SK Energy Daily

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SK 증권

1. News Summary (3 page)

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News		Conclusion
WTI comment	OPEC 회동 앞두고 하락…WTI 0.2%↓	
Headline	SK이노, 헝가리에 배터리공장 건설…8천억원 투자	본업에서 벌어들인 현금으로 배터리 사업 확장을 도모하는 것
News 1.	"테슬라 전기트럭 충전에 4천가구용 전기 필요…현실성 의문"	태양열을 이용한다는 설명이지만 메가차저의 구체적 스펙 지켜봐야 함
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	58.0	(0.2)	2.0	6.6	24.9	28.2
Dubai	$/bbl	61.3	(0.4)	1.3	5.0	22.3	37.2
Gasoline	$/bbl	76.6	0.7	1.8	5.3	13.0	27.7
Diesel	$/bbl	74.7	0.3	0.5	4.9	17.5	31.2
Complex margin	$/bbl	8.4	0.4	(0.1)	0.1	(1.0)	(0.6)
1M lagging	$/bbl	13.4	0.1	(0.0)	2.4	3.3	8.2
Petrochemical			%	%	%	%	%
Naphtha	$/t	598	0.3	1.5	9.0	24.9	41.5
Butadiene	$/t	1,010	1.0	3.1	(13.3)	(22.9)	(31.8)
HDPE	$/t	1,300	1.6	1.6	4.8	12.6	17.1
MEG	$/t	910	0.6	2.6	1.1	0.6	23.8
PX	$/t	884	(0.2)	0.1	6.3	8.9	13.1
SM	$/t	1,297	1.0	3.8	8.7	1.9	12.6
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	3.13	3.7	0.6	3.4	(4.8)	(11.8)
Natural rubber	$/t	1,390	0.0	1.5	0.0	(9.2)	(21.0)
Cotton	C/lbs	74.1	2.6	4.4	8.3	4.9	2.3

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	11/27	$/t	1,195	2.6	5.8	0.8	29.2
Propylene	11/27	$/t	835	3.1	3.4	5.7	21.9
Benzene	11/27	$/t	878	2.0	8.3	10.4	19.8
Toluene	11/27	$/t	715	0.0	3.6	9.2	7.9
Xylene	11/27	$/t	695	3.7	6.1	10.8	6.1
PP	11/27	$/t	1,148	0.0	0.0	2.7	13.1
PVC	11/27	$/t	850	0.0	(4.5)	(7.6)	(11.5)
ABS	11/27	$/t	1,960	1.6	2.1	3.4	24.1
SBR	11/27	$/t	1,610	1.3	(5.3)	(2.4)	(10.1)
SM	11/27	$/t	1,305	2.0	7.9	5.0	9.7
BPA	11/27	$/t	1,678	(5.9)	(0.4)	(15.8)	17.3
Caustic	11/27	$/t	700	0.0	17.1	48.6	79.5
2-EH	11/27	$/t	1,020	3.0	2.0	3.0	21.4
Caprolactam	11/27	$/t	2,020	(1.0)	(6.9)	14.1	38.4
Solar				%	%	%	%
Polysilicon	11/22	$/kg	16.7	0.0	(0.1)	7.1	14.0
Module	11/22	$/W	0.31	(0.3)	(1.3)	(2.2)	(20.1)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	81.7	0.7	1.0	(2.4)	6.8	(5.6)
Shell	EUR	2,408	4.0	3.3	3.5	12.4	21.0
Petrochina	CNY	8.21	(1.6)	(0.1)	1.0	0.1	7.0
Gazprom	RUB	135.2	1.3	2.0	7.3	13.8	(9.2)
Petrobras	BRL	15.8	(0.2)	(0.4)	(7.0)	14.2	2.5
Refinery							
Phillips66	USD	94.1	1.3	0.5	2.2	12.4	11.8
Valero	USD	83.2	1.4	(0.7)	7.1	21.7	30.5
JX	JPY	625.7	(2.1)	0.7	5.5	15.1	40.9
Neste Oil	EUR	51.3	2.6	0.6	5.9	43.9	33.4

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	94.3	0.7	0.6	0.5	15.0	19.8
DowDuPont	USD	71.1	1.4	(0.2)	(2.0)	9.9	30.9
SABIC	SAR	100.5	0.2	1.4	1.9	1.5	10.6
Formosa Pla.	TWD	93.4	0.1	1.4	1.6	(1.2)	5.2
Shin-Etsu	JPY	12,420	(1.4)	(0.7)	9.3	29.3	52.0
Renewable							
Wacker	EUR	140.0	0.1	(1.4)	7.3	32.7	71.0
First Solar	USD	62.13	0.8	3.1	7.7	29.4	99.7
GCL-Poly	HKD	1.32	3.9	(7.7)	(1.5)	50.0	28.2
Tesla Motors	USD	317.6	0.2	(0.1)	(1.0)	(8.1)	61.9

4. Coverage Summary

	11/28	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,514	0.3	(0.7)	0.7	6.0	6.9	27.3				* 추정치는 12M fwd 기준임	
KOSPI화학	6,095	0.5	1.2	0.7	4.4	7.3	26.6				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	420,500	0.2	1.8	3.7	10.7	35.9	89.0	매수	400,000	(4.9)	13.32	2.20
롯데케미칼	355,000	2.2	0.9	(8.5)	(9.9)	(4.8)	10.2	매수	410,000	15.5	5.58	1.22
한화케미칼	29,750	(0.5)	(1.0)	(6.4)	(15.0)	(0.2)	24.2	매수	39,000	31.1	5.02	0.83
금호석유화학	86,500	5.4	16.1	26.1	8.7	6.0	14.0	매수	100,000	15.6	14.66	1.61
KCC	383,000	0.1	(1.2)	(1.8)	(3.3)	(5.9)	1.2	매수	450,000	17.5	21.26	0.56
OCI	123,000	(6.1)	(3.9)	9.3	30.0	38.4	60.4	매수	120,000	(2.4)	15.62	0.94
SKC	42,400	(0.8)	(1.3)	4.2	15.2	34.2	35.2	매수	45,000	6.1	11.72	1.16
SK이노베이션	206,500	0.2	3.8	0.2	11.0	21.1	32.4	매수	210,000	1.7	8.33	1.10
S-Oil	119,500	(1.2)	0.4	(7.7)	(6.3)	14.4	39.9	매수	140,000	17.2	12.93	2.26
GS	60,500	(0.2)	0.3	(8.7)	(13.4)	(17.2)	9.0	매수	80,000	32.2	5.74	0.89
SK가스	97,200	(1.2)	(0.8)	3.4	(13.2)	(19.7)	(12.4)	매수	130,000	33.7	7.34	0.72
포스코대우	18,350	(1.1)	0.0	(7.3)	(14.7)	(23.7)	(29.2)	매수	25,000	36.2	10.28	0.80
LG상사	27,100	0.2	(0.9)	(5.7)	(5.4)	(16.9)	(11.7)	매수	38,000	40.2	9.87	0.88
한국전력	38,300	0.1	2.0	(1.4)	(12.9)	(9.0)	(18.9)	매수	55,000	43.6	7.34	0.31
한국가스공사	44,000	0.5	(1.5)	4.9	(2.8)	(14.6)	(1.9)	매수	60,000	36.4	8.99	0.57

