3) 세계기상기구도 남은 겨울 동안 70~80% 확률로 라니냐 지속 전망함
	4) 2012년 라니냐로 콩은 18$/부셸, 옥수수는 8$/부셸까지 상승한 바 있음
	5) 라니냐로 진입하며 주요 원자재 운송에 차질 빚으며 가격 강세 가능함

WTI Comment	(출처: 조선비즈)
제목	강세로 한해 마감…WTI 60달러 돌파
상승 요인	리비아 송유관 폐쇄 EIA, "美 지난주 원유 재고가 WoW 460만b 감소"
하락 요인	

Issue 1	(출처: 머니투데이)
제목	신재생·LNG 늘리는 8차 전력계획 확정 공고
결론	친환경 기조 속 원전 유지한 채 석탄발전을 LNG발전으로 대체해 갈 것
세부	
	1) 원전은 신규 6기의 건설을 백지화하고, 노후 10기의 수명연장은 중단
	2) 월성 1호기는 조기 가동 중단, 노후 석탄발전소 10기는 2022년까지 폐지
	3) 태양광과 풍력 등의 신규 설비를 47.2gW 확충, 2030년 총 58.5GW 목표
	4) 석탄발전은 환경비용을 반영하고 4월부터 유연탄 개별소비세 상향
	5) 친환경 기조 속 원전 유지한 채 석탄발전을 LNG발전으로 대체해 갈 것

Issue 2	(출처: 매일경제)
제목	삼성重, 2100억규모 LNG선 수주 따냈다
결론	스팟 용선료 상승으로 일시적인 발주여건 개선이 나타난 것으로 판단
세부	
	1) 28일 삼성중공업은 해외LNG선사로부터 18만cum급 LNG선 1척 수주함
	2) 삼성중공업은 올해 초 세운 65억$의 연간 수주목표 초과 달성함
	3) 관계자, "올해 LNG선 3척, FSRU 2척, FLNG 1척 등 33억$ 수주"
	4) 관계자, "2030년까지 연평균 30척 규모의 LNG선 발주가 기대된다"
	5) 스팟 용선료 상승으로 일시적인 발주여건 개선이 나타난 것으로 판단

Issue 3	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

Issue 4	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

Issue 5	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

Issue 6	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
F/X	**USD/EUR**	0.833	0.837	0.843	0.844	0.846	0.874	0.953	0.951	0.904	0.887	0.833
	Change, %		(0.5)	(1.2)	(1.3)	(1.6)	(4.7)	(12.6)	(12.4)	(7.8)	(6.0)	0.0
	USD/JPY	112.7	112.9	113.3	111.9	112.5	112.2	116.5	117.0	108.8	112.1	112.7
	Change, %		(0.2)	(0.5)	0.7	0.2	0.5	(3.3)	(3.7)	3.6	0.5	0.0
	USD/KRW	1,067.4	1,070.6	1,079.7	1,076.7	1,145.4	1,141.3	1,207.8	1,205.8	1,160.5	1,130.9	1,066.7
	Change, %		(0.3)	(1.1)	(0.9)	(6.8)	(6.5)	(11.6)	(11.5)	(8.0)	(5.6)	0.1
Agriculture	**Corn**	350.8	352.0	352.0	339.0	355.3	359.8	349.8	352.0	358.5	359.4	350.8
	Change, %		(0.4)	(0.4)	3.5	(1.3)	(2.5)	0.3	(0.4)	(2.2)	(2.4)	0.0
	Soybean	951.8	945.8	949.5	992.5	968.3	915.5	1,003.3	996.5	987.5	975.9	951.8
	Change, %		0.6	0.2	(4.1)	(1.7)	4.0	(5.1)	(4.5)	(3.6)	(2.5)	0.0
	Wheat	427.0	427.8	424.8	416.5	448.3	480.3	404.8	408.0	436.4	436.0	427.0
	Change, %		(0.2)	0.5	2.5	(4.7)	(11.1)	5.5	4.7	(2.2)	(2.1)	0.0
	Rice	11.7	11.7	12.0	12.4	12.0	11.6	9.2	9.4	10.3	11.1	11.7
	Change, %		0.2	(2.3)	(5.6)	(2.6)	0.8	26.4	24.9	12.9	5.6	0.0
	Oats	241.0	243.0	242.5	246.5	251.3	265.5	226.5	228.5	196.3	252.3	241.0
	Change, %		(0.8)	(0.6)	(2.2)	(4.1)	(9.2)	6.4	5.5	22.8	(4.5)	0.0
MYR/mt	**Palm Oil**	2,444.0	2,459.0	2,407.0	2,468.0	2,719.0	2,617.0	3,196.0	3,218.0	2,653.8	2,787.3	2,444.0
	Change, %		(0.6)	1.5	(1.0)	(10.1)	(6.6)	(23.5)	(24.1)	(7.9)	(12.3)	0.0
	Cocoa	1,892.0	1,911.0	1,809.0	2,096.0	2,043.0	1,822.0	2,165.0	2,126.0	2,854.0	2,005.2	1,892.0
	Change, %		(1.0)	4.6	(9.7)	(7.4)	3.8	(12.6)	(11.0)	(33.7)	(5.6)	0.0
	Cotton	78.6	78.8	77.9	75.5	69.1	74.0	70.5	70.7	65.6	73.5	78.6
	Change, %		(0.2)	1.0	4.1	13.8	6.3	11.5	11.3	19.9	6.9	0.0
	Sugar	15.2	15.0	14.6	15.1	13.5	13.3	19.5	19.5	18.2	15.8	15.2
	Change, %		1.1	3.8	0.6	12.0	14.0	(22.2)	(22.3)	(16.5)	(4.2)	0.0
	Coffee	126.2	124.8	120.4	129.6	128.1	124.8	135.5	137.1	136.1	133.0	126.2
	Change, %		1.1	4.8	(2.6)	(1.4)	1.2	(6.8)	(7.9)	(7.2)	(5.1)	0.0
Energy	**WTI**	60.4	59.8	58.5	57.3	51.7	44.9	53.8	53.7	43.4	51.0	60.4
	Change, %		1.0	3.3	5.4	16.9	34.5	12.4	12.5	39.3	18.5	0.0
	Brent	66.9	66.7	65.3	63.1	57.5	47.4	56.1	56.8	45.1	54.9	66.9
	Change, %		0.2	2.5	6.0	16.2	41.0	19.1	17.7	48.3	21.9	0.0
	Natural Gas	3.0	2.9	2.7	3.2	3.0	3.0	3.8	3.7	2.6	3.0	3.0
	Change, %		1.3	10.7	(7.1)	(1.8)	(2.9)	(22.3)	(20.7)	15.7	(2.3)	0.0
	Ethanol	1.3	1.3	1.3	1.4	1.5	1.5	1.6	1.6	1.5	1.5	1.3
	Change, %		1.0	1.1	(2.4)	(12.4)	(10.5)	(19.1)	(17.8)	(12.9)	(11.8)	0.0
	RBOB Gasoline	179.9	179.3	176.2	173.1	160.7	148.6	168.2	166.5	140.0	162.9	179.9
	Change, %		0.3	2.1	3.9	12.0	21.1	7.0	8.1	28.5	10.5	0.0
	Coal	100.8	101.2	100.2	96.8	97.3	81.0	88.3	88.4	65.5	88.2	100.8
	Change, %		(0.4)	0.6	4.1	3.7	24.5	14.2	14.0	54.0	14.3	0.0
Metal	**Gold**	1,303.1	1,294.9	1,275.3	1,283.9	1,280.2	1,245.5	1,158.2	1,152.3	1,248.5	1,258.6	1,302.5
	Change, %		0.6	2.2	1.5	1.8	4.6	12.5	13.1	4.4	3.5	0.0
	Silver	16.9	16.9	16.4	16.5	16.7	16.6	16.2	15.9	17.1	17.1	16.9
	Change, %		0.5	3.3	2.4	1.7	1.9	4.8	6.4	(1.0)	(0.8)	(0.1)
	Copper	7,247.0	7,289.0	7,125.0	6,760.0	6,481.0	5,940.0	5,487.0	5,535.5	4,872.0	6,199.4	7,247.0
	Change, %		(0.6)	1.7	7.2	11.8	22.0	32.1	30.9	48.7	16.9	0.0
	Nickel	782.9	787.8	770.0	734.9	678.7	598.1	685.7	682.0	646.4	680.2	809.1
	Change, %		(0.6)	1.7	6.5	15.4	30.9	14.2	14.8	21.1	15.1	(3.2)
	Zinc	3,319.0	3,305.0	3,265.5	3,157.0	3,162.0	2,755.5	2,522.0	2,576.0	2,097.5	2,888.5	3,319.0
	Change, %		0.4	1.6	5.1	5.0	20.5	31.6	28.8	58.2	14.9	0.0
	Lead	2,482.8	2,521.5	2,481.3	2,434.3	2,494.0	2,307.3	1,956.0	2,003.5	1,868.3	2,315.7	2,482.8
	Change, %		(1.5)	0.1	2.0	(0.5)	7.6	26.9	23.9	32.9	7.2	0.0
	Aluminum	15,020.0	14,800.0	14,540.0	14,560.0	16,235.0	13,900.0	12,610.0	12,765.0	12,373.5	14,556.6	15,020.0
	Change, %		1.5	3.3	3.2	(7.5)	8.1	19.1	17.7	21.4	3.2	0.0
	Cobalt	75,205.0	75,205.0	75,205.0	66,790.0	59,094.0	59,796.0	32,483.0	32,734.0	25,480.1	55,906.9	75,205.0
	Change, %		0.0	0.0	12.6	27.3	25.8	131.5	129.7	195.2	34.5	0.0
	HR Coil	662.0	663.0	636.0	629.0	599.0	629.0	633.0	633.0	519.3	620.1	662.0
	Change, %		(0.2)	4.1	5.2	10.5	5.2	4.6	4.6	27.5	6.8	0.0
	Scrap	367.0	367.0	367.0	349.0	340.0	350.0	302.0	302.0	275.7	344.7	367.0
	Change, %		0.0	0.0	5.2	7.9	4.9	21.5	21.5	33.1	6.5	0.0