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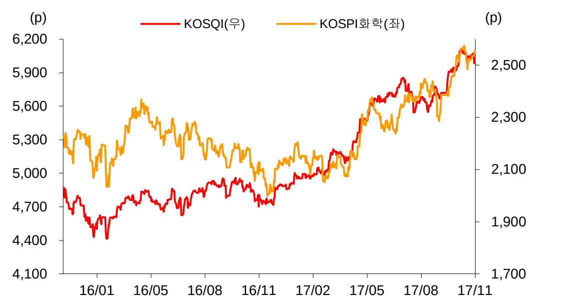
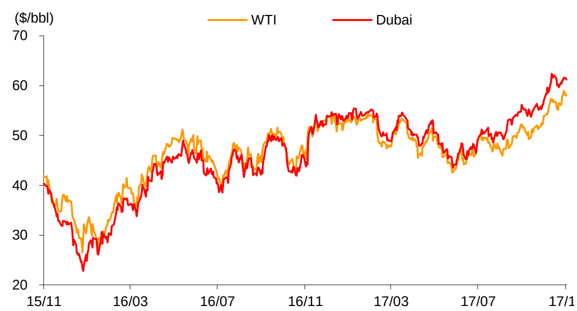
Key Chart

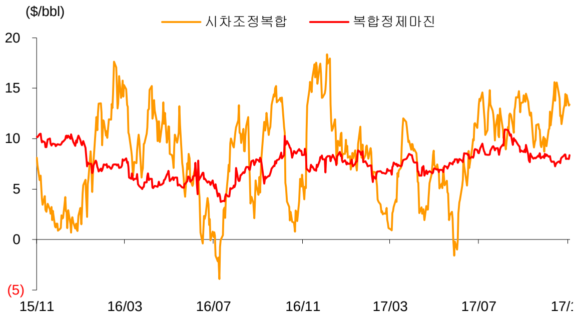
KOSPI/KOSPI화학



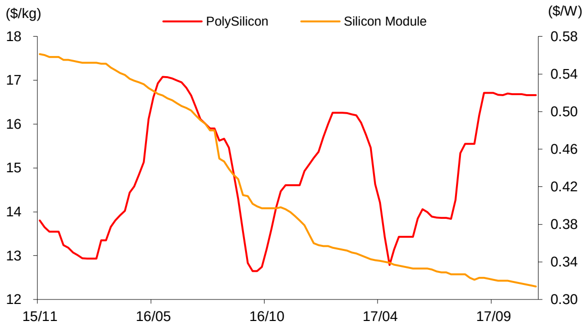
WTI/Dubai



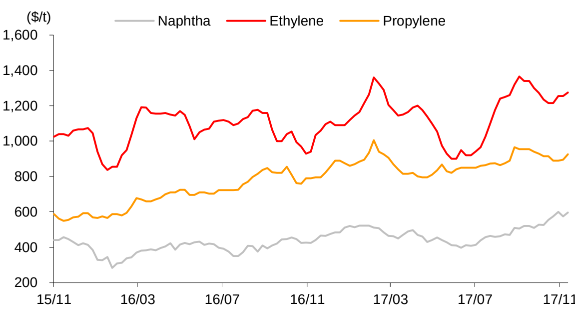
Complex & 1M lagging margin



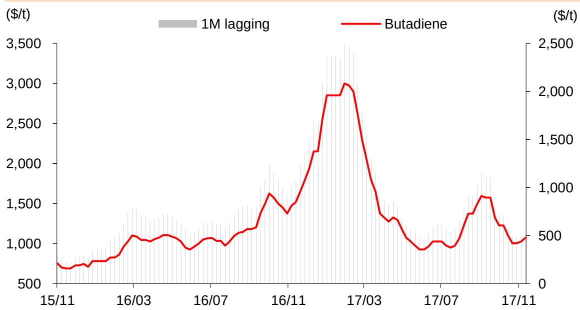
Polysilicon & Module prices



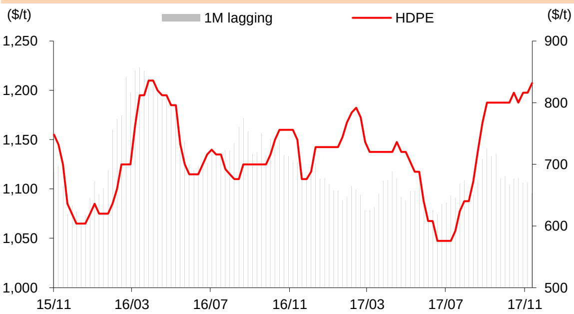
Naphtha/Ethylene/Propylene prices



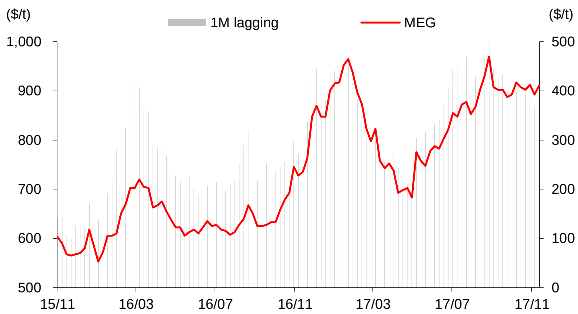
Butadiene price & 1M lagging naphtha spread