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		12/28	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	60.4	59.8	58.5	58.0	51.7	46.0	53.7	53.7	48.8	43.4	50.9
	Change, %		*1.0*	*3.3*	*4.2*	*16.9*	*31.2*	*12.5*	*12.5*	*23.9*	*39.3*	*18.8*
	Dubai	64.3	63.9	62.4	61.3	55.2	46.5	53.8	53.8	50.8	41.3	53.1
	Change, %		*0.8*	*3.1*	*5.0*	*16.6*	*38.4*	*19.5*	*19.5*	*26.7*	*55.7*	*21.2*
Crude Oil Product	**Gasoline(휘발유)**	76.4	76.4	75.4	76.6	70.6	59.6	69.8	69.8	69.5	56.3	68.0
	Change, %		*0.0*	*1.4*	*(0.2)*	*8.3*	*28.3*	*9.4*	*9.4*	*9.9*	*35.9*	*12.4*
	Kerosene(등유)	79.4	78.5	76.3	75.0	70.3	57.9	66.4	66.4	64.7	52.9	65.2
	Change, %		*1.2*	*4.1*	*5.9*	*13.0*	*37.1*	*19.5*	*19.5*	*22.6*	*50.1*	*21.8*
	Diesel(경유)	78.7	78.0	76.4	74.7	70.4	58.9	65.5	65.5	64.8	52.1	65.6
	Change, %		*0.8*	*3.0*	*5.4*	*11.8*	*33.6*	*20.1*	*20.1*	*21.5*	*51.0*	*20.0*
	Bunker-C	58.1	57.9	57.4	56.4	52.1	46.0	52.1	52.1	45.3	35.5	49.6
	Change, %		*0.3*	*1.3*	*3.0*	*11.6*	*26.3*	*11.6*	*11.6*	*28.3*	*63.5*	*17.1*
	Naphtha	67.6	67.2	65.6	65.5	57.0	44.4	53.5	53.5	52.6	42.6	53.7
	Change, %		*0.6*	*3.1*	*3.3*	*18.6*	*52.4*	*26.5*	*26.5*	*28.5*	*58.7*	*25.9*
Dubai Spread	**Gasoline(휘발유)**	12.1	12.6	13.0	15.3	15.4	13.1	16.0	16.0	18.7	14.9	14.9
	Change		*(0.4)*	*(0.9)*	*(3.2)*	*(3.3)*	*(1.0)*	*(3.9)*	*(3.9)*	*(6.6)*	*(2.8)*	*(2.8)*
	Kerosene(등유)	15.1	14.6	13.9	13.7	15.1	11.4	12.6	12.6	14.0	11.6	12.1
	Change		*0.5*	*1.2*	*1.4*	*0.0*	*3.6*	*2.5*	*2.5*	*1.1*	*3.5*	*2.9*
	Diesel(경유)	14.4	14.2	14.0	13.4	15.2	12.4	11.7	11.7	14.0	10.8	12.5
	Change		*0.2*	*0.4*	*1.0*	*(0.8)*	*1.9*	*2.7*	*2.7*	*0.4*	*3.5*	*1.8*
	Bunker-C	(6.3)	(6.0)	(5.0)	(4.9)	(3.1)	(0.5)	(1.8)	(1.8)	(5.5)	(5.8)	(3.5)
	Change		*(0.3)*	*(1.2)*	*(1.4)*	*(3.1)*	*(5.8)*	*(4.5)*	*(4.5)*	*(0.7)*	*(0.5)*	*(2.8)*
	Naphtha	3.3	3.4	3.2	4.2	1.8	(2.1)	(0.4)	(0.4)	1.8	1.3	0.6
	Change		*(0.1)*	*0.1*	*(1.0)*	*1.5*	*5.4*	*3.6*	*3.6*	*1.5*	*2.0*	*2.7*
Refining Margin	**Simple(단순)**	2.1	2.2	2.6	2.9	4.3	4.2	3.8	3.8	3.3	1.9	3.1
	Change		*(0.1)*	*(0.5)*	*(0.8)*	*(2.2)*	*(2.1)*	*(1.7)*	*(1.7)*	*(1.2)*	*0.2*	*(1.0)*
	Complex(복합)	7.5	7.6	7.9	8.4	9.4	8.0	8.3	8.3	9.3	7.0	8.0
	Change		*(0.1)*	*(0.4)*	*(0.8)*	*(1.9)*	*(0.5)*	*(0.8)*	*(0.8)*	*(1.8)*	*0.5*	*(0.5)*
	Complex(lagging)	10.3	9.8	9.7	13.4	14.5	4.0	17.4	18.0	7.3	8.5	8.8
	Change		*0.5*	*0.6*	*(3.1)*	*(4.1)*	*6.4*	*(7.1)*	*(7.6)*	*3.1*	*1.8*	*1.5*

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			12/29	12/28	12/27	12/26	12/22	12/21	12/20	12/19	12/18	12/15
Spot Price	**Naphtha**	CFR Japan	613.9	612.3	607.8	599.8	603.8	598.3	592.0	588.5	587.8	590.0
	Ethylene	CFR SE Asia	1,270.0	1,270.0	1,250.0	1,250.0	1,250.0	1,250.0	1,250.0	1,200.0	1,200.0	1,200.0
	Propylene	FOB Korea	946.0	937.0	936.0	930.0	928.0	928.0	925.0	925.0	915.0	915.0
	Butadiene	FOB Korea	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0
	HDPE	CFR FE Asia	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,290.0	1,290.0
	LDPE	CFR FE Asia	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,200.0	1,200.0
	LLDPE	CFR FE Asia	1,155.0	1,155.0	1,155.0	1,155.0	1,155.0	1,155.0	1,155.0	1,155.0	1,160.0	1,160.0
	MEG	CFR China	951.0	942.0	931.0	923.0	920.0	920.0	927.0	918.0	914.0	914.0
	PP	CFR FE Asia	1,150.0	1,150.0	1,150.0	1,150.0	1,140.0	1,140.0	1,140.0	1,130.0	1,130.0	1,130.0
	PX	CFR China	911.0	908.0	904.0	900.3	891.0	890.0	888.0	885.0	881.0	881.0
	PTA	CFR China	715.0	715.0	715.0	715.0	710.0	715.0	720.0	720.0	720.0	720.0
	Benzene	FOB Korea	876.0	877.5	864.5	855.5	849.0	868.0	874.5	882.5	904.0	904.0
	Toluene	FOB Korea	699.0	697.0	697.0	695.0	693.0	698.0	692.0	705.5	703.0	703.0
	Xylene	FOB Korea	720.5	719.0	716.5	715.0	714.0	713.0	711.0	710.0	706.0	706.0
	SM	FOB Korea	1,286.5	1,292.5	1,256.5	1,242.5	1,239.5	1,259.5	1,266.5	1,266.5	1,293.0	1,293.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	**Naphtha**	CFR Japan	597.0	590.5	595.5	520.5	474.0	484.5	484.5	493.0	399.5	492.5
	Change, %			*1.1*	*0.3*	*14.7*	*25.9*	*23.2*	*23.2*	*21.1*	*49.4*	*21.2*
	Ethylene	CFR SE Asia	1,272.5	1,245.0	1,195.0	1,255.0	1,185.0	990.0	990.0	1,103.7	1,040.9	1,088.4
	Change, %			*2.2*	*6.5*	*1.4*	*7.4*	*28.5*	*28.5*	*15.3*	*22.2*	*16.9*
	Propylene	CFR SE Asia	897.5	890.0	835.0	835.0	790.0	815.0	815.0	770.0	705.7	884.3
	Change, %			*0.8*	*7.5*	*7.5*	*13.6*	*10.1*	*10.1*	*16.6*	*27.2*	*1.5*
	Butadiene	CFR SE Asia	1,125.0	1,125.0	1,025.0	1,525.0	1,325.0	2,100.0	2,100.0	877.5	1,116.8	1,484.8
	Change, %			*0.0*	*9.8*	*(26.2)*	*(15.1)*	*(46.4)*	*(46.4)*	*28.2*	*0.7*	*(24.2)*
	Benzene	CFR SE Asia	890.0	920.0	877.5	805.0	795.0	822.5	822.5	690.0	646.7	838.3
	Change, %			*(3.3)*	*1.4*	*10.6*	*11.9*	*8.2*	*8.2*	*29.0*	*37.6*	*6.2*
	Toluene	CFR SE Asia	735.0	735.0	715.0	700.0	655.0	690.0	690.0	700.8	630.5	689.5
	Change, %			*0.0*	*2.8*	*5.0*	*12.2*	*6.5*	*6.5*	*4.9*	*16.6*	*6.6*
	Xylene	CFR SE Asia	712.5	710.0	695.0	657.5	627.5	675.0	675.0	699.3	627.7	667.8
	Change, %			*0.4*	*2.5*	*8.4*	*13.5*	*5.6*	*5.6*	*1.9*	*13.5*	*6.7*
Spread	**Ethylene**	-Naphtha	675.5	654.5	599.5	734.5	711.0	505.5	505.5	610.6	641.4	595.9
	Change, %			*3.2*	*12.7*	*(8.0)*	*(5.0)*	*33.6*	*33.6*	*10.6*	*5.3*	*13.4*
	Propylene	-Naphtha	300.5	299.5	239.5	314.5	316.0	330.5	330.5	277.0	306.2	391.8
	Change, %			*0.3*	*25.5*	*(4.5)*	*(4.9)*	*(9.1)*	*(9.1)*	*8.5*	*(1.8)*	*(23.3)*
	Butadiene	-Naphtha	528.0	534.5	429.5	1,004.5	851.0	1,615.5	1,615.5	384.5	717.3	992.3
	Change, %			*(1.2)*	*22.9*	*(47.4)*	*(38.0)*	*(67.3)*	*(67.3)*	*37.3*	*(26.4)*	*(46.8)*
	Benzene	-Naphtha	293.0	329.5	282.0	284.5	321.0	338.0	338.0	197.0	247.2	345.8
	Change, %			*(11.1)*	*3.9*	*3.0*	*(8.7)*	*(13.3)*	*(13.3)*	*48.7*	*18.5*	*(15.3)*
	Toluene	-Naphtha	138.0	144.5	119.5	179.5	181.0	205.5	205.5	207.8	231.0	197.0
	Change, %			*(4.5)*	*15.5*	*(23.1)*	*(23.8)*	*(32.8)*	*(32.8)*	*(33.6)*	*(40.3)*	*(29.9)*
	Xylene	-Naphtha	115.5	119.5	99.5	137.0	153.5	190.5	190.5	206.3	228.2	175.3
	Change, %			*(3.3)*	*16.1*	*(15.7)*	*(24.8)*	*(39.4)*	*(39.4)*	*(44.0)*	*(49.4)*	*(34.1)*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	**HDPE**	CFR SE Asia	1,182.5	1,187.5	1,207.5	1,187.5	1,107.5	1,142.5	1,142.5	1,230.1	1,134.6	1,141.4