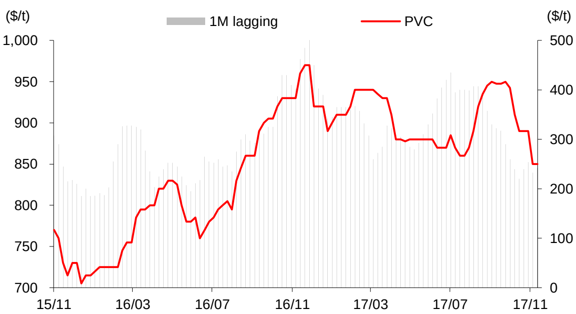
HDPE price & 1M lagging naphtha spread



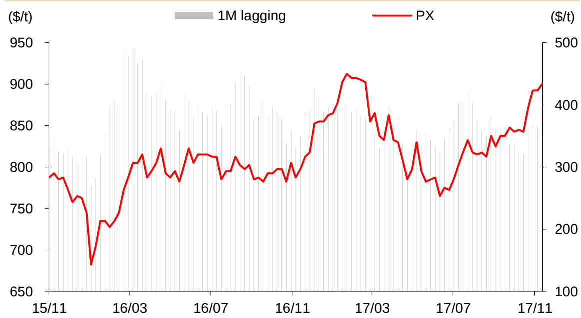
MEG price & 1M lagging naphtha spread



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: 연합뉴스)
제목	SK이노, 헝가리에 배터리공장 건설…8천억원 투자
결론	본업에서 벌어들인 현금으로 배터리 사업 확장을 도모하는 것
세부	
	1) 헝가리 북부 코마롬 42만㎢ 부지에 8천억원을 투자할 것으로 알려짐
	2) 충남 서산 배터리공장(3.9GW)보다 훨씬 큰 7GW 규모가 될 전망
	3) 2020년 상업 가동이 목표이며 내년 2월 착공에 들어갈 예정
	4) LG화학은 폴란드에 짓고 있고 삼성SDI 헝가리 공장은 지난 5월 완공
	5) 본업에서 벌어들인 현금으로 배터리 사업 확장을 도모하는 것

WTI Comment	(출처: 연합뉴스)
제목	OPEC 회동 앞두고 하락…WTI 0.2%↓
상승 요인	사우디는 OPEC 회동에서 감산 시한 연장하는 것을 추진
하락 요인	러시아는 시장 과열을 우려해 감산 연장 기간에 대해 주저

Issue 1	(출처: 연합뉴스)
제목	"테슬라 전기트럭 충전에 4천가구용 전기 필요…현실성 의문"
결론	태양열을 이용한다는 설명이지만 메가차저의 구체적 스펙 지켜봐야 함
세부	
	1) 테슬라 세미가 1회 충전에 4천 가구 분의 전기가 필요할 것이라는 분석
	2) 오로라 에너지 CEO, "30분 충전을 위해 1,600kw가 필요할 것"
	3) 평균 주택 3~4천 채에 공급되는 양과 맞먹는 수준으로 슈퍼차저의 10배
	4) 테슬라, "메가차저를 이용해 30분 충전으로 400마일을 달릴 수 있음"
	5) 태양열을 이용한다는 설명이지만 메가차저의 구체적 스펙 지켜봐야 함