	Change, %			(0.4)	(2.1)	(0.4)	6.8	3.5	3.5	(3.9)	4.2	3.6
	MEG	CFR SE Asia	922.5	917.5	910.0	902.5	902.5	847.5	847.5	780.8	660.8	850.9
	Change, %			0.5	1.4	2.2	2.2	8.8	8.8	18.1	39.6	8.4
	PVC	CFR SE Asia	870.0	865.0	850.0	947.5	920.0	920.0	920.0	820.8	823.4	899.7
	Change, %			0.6	2.4	(8.2)	(5.4)	(5.4)	(5.4)	6.0	5.7	(3.3)
	PP	CFR SE Asia	1,157.5	1,157.5	1,147.5	1,167.5	1,117.5	1,032.5	1,032.5	1,109.8	978.4	1,098.0
	Change, %			0.0	0.9	(0.9)	3.6	12.1	12.1	4.3	18.3	5.4
	2-EH	CFR Korea	1,020.0	1,035.0	1,020.0	990.0	990.0	865.0	865.0	930.1	772.4	967.5
	Change, %			(1.4)	0.0	3.0	3.0	17.9	17.9	9.7	32.1	5.4
	ABS	CFR SE Asia	2,050.0	2,070.0	1,960.0	2,060.0	1,895.0	1,635.0	1,635.0	1,431.1	1,347.1	1,842.0
	Change, %			(1.0)	4.6	(0.5)	8.2	25.4	25.4	43.3	52.2	11.3
	SBR	CFR SE Asia	1,650.0	1,650.0	1,610.0	1,830.0	1,650.0	2,000.0	2,000.0	1,332.1	1,483.0	1,982.8
	Change, %			0.0	2.5	(9.8)	0.0	(17.5)	(17.5)	23.9	11.3	(16.8)
	SM	CFR SE Asia	1,290.0	1,332.5	1,305.0	1,350.0	1,242.5	1,205.0	1,205.0	1,100.7	1,064.6	1,251.4
	Change, %			(3.2)	(1.1)	(4.4)	3.8	7.1	7.1	17.2	21.2	3.1
	Caustic	FOB NEA	619.0	621.0	700.0	484.0	471.0	422.5	422.5	296.8	316.6	488.9
	Change, %			(0.3)	(11.6)	27.9	31.4	46.5	46.5	108.6	95.5	26.6
	PX	CFR SE Asia	912.5	895.0	900.0	837.5	817.5	855.0	855.0	842.9	790.4	843.7
	Change, %			2.0	1.4	9.0	11.6	6.7	6.7	8.3	15.5	8.2
	PO	CFR China	1,995.0	1,872.5	1,677.5	1,560.0	1,992.5	1,582.5	1,562.5	1,683.4	1,396.8	1,597.2
	Change, %			6.5	18.9	27.9	0.1	26.1	27.7	18.5	42.8	24.9
	Caprolactam	CFR SE Asia	2,060.0	2,060.0	2,020.0	1,830.0	1,770.0	1,850.0	1,850.0	1,581.5	1,344.9	1,931.1
	Change, %			0.0	2.0	12.6	16.4	11.4	11.4	30.3	53.2	6.7
	PTA	CFR SE Asia	717.5	727.5	712.5	667.5	657.5	642.5	642.5	648.0	613.7	667.2
	Change, %			(1.4)	0.7	7.5	9.1	11.7	11.7	10.7	16.9	7.5
Spread	**HDPE**		585.5	597.0	612.0	667.0	633.5	658.0	658.0	737.1	735.1	648.9
	Change, %			(1.9)	(4.3)	(12.2)	(7.6)	(11.0)	(11.0)	(20.6)	(20.3)	(9.8)
	MEG		325.5	327.0	314.5	382.0	428.5	363.0	363.0	287.8	261.3	358.4
	Change, %			(0.5)	3.5	(14.8)	(24.0)	(10.3)	(10.3)	13.1	24.6	(9.2)
	PVC		273.0	274.5	254.5	427.0	446.0	435.5	435.5	327.8	423.9	407.2
	Change, %			(0.5)	7.3	(36.1)	(38.8)	(37.3)	(37.3)	(16.7)	(35.6)	(33.0)
	PP		560.5	567.0	552.0	647.0	643.5	548.0	548.0	616.8	578.9	605.5
	Change, %			(1.1)	1.5	(13.4)	(12.9)	2.3	2.3	(9.1)	(3.2)	(7.4)
	2-EH		423.0	444.5	424.5	469.5	516.0	380.5	380.5	437.0	372.9	475.0
	Change, %			(4.8)	(0.4)	(9.9)	(18.0)	11.2	11.2	(3.2)	13.4	(10.9)
	ABS		1,453.0	1,479.5	1,364.5	1,539.5	1,421.0	1,150.5	1,150.5	938.1	947.6	1,349.5
	Change, %			(1.8)	6.5	(5.6)	2.3	26.3	26.3	54.9	53.3	7.7
	SBR	BD spread	525.0	525.0	585.0	305.0	325.0	(100.0)	(100.0)	454.7	366.2	498.0
	Change, %			0.0	(10.3)	72.1	61.5	(625.0)	(625.0)	15.5	43.4	5.4
	SM		693.0	742.0	709.5	829.5	768.5	720.5	720.5	607.7	665.1	758.9
	Change, %			(6.6)	(2.3)	(16.5)	(9.8)	(3.8)	(3.8)	14.0	4.2	(8.7)
	Caustic											
	Change, %											
	PX		315.5	304.5	304.5	317.0	343.5	370.5	370.5	349.9	390.9	351.2
	Change, %			3.6	3.6	(0.5)	(8.2)	(14.8)	(14.8)	(9.8)	(19.3)	(10.2)
	PO	propylene sprea	1,097.5	982.5	842.5	725.0	1,202.5	767.5	747.5	913.4	691.1	712.8
	Change, %			11.7	30.3	51.4	(8.7)	43.0	46.8	20.2	58.8	54.0
	Caprolactam	benzene spread	1,170.0	1,140.0	1,142.5	1,025.0	975.0	1,027.5	1,027.5	891.6	698.2	1,092.8
	Change, %			2.6	2.4	14.1	20.0	13.9	13.9	31.2	67.6	7.1
	PTA	px spread	78.8	101.0	82.5	81.3	85.3	44.0	44.0	58.0	60.4	76.6
	Change, %			(22.0)	(4.5)	(3.1)	(7.6)	79.0	79.0	35.8	30.3	2.8

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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SK 증권

Global peers

	Currency	12/28	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											17E	18E	17E	18E	17E	18E
Petrochemical																
DowDuPont	USD	71.2	(0.4)	(1.2)	(0.8)	2.9	13.6	24.0	24.5	166,654	17.6	14.7	1.8	1.7	10.1	9.1
Eastman	USD	92.6	(0.8)	(0.0)	1.3	2.4	11.1	22.7	23.2	13,316	11.4	10.5	2.5	2.2	8.6	8.0
BASF	EUR	91.7	(1.2)	(1.9)	(2.1)	2.2	12.0	4.6	3.9	101,299	14.7	13.7	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	73.0	(0.9)	(0.4)	(3.5)	(6.5)	(4.6)	22.9	22.9	22,176	17.1	15.9	3.0	2.8	9.4	8.8
Arkema	EUR	101.6	(0.8)	(0.2)	(0.9)	(2.1)	9.4	9.2	9.3	9,261	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	66.3	(0.6)	2.1	4.8	(0.7)	(0.7)	5.5	6.3	7,294	15.6	13.2	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	810	(0.5)	(2.4)	1.0	15.2	29.2	46.5	45.7	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,237	(0.9)	(1.2)	1.0	15.3	32.7	62.1	63.1	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	11,450	(1.3)	(1.0)	(4.1)	13.8	10.9	25.3	26.3	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,454	(0.3)	(1.0)	3.2	4.9	19.1	42.3	42.6	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,218	0.0	0.1	2.0	3.7	13.9	20.7	20.3	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	10,010	(0.4)	(2.2)	(8.8)	6.7	6.9	11.6	11.6	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	101.9	0.0	0.1	1.3	(0.9)	(0.4)	11.4	11.4	81,501	14.3	13.8	1.7	1.7	7.4	7.1
Yansab	SAR	58.2	0.0	(0.0)	(1.4)	(1.9)	4.4	7.7	6.9	8,732	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	98.7	1.9	3.5	5.4	7.5	6.8	12.9	10.7	21,177	14.5	14.0	1.8	1.8	19.0	19.3
Formosa Fiber	TWD	103.0	2.5	5.6	9.7	11.7	8.3	8.8	7.0	20,348	13.6	13.3	1.7	1.7	11.5	11.4
Nan Ya Plastics	TWD	77.9	0.9	2.2	2.6	4.3	3.3	9.7	9.4	20,823	14.9	15.5	1.7	1.7	16.4	16.6
Sinopec Shanghai	CNY	6.33	0.3	(0.8)	(0.2)	0.3	(3.9)	(1.9)	(1.7)	9,111	11.6	12.1	2.1	1.9	6.5	7.0
Sinopec Yizheng(Fibe	CNY	2.67	0.0	(3.6)	(9.5)	(15.2)	(20.1)	(35.5)	(34.9)	5,291	49.4	65.1	5.2	4.9	13.8	10.2
Reliance	INR	921	(0.3)	0.1	(2.6)	17.9	32.3	72.9	70.2	93,817	14.4	13.0	1.7	1.5	9.4	8.7
Industries Qatar	QAR	98.0	0.0	(0.9)	7.1	6.9	2.6	(16.6)	(16.6)	16,155	14.3	13.8	1.6	1.5	51.2	30.1
PTT Chemical	THB	85.0	0.0	(0.3)	7.3	10.4	24.1	34.4	34.9	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	7.7	(1.3)	1.3	3.1	5.6	8.1	10.2	10.3	15,167	15.8	15.2	2.0	1.9	9.0	8.7
LG화학	KRW	405,000	0.0	2.9	(4.1)	3.3	43.6	55.2	55.2	26,688	15.0	14.1	2.0	1.8	6.7	6.2
롯데케미칼	KRW	368,000	0.0	2.1	4.5	(2.6)	11.3	(0.3)	(0.3)	11,774	5.5	5.3	1.1	0.9	3.7	3.3
한화케미칼	KRW	31,600	0.0	5.5	6.2	(2.6)	5.2	27.9	27.9	4,861	5.1	5.4	0.8	0.7	6.7	6.4
금호석유	KRW	99,500	0.0	2.8	10.2	38.0	33.0	21.3	21.3	2,830	16.4	14.3	1.8	1.6	11.0	9.5
SKC	KRW	47,000	0.0	6.7	11.2	13.9	40.5	42.4	42.4	1,647	12.5	10.6	1.1	1.1	10.3	8.7
국도화학	KRW	63,100	0.0	0.6	(6.1)	14.3	22.1	14.9	14.9	342	0.0	0.0	0.0	0.0	0.0	0.0
효성	KRW	7,580	0.0	0.8	(5.7)	14.0	34.9	11.5	11.5	4,573	8.3	8.4	1.2	1.1	7.3	6.5
Average			**(0.1)**	**0.6**	**1.1**	**6.1**	**13.7**	**19.5**	**19.3**							
Refinery																
Valero	USD	91.9	(0.4)	0.9	10.3	19.5	37.0	33.9	34.5	40,218	13.9	13.3	2.0	2.0	6.8	6.8
Conoco Phillips	USD	54.9	(0.5)	(1.1)	8.2	9.7	24.5	8.6	9.5	65,622	33.7	25.7	2.2	2.2	7.1	6.6
Formosa Petrochemic	TWD	115.5	(0.4)	2.2	9.0	10.5	10.0	8.5	3.1	37,084	18.7	19.3	3.3	3.2	11.9	12.4
Andeavor	USD	114.3	(0.9)	1.9	8.7	10.8	22.6	29.1	30.7	17,837	12.8	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	66.0	(0.6)	(0.6)	7.5	17.7	27.3	30.8	31.0	32,225	14.7	12.6	2.6	2.7	7.6	7.4
Devon Energy	USD	41.4	(0.9)	(0.4)	11.6	12.8	30.1	(9.9)	(9.3)	21,756	17.4	13.8	2.6	2.2	8.4	7.4
Hollyfrontier	USD	51.2	(0.5)	1.2	15.5	42.4	82.9	54.5	56.3	9,080	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	101.2	(0.8)	0.3	6.6	10.4	23.5	16.7	17.1	51,257	15.5	14.5	2.2	2.2	8.9	8.8
Murphy Oil	USD	31.1	(1.9)	(0.4)	10.4	16.9	21.1	(1.3)	(0.3)	5,358	156.8	109.3	1.2	1.1	4.8	4.4
JX Holdings	JPY	727.0	(0.4)	1.1	17.2	25.6	47.9	46.8	47.0	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,525.0	0.1	1.3	20.8	42.5	40.3	45.0	45.7	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	53.4	(1.3)	(0.4)	5.4	44.4	54.9	45.6	46.2	16,445	16.8	16.7	2.9	2.7	10.3	10.3
Ashland	USD	71.2	(0.4)	(0.4)	(3.4)	8.9	8.0	32.2	33.2	4,430	21.1	18.2	1.3	1.2	10.0	9.5
Fuchs Petrolub	EUR	44.3	(1.2)	(0.7)	1.0	(11.7)	(7.7)	10.5	11.0	7,070	21.9	20.7	4.1	3.6	12.9	12.2
SK이노베이션	KRW	204,500	0.0	0.2	(1.4)	2.8	29.8	39.6	39.6	17,651	8.0	7.6	1.0	0.9	4.9	4.4
S-Oil	KRW	117,000	0.0	(6.0)	(2.9)	(8.2)	25.9	38.1	38.1	12,296	11.6	8.7	2.0	1.8	8.9	6.4
GS	KRW	62,200	0.0	0.2	1.6	(5.2)	(8.5)	15.0	15.0	5,395	5.9	5.5	0.8	0.7	7.0	6.5
Average			**(0.6)**	**(0.0)**	**7.4**	**14.7**	**27.6**	**26.1**	**26.4**							