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

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**	0.845	0.841	0.852	0.861	0.835	0.894	0.942	0.951	0.901	0.904	0.891
	Change, %		*0.5*	*(0.9)*	*(2.0)*	*1.2*	*(5.6)*	*(10.4)*	*(11.2)*	*(6.3)*	*(6.6)*	*(5.2)*
	USD/JPY	111.5	111.1	112.5	113.7	109.3	111.3	111.9	117.0	121.1	108.8	112.1
	Change, %		*0.4*	*(0.9)*	*(1.9)*	*2.0*	*0.1*	*(0.4)*	*(4.7)*	*(7.9)*	*2.5*	*(0.5)*
	USD/KRW	1,084.3	1,088.6	1,095.9	1,130.3	1,120.1	1,120.8	1,170.3	1,205.8	1,131.2	1,160.5	1,135.4
	Change, %		*(0.4)*	*(1.1)*	*(4.1)*	*(3.2)*	*(3.3)*	*(7.4)*	*(10.1)*	*(4.1)*	*(6.6)*	*(4.5)*
Agriculture	**Corn**	336.3	338.8	345.0	348.8	336.0	374.3	348.5	352.0	376.8	358.5	360.7
	Change, %		*(0.7)*	*(2.5)*	*(3.6)*	*0.1*	*(10.2)*	*(3.5)*	*(4.5)*	*(10.8)*	*(6.2)*	*(6.8)*
	Soybean	993.0	996.0	989.0	975.3	935.3	926.5	1,056.0	996.5	945.4	987.5	976.3
	Change, %		*(0.3)*	*0.4*	*1.8*	*6.2*	*7.2*	*(6.0)*	*(0.4)*	*5.0*	*0.6*	*1.7*
	Wheat	410.8	409.5	424.8	427.3	400.0	438.3	389.5	408.0	508.1	436.4	438.3
	Change, %		*0.3*	*(3.3)*	*(3.9)*	*2.7*	*(6.3)*	*5.5*	*0.7*	*(19.2)*	*(5.9)*	*(6.3)*
	Rice	12.3	12.3	12.3	11.6	12.3	11.0	9.6	9.4	11.1	10.3	11.0
	Change, %		*0.1*	*(0.3)*	*6.5*	*(0.2)*	*12.1*	*28.4*	*31.5*	*11.3*	*19.0*	*12.1*
	Oats	244.8	250.5	255.8	265.3	238.5	244.3	202.3	228.5	250.2	196.3	253.4
	Change, %		*(2.3)*	*(4.3)*	*(7.7)*	*2.6*	*0.2*	*21.0*	*7.1*	*(2.2)*	*24.7*	*(3.4)*
MYR/mt	**Palm Oil**	2,470.0	2,495.0	2,580.0	2,786.0	2,723.0	2,840.0	3,084.0	3,218.0	2,190.3	2,653.8	2,822.6
	Change, %		*(1.0)*	*(4.3)*	*(11.3)*	*(9.3)*	*(13.0)*	*(19.9)*	*(23.2)*	*12.8*	*(6.9)*	*(12.5)*
	Cocoa	2,047.0	2,065.0	2,102.0	2,115.0	2,015.0	1,911.0	2,403.0	2,126.0	3,091.6	2,854.0	2,014.6
	Change, %		*(0.9)*	*(2.6)*	*(3.2)*	*1.6*	*7.1*	*(14.8)*	*(3.7)*	*(33.8)*	*(28.3)*	*1.6*
	Cotton	74.1	72.2	70.9	68.2	70.3	77.1	73.3	70.7	63.3	65.6	73.3
	Change, %		*2.6*	*4.4*	*8.6*	*5.3*	*(3.9)*	*1.1*	*4.8*	*17.0*	*12.9*	*1.0*
	Sugar	15.0	15.4	14.9	14.6	14.3	15.1	19.9	19.5	13.1	18.2	15.9
	Change, %		*(2.3)*	*1.1*	*2.8*	*5.1*	*(0.1)*	*(24.6)*	*(22.9)*	*14.5*	*(17.1)*	*(5.7)*
	Coffee	127.5	125.6	123.9	126.6	129.9	131.2	153.0	137.1	132.6	136.1	134.0
	Change, %		*1.5*	*2.9*	*0.7*	*(1.9)*	*(2.9)*	*(16.7)*	*(7.0)*	*(3.9)*	*(6.3)*	*(4.9)*
Energy	**WTI**	58.0	58.1	56.8	53.9	46.6	49.8	47.1	53.7	48.8	43.4	50.3
	Change, %		*(0.2)*	*2.0*	*7.6*	*24.5*	*16.4*	*23.2*	*7.9*	*18.7*	*33.7*	*15.3*
	Brent	63.4	63.8	62.6	60.4	51.9	52.2	48.2	56.8	53.7	45.1	53.9
	Change, %		*(0.7)*	*1.3*	*4.9*	*22.1*	*21.5*	*31.4*	*11.5*	*18.1*	*40.6*	*17.5*
	Natural Gas	3.1	2.9	3.0	2.8	2.9	3.2	3.2	3.7	2.6	2.6	3.0
	Change, %		*5.0*	*1.9*	*11.7*	*5.1*	*(5.0)*	*(4.9)*	*(17.5)*	*16.9*	*20.4*	*1.0*
	Ethanol	1.4	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.5	1.5	1.5
	Change, %		*(2.0)*	*(2.5)*	*(2.7)*	*(10.4)*	*(10.7)*	*(16.0)*	*(15.5)*	*(10.1)*	*(10.4)*	*(10.4)*
	RBOB Gasoline	177.2	178.9	177.3	176.9	171.2	164.3	141.3	166.5	163.6	140.0	162.0
	Change, %		*(1.0)*	*(0.1)*	*0.2*	*3.5*	*7.9*	*25.4*	*6.4*	*8.3*	*26.6*	*9.4*
	Coal	96.4	95.1	95.9	97.5	97.8	74.5	92.3	88.4	59.0	65.5	87.2
	Change, %		*1.4*	*0.5*	*(1.1)*	*(1.4)*	*29.5*	*4.5*	*9.0*	*63.5*	*47.3*	*10.6*
Metal	**Gold**	1,294.0	1,294.6	1,280.5	1,273.9	1,308.4	1,266.9	1,194.0	1,152.3	1,160.6	1,248.5	1,257.7
	Change, %		*(0.0)*	*1.0*	*1.6*	*(1.1)*	*2.1*	*8.4*	*12.3*	*11.5*	*3.6*	*2.9*
	Silver	16.9	17.1	17.0	16.9	17.4	17.4	16.6	15.9	15.7	17.1	17.2
	Change, %		*(1.1)*	*(0.6)*	*0.0*	*(3.3)*	*(2.8)*	*1.6*	*6.0*	*7.3*	*(1.4)*	*(1.6)*
	Copper	6,805.0	6,942.0	6,909.0	6,830.0	6,666.0	5,657.5	5,881.0	5,535.5	5,503.1	4,872.0	6,132.1
	Change, %		*(2.0)*	*(1.5)*	*(0.4)*	*2.1*	*20.3*	*15.7*	*22.9*	*23.7*	*39.7*	*11.0*
	Nickel	731.6	744.7	766.7	750.0	745.4	584.8	787.5	682.0	759.5	646.4	674.2
	Change, %		*(1.8)*	*(4.6)*	*(2.5)*	*(1.9)*	*25.1*	*(7.1)*	*7.3*	*(3.7)*	*13.2*	*8.5*
	Zinc	3,158.0	3,187.0	3,190.0	3,172.5	3,063.5	2,640.0	2,900.0	2,576.0	1,941.9	2,097.5	2,858.1
	Change, %		*(0.9)*	*(1.0)*	*(0.5)*	*3.1*	*19.6*	*8.9*	*22.6*	*62.6*	*50.6*	*10.5*
	Lead	2,424.5	2,463.0	2,475.3	2,418.3	2,306.3	2,114.8	2,518.0	2,003.5	1,791.2	1,868.3	2,297.4
	Change, %		*(1.6)*	*(2.1)*	*0.3*	*5.1*	*14.6*	*(3.7)*	*21.0*	*35.4*	*29.8*	*5.5*
	Aluminum	14,770.0	14,930.0	14,910.0	16,290.0	16,320.0	14,015.0	14,370.0	12,765.0	12,184.0	12,373.5	14,571.1
	Change, %		*(1.1)*	*(0.9)*	*(9.3)*	*(9.5)*	*5.4*	*2.8*	*15.7*	*21.2*	*19.4*	*1.4*
	Cobalt	68,800.0	64,250.0	61,250.0	60,550.0	60,750.0	55,850.0	29,500.0	32,734.0	28,444.4	25,480.1	54,302.0
	Change, %		*7.1*	*12.3*	*13.6*	*13.3*	*23.2*	*133.2*	*110.2*	*141.9*	*170.0*	*26.7*
	HR Coil	611.0	611.0	611.0	605.0	621.0	613.0	510.0	633.0	461.5	519.3	618.2
	Change, %		*0.0*	*0.0*	*1.0*	*(1.6)*	*(0.3)*	*19.8*	*(3.5)*	*32.4*	*17.7*	*(1.2)*
	Scrap	349.0	360.0	343.0	330.0	372.0	350.0	270.0	302.0	252.9	275.7	343.5
	Change, %		*(3.1)*	*1.7*	*5.8*	*(6.2)*	*(0.3)*	*29.3*	*15.6*	*38.0*	*26.6*	*1.6*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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SK증권

Refining Price Data

Daily Price		11/28	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	58.0	58.1	56.8	54.4	46.4	49.7	45.2	53.7	48.8	43.4	50.2
	Change, %		*(0.2)*	*2.0*	*6.6*	*24.9*	*16.8*	*28.2*	*7.9*	*18.9*	*33.7*	*15.5*
	Dubai	61.3	61.5	60.5	58.3	50.1	50.5	44.7	53.8	50.8	41.3	52.3
	Change, %		*(0.4)*	*1.3*	*5.0*	*22.3*	*21.3*	*37.2*	*13.8*	*20.6*	*48.3*	*17.2*
Crude Oil Product	**Gasoline(휘발유)**	76.6	76.0	75.2	72.7	67.8	64.9	60.0	69.8	69.5	56.3	67.3
	Change, %		*0.7*	*1.8*	*5.3*	*13.0*	*18.0*	*27.7*	*9.6*	*10.1*	*36.1*	*13.8*
	Kerosene(등유)	75.0	75.1	74.5	71.3	63.5	61.7	58.0	66.4	64.7	52.9	64.2
	Change, %		*(0.1)*	*0.6*	*5.1*	*18.1*	*21.6*	*29.3*	*12.9*	*15.8*	*41.8*	*16.7*
	Diesel(경유)	74.7	74.4	74.3	71.2	63.5	61.3	56.9	65.5	64.8	52.1	64.7
	Change, %		*0.3*	*0.5*	*4.9*	*17.5*	*21.7*	*31.2*	*14.0*	*15.2*	*43.2*	*15.4*
	Bunker-C	56.4	56.8	56.2	55.3	47.3	47.1	44.5	52.1	45.3	35.5	49.0
	Change, %		*(0.8)*	*0.3*	*1.9*	*19.3*	*19.9*	*26.7*	*8.3*	*24.6*	*58.7*	*15.2*
	Naphtha	65.5	65.5	63.6	61.4	51.2	48.1	46.9	53.5	52.6	42.6	52.6
	Change, %		*(0.0)*	*2.9*	*6.6*	*27.8*	*36.1*	*39.6*	*22.5*	*24.5*	*53.7*	*24.4*
Dubai Spread	**Gasoline(휘발유)**	15.3	14.5	14.7	14.4	17.7	14.4	15.3	16.0	18.7	14.9	15.0
	Change		*0.8*	*0.6*	*0.9*	*(2.3)*	*0.9*	*(0.0)*	*(0.7)*	*(3.4)*	*0.4*	*0.3*
	Kerosene(등유)	13.7	13.6	14.0	13.0	13.4	11.2	13.3	12.6	14.0	11.6	12.0
	Change		*0.2*	*(0.3)*	*0.7*	*0.3*	*2.5*	*0.4*	*1.1*	*(0.2)*	*2.1*	*1.8*
	Diesel(경유)	13.4	12.9	13.8	12.8	13.4	10.9	12.3	11.7	14.0	10.8	12.4
	Change		*0.5*	*(0.4)*	*0.6*	*(0.0)*	*2.6*	*1.1*	*1.7*	*(0.6)*	*2.6*	*1.0*
	Bunker-C	(4.9)	(4.7)	(4.3)	(3.0)	(2.8)	(3.4)	(0.1)	(1.8)	(5.5)	(5.8)	(3.3)
	Change		*(0.2)*	*(0.6)*	*(1.9)*	*(2.0)*	*(1.4)*	*(4.7)*	*(3.1)*	*0.7*	*0.9*	*(1.5)*
	Naphtha	4.2	4.0	3.1	3.1	1.1	(2.4)	2.2	(0.4)	1.8	1.3	0.3
	Change		*0.2*	*1.1*	*1.1*	*3.1*	*6.6*	*2.0*	*4.6*	*2.4*	*2.9*	*3.9*
Refining Margin	**Simple(단순)**	2.9	2.7	3.2	3.4	4.2	2.5	5.1	3.8	3.3	1.9	3.2
	Change		*0.2*	*(0.3)*	*(0.6)*	*(1.3)*	*0.4*	*(2.2)*	*(0.9)*	*(0.4)*	*1.0*	*(0.3)*
	Complex(복합)	8.4	8.0	8.4	8.2	9.3	7.0	9.0	8.3	9.3	7.0	8.0
	Change		*0.4*	*(0.1)*	*0.1*	*(1.0)*	*1.4*	*(0.6)*	*0.1*	*(0.9)*	*1.4*	*0.4*
	Complex(lagging)	13.4	13.3	13.4	11.0	10.1	7.4	5.2	18.0	7.3	8.5	8.8
	Change		*0.1*	*(0.0)*	*2.4*	*3.3*	*6.0*	*8.2*	*(4.6)*	*6.1*	*4.9*	*4.6*