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

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Global peers

	Currency	12/28	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 17E	PER 18E	PBR 17E	PBR 18E	EV/EBITDA 17E	EV/EBITDA 18E
E&P/Shale																
Exxon Mobil	USD	84	(0.5)	(0.4)	1.7	2.0	3.6	(7.4)	(7.3)	354,392	19.8	18.7	1.9	1.9	8.8	8.7
BP	GBP	523	0.8	1.1	5.7	9.5	16.2	2.2	2.6	140,101	17.3	15.1	1.4	1.4	5.9	5.5
Shell	EUR	2,480	0.8	1.1	4.8	10.3	20.3	10.4	10.6	281,251	15.1	13.5	1.4	1.4	6.6	6.1
Chevron	USD	125	(0.3)	0.2	6.8	6.5	20.2	6.3	6.4	237,783	23.1	20.9	1.6	1.7	7.4	6.9
Total	EUR	46	(0.6)	(0.9)	(3.5)	1.3	4.9	(5.3)	(5.5)	139,983	12.6	11.7	1.2	1.2	5.4	5.1
Sinopec	CNY	6	(0.8)	1.7	1.5	3.9	3.5	13.3	13.3	108,739	12.8	11.4	1.0	0.9	4.4	4.1
Petrochina	CNY	8	0.4	0.0	(1.8)	1.3	5.2	1.8	1.8	216,042	30.1	24.7	1.2	1.2	6.0	5.8
CNOOC	CNY	11	1.6	1.1	(4.4)	(7.0)	(2.9)	(16.9)	(17.7)	64,123	11.1	9.8	1.0	0.9	4.0	3.7
Gazprom	RUB	131	(0.0)	(1.4)	(2.3)	6.8	9.5	(14.5)	(15.6)	53,663	3.9	4.0	0.2	0.2	3.5	3.5
Rosneft	RUB	292	0.6	(0.8)	(1.0)	(8.6)	(12.5)	(26.9)	(27.6)	53,663	7.2	6.2	0.7	0.7	4.6	4.2
Anadarko	USD	54	(0.2)	1.3	12.0	9.8	18.5	(23.5)	(23.1)	29,350	#N/A N/A	136.5	2.0	1.9	6.9	5.7
Petrobras	BRL	16	0.0	2.2	5.0	5.2	32.2	8.3	8.3	65,345	9.5	7.0	0.6	0.6	4.6	4.6
Lukoil	USD	3,335	0.5	(0.4)	0.8	8.8	16.1	(2.6)	(3.3)	48,669	6.1	5.8	0.7	0.6	N/A	N/A
Kinder	USD	18	(1.3)	0.1	7.8	(5.8)	(5.1)	(13.0)	(12.7)	47,497	25.9	23.6	1.1	1.2	10.7	10.4
Statoil	NOK	175	(0.6)	0.1	5.2	10.0	25.3	9.7	10.6	71,118	17.3	15.7	1.8	1.7	3.5	3.3
BHP	AUD	30	0.2	1.6	7.0	14.7	25.9	16.0	18.0	117,678	18.7	17.8	2.0	1.9	6.9	6.7
PTT E&P	THB	100	0.8	0.3	8.7	11.7	15.3	5.0	3.9	12,188	13.5	12.9	1.0	0.9	3.5	3.5
Petronas gas	MYR	17	0.6	2.2	8.2	(2.3)	(6.5)	(17.9)	(17.9)	8,516	18.2	17.7	2.6	2.6	10.3	10.0
Chesapeake	USD	4	(2.0)	2.9	(2.2)	(7.9)	(20.2)	(44.7)	(43.6)	3,598	4.9	4.3	#N/A N/A	10.2	6.4	5.8
Noble Energy	USD	29	(0.6)	1.2	12.5	2.8	1.7	(23.9)	(23.4)	14,180	163.7	43.4	1.5	1.4	7.4	6.0
Average		**0**	**(0.0)**	**0.7**	**3.6**	**3.7**	**8.6**	**(6.2)**	**(6.1)**							
PV																
WACKER	EUR	162.2	0.3	(0.0)	18.1	33.7	70.5	64.9	64.1	10,170	25.6	22.1	2.5	2.4	8.2	7.7
GCL-Poly	HKD	1.4	0.0	1.4	7.7	30.8	72.8	48.9	50.5	3,331	9.0	7.9	0.9	0.8	6.2	5.7
SunPower	USD	8.4	(2.9)	(6.7)	2.7	15.6	(11.2)	24.2	27.5	1,177	#N/A N/A	69.1	1.6	1.9	12.3	10.2
Canadian Solar	USD	16.9	(0.2)	(1.4)	(4.9)	0.1	5.4	38.5	38.4	978	9.6	10.8	0.9	0.8	9.8	9.5
JA Solar	USD	7.5	0.5	1.1	0.8	(2.1)	17.1	56.1	56.7	355	14.0	12.5	1.7	1.6	3.9	3.7
Yingli	USD	1.7	(2.3)	(0.6)	(22.5)	(25.6)	(25.9)	(32.9)	(35.0)	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	67.5	(1.2)	(1.9)	12.5	47.2	68.5	107.3	110.4	7,051	44.9	20.0	1.2	1.2	13.0	7.4
한화큐셀	USD	7.0	(0.1)	(3.0)	(9.4)	(14.5)	(5.3)	(18.8)	(14.0)	584	31.9	22.6	#N/A N/A	#N/A N/A	7.9	7.2
OCI	KRW	136,000	0.0	6.7	10.6	32.7	49.0	72.8	72.8	3,028	15.2	17.0	1.0	0.9	8.3	7.2
웅진에너지	KRW	8,220	0.0	1.0	(11.6)	8.9	15.8	73.6	73.6	193	N/A	1.0	0.9	8.3	7.2	8.3
신성솔라에너지	KRW	1,915	0.0	(2.0)	(10.1)	6.4	(14.5)	(13.3)	(13.3)	309	N/A	0.9	8.3	7.2	8.3	8.4
Average			**(0.5)**	**(0.5)**	**(0.6)**	**12.1**	**22.0**	**38.3**	**39.3**							
Gas Company																
Towngas China	HKD	6.3	0.5	4.1	0.6	14.6	23.1	55.4	53.9	2,226	12.8	11.6	1.1	1.0	11.8	10.5
Kulun	HKD	8.1	0.4	(0.5)	20.1	6.7	23.5	40.8	40.3	8,411	11.5	10.2	1.3	1.2	5.9	5.6
Beijing Enterprise	HKD	46.4	(0.1)	1.0	1.1	10.5	22.4	28.7	26.6	7,496	8.2	7.4	0.9	0.8	13.9	14.7
ENN Energy	HKD	55.8	1.4	(2.4)	(4.9)	(1.5)	18.2	73.7	74.8	7,727	12.8	11.1	2.4	2.1	7.9	6.9
China Resources Gas	HKD	28.4	1.4	0.9	(4.4)	4.2	5.0	30.6	30.0	8,071	14.4	12.7	2.7	2.4	8.6	7.8
China Gas Holdings	HKD	21.6	(1.4)	(2.3)	(13.6)	(7.7)	35.3	106.9	105.3	13,737	14.8	12.4	3.6	3.0	11.9	10.3
Shenzen Gas	HKD	14.9	0.7	1.6	5.5	1.4	2.6	32.6	31.7	3,864	11.1	10.0	1.3	1.2	8.1	7.7
Shann Xi	CNY	8.4	(0.9)	(8.7)	3.3	1.9	(4.3)	(11.5)	(12.0)	1,443	16.0	18.8	1.6	1.5	#N/A N/A	#N/A N/A
Suntien	HKD	2.1	0.5	3.5	4.5	6.7	47.9	109.1	107.0	984	6.5	5.5	0.7	0.6	8.4	7.4
China Oil & Gas	HKD	0.9	6.3	25.0	51.8	60.4	57.4	39.3	39.3	634	11.8	10.4	1.3	1.1	6.7	6.1
Average			**0.9**	**2.2**	**6.4**	**9.7**	**23.1**	**50.6**	**49.7**							
EV																
LG화학	KRW	405,000	0.0	2.9	(4.1)	3.3	43.6	55.2	55.2	26,688	13.6	12.7	1.7	1.6	6.4	6.0
삼성SDI	KRW	204,500	0.0	1.0	(7.3)	3.0	21.7	87.6	87.6	13,127	12.8	10.7	1.1	1.0	14.3	11.5
Panasonic	JPY	1649.5	0.2	(1.1)	(2.4)	1.2	6.3	37.6	38.7	35,942	16.1	14.1	2.1	1.9	6.1	5.6
GS Yuasa	JPY	561.0	0.5	0.0	(2.1)	(5.1)	14.3	15.7	15.4	2,061	15.4	13.7	1.3	1.2	6.8	6.3
NEC	JPY	3040.0	0.3	(0.7)	1.8	(0.3)	3.4	(0.7)	(1.9)	7,034	17.9	15.1	0.9	0.8	6.1	5.9
BYD Auto	CNY	65.1	(1.0)	4.6	1.1	(4.8)	29.3	31.8	30.9	26,103	27.1	21.5	2.9	2.6	12.8	11.0
Tesla Motors	USD	311.4	(1.3)	(4.3)	1.2	(8.7)	(13.7)	45.0	45.7	52,328	#N/A N/A	74.3	10.9	9.2	31.7	15.7
Kandi Technologies	USD	6.8	(2.2)	(5.6)	(3.5)	18.3	60.0	36.0	38.8	327	#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			**(0.4)**	**(0.4)**	**(1.9)**	**0.9**	**20.6**	**38.5**	**38.8**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임