자료 : Petronet, SK증권

참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음

참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

SK Energy Daily

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SK증권

Petrochemical Price Data

Daily Price			11/28	11/27	11/24	11/23	11/22	11/21	11/20	11/17	11/16	11/15
Spot Price	**Naphtha**	CFR Japan	598.0	596.5	598.0	591.3	596.0	589.0	586.8	584.9	584.3	581.0
	Ethylene	CFR SE Asia	1,175.0	1,175.0	1,175.0	1,160.0	1,155.0	1,155.0	1,155.0	1,155.0	1,160.0	1,160.0
	Propylene	FOB Korea	901.0	899.0	892.0	892.0	890.0	880.0	878.0	877.0	877.0	875.0
	Butadiene	FOB Korea	1,010.0	1,000.0	1,000.0	1,000.0	980.0	980.0	980.0	980.0	980.0	945.0
	HDPE	CFR FE Asia	1,300.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,260.0	1,260.0	1,260.0	1,260.0
	LDPE	CFR FE Asia	1,250.0	1,245.0	1,245.0	1,245.0	1,245.0	1,230.0	1,250.0	1,250.0	1,250.0	1,250.0
	LLDPE	CFR FE Asia	1,180.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,190.0	1,190.0	1,190.0	1,190.0
	MEG	CFR China	910.0	905.0	913.0	903.0	900.0	887.0	895.0	890.0	880.0	890.0
	PP	CFR FE Asia	1,115.0	1,115.0	1,120.0	1,120.0	1,120.0	1,120.0	1,130.0	1,120.0	1,115.0	1,120.0
	PX	CFR China	883.7	885.7	890.7	893.7	893.7	882.5	885.0	880.0	878.5	879.0
	PTA	CFR China	700.0	700.0	700.0	695.0	695.0	695.0	695.0	695.0	700.0	700.0
	Benzene	FOB Korea	893.5	879.5	876.5	869.0	864.0	847.0	850.0	836.0	834.0	834.0
	Toluene	FOB Korea	707.5	702.5	696.5	691.5	683.5	677.5	679.5	679.0	679.0	677.0
	Xylene	FOB Korea	702.0	699.0	697.0	690.5	690.5	678.5	682.5	678.0	683.0	681.0
	SM	FOB Korea	1,297.0	1,284.0	1,293.0	1,276.5	1,274.5	1,249.5	1,245.5	1,243.5	1,223.5	1,231.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	**Naphtha**	CFR Japan	595.5	574.5	554.5	474.0	456.5	441.0	484.5	493.0	399.5	484.4
	Change, %			*3.7*	*7.4*	*25.6*	*30.4*	*35.0*	*22.9*	*20.8*	*49.1*	*22.9*
	Ethylene	CFR SE Asia	1,195.0	1,165.0	1,130.0	1,185.0	975.0	925.0	990.0	1,103.7	1,040.9	1,076.4
	Change, %			*2.6*	*5.8*	*0.8*	*22.6*	*29.2*	*20.7*	*8.3*	*14.8*	*11.0*
	Propylene	CFR SE Asia	835.0	810.0	807.5	790.0	762.5	685.0	815.0	770.0	705.7	878.5
	Change, %			*3.1*	*3.4*	*5.7*	*9.5*	*21.9*	*2.5*	*8.4*	*18.3*	*(5.0)*
	Butadiene	CFR SE Asia	1,025.0	965.0	1,050.0	1,325.0	900.0	1,470.0	2,100.0	877.5	1,116.8	1,517.4
	Change, %			*6.2*	*(2.4)*	*(22.6)*	*13.9*	*(30.3)*	*(51.2)*	*16.8*	*(8.2)*	*(32.5)*
	Benzene	CFR SE Asia	877.5	860.0	810.0	795.0	742.5	732.5	822.5	690.0	646.7	833.0
	Change, %			*2.0*	*8.3*	*10.4*	*18.2*	*19.8*	*6.7*	*27.2*	*35.7*	*5.3*
	Toluene	CFR SE Asia	715.0	715.0	690.0	655.0	635.0	662.5	690.0	700.8	630.5	686.4
	Change, %			*0.0*	*3.6*	*9.2*	*12.6*	*7.9*	*3.6*	*2.0*	*13.4*	*4.2*
	Xylene	CFR SE Asia	695.0	670.0	655.0	627.5	622.5	655.0	675.0	699.3	627.7	664.9
	Change, %			*3.7*	*6.1*	*10.8*	*11.6*	*6.1*	*3.0*	*(0.6)*	*10.7*	*4.5*
Spread	**Ethylene**	-Naphtha	599.5	590.5	575.5	711.0	518.5	484.0	505.5	610.6	641.4	592.0
	Change, %			*1.5*	*4.2*	*(15.7)*	*15.6*	*23.9*	*18.6*	*(1.8)*	*(6.5)*	*1.3*
	Propylene	-Naphtha	239.5	235.5	253.0	316.0	306.0	244.0	330.5	277.0	306.2	394.1
	Change, %			*1.7*	*(5.3)*	*(24.2)*	*(21.7)*	*(1.8)*	*(27.5)*	*(13.5)*	*(21.8)*	*(39.2)*
	Butadiene	-Naphtha	429.5	390.5	495.5	851.0	443.5	1,029.0	1,615.5	384.5	717.3	1,033.0
	Change, %			*10.0*	*(13.3)*	*(49.5)*	*(3.2)*	*(58.3)*	*(73.4)*	*11.7*	*(40.1)*	*(58.4)*
	Benzene	-Naphtha	282.0	285.5	255.5	321.0	286.0	291.5	338.0	197.0	247.2	348.5
	Change, %			*(1.2)*	*10.4*	*(12.1)*	*(1.4)*	*(3.3)*	*(16.6)*	*43.2*	*14.1*	*(19.1)*
	Toluene	-Naphtha	119.5	140.5	135.5	181.0	178.5	221.5	205.5	207.8	231.0	202.0
	Change, %			*(14.9)*	*(11.8)*	*(34.0)*	*(33.1)*	*(46.0)*	*(41.8)*	*(42.5)*	*(48.3)*	*(40.8)*
	Xylene	-Naphtha	99.5	95.5	100.5	153.5	166.0	214.0	190.5	206.3	228.2	180.5
	Change, %			*4.2*	*(1.0)*	*(35.2)*	*(40.1)*	*(53.5)*	*(47.8)*	*(51.8)*	*(56.4)*	*(44.9)*

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

SK Energy Daily

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	HDPE	CFR SE Asia	1,207.5	1,197.5	1,197.5	1,107.5	1,057.5	1,150.0	1,142.5	1,230.1	1,134.6	1,136.9
	Change, %			0.8	0.8	9.0	14.2	5.0	5.7	(1.8)	6.4	6.2
	MEG	CFR SE Asia	910.0	892.5	907.5	902.5	872.5	735.0	847.5	780.8	660.8	845.3
	Change, %			2.0	0.3	0.8	4.3	23.8	7.4	16.5	37.7	7.7
	PVC	CFR SE Asia	850.0	850.0	890.0	920.0	860.0	960.0	920.0	820.8	823.4	903.0
	Change, %			0.0	(4.5)	(7.6)	(1.2)	(11.5)	(7.6)	3.6	3.2	(5.9)
	PP	CFR SE Asia	1,147.5	1,147.5	1,147.5	1,117.5	1,072.5	1,015.0	1,032.5	1,109.8	978.4	1,093.2
	Change, %			0.0	0.0	2.7	7.0	13.1	11.1	3.4	17.3	5.0
	2-EH	CFR Korea	1,020.0	990.0	1,000.0	990.0	970.0	840.0	865.0	930.1	772.4	962.6
	Change, %			3.0	2.0	3.0	5.2	21.4	17.9	9.7	32.1	6.0
	ABS	CFR SE Asia	1,960.0	1,930.0	1,920.0	1,895.0	1,820.0	1,580.0	1,635.0	1,431.1	1,347.1	1,825.7
	Change, %			1.6	2.1	3.4	7.7	24.1	19.9	37.0	45.5	7.4
	SBR	CFR SE Asia	1,610.0	1,590.0	1,700.0	1,650.0	1,490.0	1,790.0	2,000.0	1,332.1	1,483.0	2,010.7
	Change, %			1.3	(5.3)	(2.4)	8.1	(10.1)	(19.5)	20.9	8.6	(19.9)
	SM	CFR SE Asia	1,305.0	1,280.0	1,210.0	1,242.5	1,172.5	1,190.0	1,205.0	1,100.7	1,064.6	1,245.3
	Change, %			2.0	7.9	5.0	11.3	9.7	8.3	18.6	22.6	4.8
	Caustic	FOB NEA	700.0	700.0	598.0	471.0	462.5	390.0	422.5	296.8	316.6	474.5
	Change, %			0.0	17.1	48.6	51.4	79.5	65.7	135.9	121.1	47.5
	PX	CFR SE Asia	900.0	892.5	842.5	817.5	817.5	797.5	855.0	842.9	790.4	838.9
	Change, %			0.8	6.8	10.1	10.1	12.9	5.3	6.8	13.9	7.3
	PO	CFR China	1,677.5	1,782.5	1,685.0	1,992.5	1,540.0	1,430.0	1,562.5	1,683.4	1,396.8	1,576.8
	Change, %			(5.9)	(0.4)	(15.8)	8.9	17.3	7.4	(0.3)	20.1	6.4
	Caprolactam	CFR SE Asia	2,020.0	2,040.0	2,170.0	1,770.0	1,730.0	1,460.0	1,850.0	1,581.5	1,344.9	1,921.4
	Change, %			(1.0)	(6.9)	14.1	16.8	38.4	9.2	27.7	50.2	5.1
	PTA	CFR SE Asia	712.5	707.5	667.5	657.5	667.5	620.0	642.5	648.0	613.7	662.7
	Change, %			0.7	6.7	8.4	6.7	14.9	10.9	10.0	16.1	7.5
Spread	HDPE		612.0	623.0	643.0	633.5	601.0	709.0	658.0	737.1	735.1	652.4
	Change, %			(1.8)	(4.8)	(3.4)	1.8	(13.7)	(7.0)	(17.0)	(16.7)	(6.2)
	MEG		314.5	318.0	353.0	428.5	416.0	294.0	363.0	287.8	261.3	360.8
	Change, %			(1.1)	(10.9)	(26.6)	(24.4)	7.0	(13.4)	9.3	20.4	(12.8)
	PVC		254.5	275.5	335.5	446.0	403.5	519.0	435.5	327.8	423.9	418.6
	Change, %			(7.6)	(24.1)	(42.9)	(36.9)	(51.0)	(41.6)	(22.4)	(40.0)	(39.2)
	PP		552.0	573.0	593.0	643.5	616.0	574.0	548.0	616.8	578.9	608.8
	Change, %			(3.7)	(6.9)	(14.2)	(10.4)	(3.8)	0.7	(10.5)	(4.7)	(9.3)
	2-EH		424.5	415.5	445.5	516.0	513.5	399.0	380.5	437.0	372.9	478.1
	Change, %			2.2	(4.7)	(17.7)	(17.3)	6.4	11.6	(2.9)	13.8	(11.2)
	ABS		1,364.5	1,355.5	1,365.5	1,421.0	1,363.5	1,139.0	1,150.5	938.1	947.6	1,341.3
	Change, %			0.7	(0.1)	(4.0)	0.1	19.8	18.6	45.5	44.0	1.7
	SBR	BD spread	585.0	625.0	650.0	325.0	590.0	320.0	(100.0)	454.7	366.2	493.3
	Change, %			(6.4)	(10.0)	80.0	(0.8)	82.8	(685.0)	28.7	59.8	18.6
	SM		709.5	705.5	655.5	768.5	716.0	749.0	720.5	607.7	665.1	760.8
	Change, %			0.6	8.2	(7.7)	(0.9)	(5.3)	(1.5)	16.8	6.7	(6.7)
	Caustic											
	Change, %											
	PX		304.5	318.0	288.0	343.5	361.0	356.5	370.5	349.9	390.9	354.5
	Change, %			(4.2)	5.7	(11.4)	(15.7)	(14.6)	(17.8)	(13.0)	(22.1)	(14.1)
	PO	propylene sprea	842.5	972.5	877.5	1,202.5	777.5	745.0	747.5	913.4	691.1	698.3
	Change, %			(13.4)	(4.0)	(29.9)	8.4	13.1	12.7	(7.8)	21.9	20.7
	Caprolactam	benzene spreac	1,142.5	1,180.0	1,360.0	975.0	987.5	727.5	1,027.5	891.6	698.2	1,088.4
	Change, %			(3.2)	(16.0)	17.2	15.7	57.0	11.2	28.1	63.6	5.0
	PTA	px spread	82.5	82.8	77.8	85.3	95.3	61.8	44.0	58.0	60.4	75.4
	Change, %			(0.3)	6.1	(3.2)	(13.4)	33.6	87.5	42.2	36.5	9.4

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	11/28	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
Petrochemical																
DowDuPont	USD	71.1	1.4	(0.2)	(2.0)	9.9	16.4	30.9	24.2	166,350	21.4	17.7	1.6	1.8	11.8	10.1
Eastman	USD	91.7	0.9	0.7	(1.4)	7.3	14.7	23.7	21.9	13,179	13.0	11.3	2.6	2.4	9.3	8.6
BASF	EUR	94.3	0.7	0.6	0.5	15.0	12.5	19.8	6.8	102,831	15.4	15.3	2.5	2.4	8.2	8.0
Akzo Nobel	EUR	75.5	(2.0)	(3.1)	(2.6)	(2.8)	(0.9)	29.7	27.1	22,572	18.4	17.6	3.2	3.1	10.0	9.6
Arkema	EUR	102.0	0.0	(4.4)	(5.6)	10.4	8.3	16.0	9.7	9,182	14.4	13.3	1.9	1.8	6.6	6.3
Lanxess	EUR	62.8	1.4	(3.0)	(8.0)	(3.1)	(0.8)	9.4	0.7	6,818	16.3	14.5	2.2	2.0	7.2	8.0
Sumitomo Chemical	JPY	795	0.4	(2.3)	(1.1)	20.6	35.4	50.9	43.0	11,830	10.2	10.1	1.4	1.3	7.5	7.4
Mitsubishi Chemical	JPY	1,180	0.6	(0.6)	(0.8)	15.6	42.8	64.9	55.7	15,977	9.3	9.1	1.4	1.2	6.4	6.3
Shin-Etsu Chemical	JPY	12,420	(1.4)	(0.7)	9.3	29.3	26.1	52.0	37.0	48,241	23.6	20.5	2.3	2.1	10.7	9.2
Asahi Kasei	JPY	1,377	(1.3)	(2.3)	(1.3)	8.7	31.2	36.7	35.1	17,361	14.6	14.4	1.5	1.4	7.4	7.1
JSR	JPY	2,150	(0.6)	(1.1)	(3.0)	1.0	14.9	31.8	16.7	4,370	14.8	14.3	1.2	1.2	8.0	7.5
Nitto Denko	JPY	10,685	(2.3)	(3.6)	5.0	11.5	19.7	34.3	19.1	16,689	19.5	17.6	2.5	2.2	8.9	8.2
SABIC	SAR	100.5	0.2	1.4	1.9	1.5	3.2	10.6	9.8	80,386	15.0	14.2	1.8	1.7	7.6	7.3
Yansab	SAR	59.2	2.1	8.9	7.3	4.8	8.7	20.4	8.7	8,879	14.8	13.8	2.3	2.2	9.3	9.0
Formosa Plastics	TWD	93.4	0.1	1.4	1.6	(1.2)	3.9	5.2	4.7	19,816	13.5	14.2	1.8	1.8	19.3	19.3
Formosa Fiber	TWD	93.6	(1.4)	0.1	1.7	(0.6)	2.6	(4.5)	(2.8)	18,284	11.9	12.8	1.7	1.6	10.3	10.6
Nan Ya Plastics	TWD	75.9	0.0	0.9	2.3	(0.1)	6.3	13.3	6.6	20,062	14.6	15.0	1.7	1.7	15.3	15.7
Sinopec Shanghai	CNY	6.36	(1.2)	(3.0)	1.0	(1.9)	(3.6)	2.7	(1.2)	9,111	12.2	11.6	2.4	2.2	6.7	6.6
Sinopec Yizheng(Fibe	CNY	2.97	0.3	(1.0)	(3.3)	(7.2)	(24.2)	(28.4)	(27.6)	5,752	#N/A N/A	55.0	5.7	5.7	28.0	14.6
Reliance	INR	943	(0.8)	1.2	1.5	20.4	41.1	91.2	74.3	95,223	17.4	14.9	1.9	1.7	12.0	9.7
Industries Qatar	QAR	91.0	(0.8)	(4.7)	(4.2)	(1.2)	(13.3)	(12.6)	(22.6)	14,820	15.7	13.2	1.6	1.5	52.0	49.3
PTT Chemical	THB	78.5	0.3	0.0	(3.1)	3.3	7.5	25.1	24.6	10,846	10.0	10.3	1.4	1.3	5.4	5.3
Petronas	MYR	7.4	1.0	2.1	0.0	2.6	(0.3)	8.7	5.7	14,395	15.0	15.2	2.0	1.9	8.6	8.6
LG화학	KRW	420,500	0.2	1.8	3.7	13.8	38.1	87.3	61.1	27,414	15.6	14.8	2.0	1.8	6.9	6.5
롯데케미칼	KRW	355,000	2.2	0.9	(8.5)	(9.7)	(5.6)	9.7	(3.8)	11,237	5.3	5.2	1.1	0.9	3.6	3.2
한화케미칼	KRW	29,750	(0.5)	(1.0)	(6.4)	(15.0)	1.7	27.1	20.4	4,528	4.9	5.3	0.8	0.7	6.5	6.4
금호석유	KRW	86,500	5.4	16.1	26.1	9.1	5.4	16.0	5.5	2,434	15.0	13.9	1.6	1.4	10.4	9.3
SKC	KRW	42,400	(0.8)	(1.3)	4.2	14.4	35.5	37.2	28.5	1,470	11.1	10.0	1.0	1.0	9.6	8.3
국도화학	KRW	69,000	0.4	13.1	17.1	27.8	36.6	29.7	25.7	370	0.0	0.0	0.0	0.0	0.0	0.0
효성	KRW	8,010	2.7	10.8	(4.4)	15.3	18.3	55.5	17.8	4,395	8.0	7.9	1.2	1.1	7.2	6.4
Average			**0.2**	**0.9**	**0.9**	**6.7**	**12.7**	**26.5**	**17.8**							
Refinery																
Valero	USD	83.2	1.4	(0.7)	7.1	21.7	33.3	30.5	21.8	36,424	16.7	13.2	1.8	1.8	7.2	6.3
Conoco Phillips	USD	50.1	2.0	0.2	(2.1)	16.4	10.5	10.2	(0.0)	59,931	93.5	33.4	2.0	2.0	8.6	6.6
Formosa Petrochemic	TWD	106.0	(0.9)	(0.9)	1.0	0.5	0.0	1.4	(5.4)	33,654	14.5	18.0	3.1	3.1	9.7	11.4
Andeavor	USD	105.5	1.8	0.1	(0.3)	7.0	26.4	25.0	20.6	16,451	14.7	12.6	1.7	1.7	8.8	7.0
Marathon Petroleum	USD	62.2	0.5	(0.1)	6.4	18.5	17.8	32.2	23.6	30,389	16.5	14.7	2.5	2.4	8.2	7.4
Devon Energy	USD	37.2	1.0	(1.0)	3.6	20.2	3.8	(12.8)	(18.6)	19,533	20.8	16.8	2.7	2.4	9.0	7.9
Hollyfrontier	USD	45.3	1.1	1.0	24.8	43.8	82.7	63.2	38.2	8,023	19.9	16.7	1.6	1.6	8.9	7.7
Phillips 66	USD	94.1	1.3	0.5	2.2	12.4	21.4	11.8	8.8	47,659	20.6	15.0	2.1	2.1	10.4	8.6
Murphy Oil	USD	28.1	1.2	1.2	10.0	23.6	11.1	(5.3)	(9.6)	4,854	#N/A N/A	188.8	1.1	1.1	5.2	4.6
JX Holdings	JPY	625.7	(2.1)	0.7	5.5	15.1	27.3	40.9	26.5	19,274	8.5	8.6	0.9	0.8	7.3	7.0
Idemitsu	JPY	3,685.0	(2.0)	1.2	12.2	36.7	14.3	41.1	18.7	6,890	7.9	7.6	1.0	0.9	7.4	7.1
Nesteoil	EUR	51.3	2.6	0.6	5.9	43.9	39.4	33.4	40.5	15,613	16.4	16.2	3.1	2.8	9.5	9.9
Ashland	USD	71.1	1.1	1.2	4.3	16.1	7.0	28.2	33.0	4,420	17.7	21.6	1.4	1.3	8.0	10.0
Fuchs Petrolub	EUR	44.5	(0.7)	(3.5)	(8.5)	(5.2)	(9.2)	18.9	11.6	7,008	23.5	22.0	4.6	4.1	13.7	12.9
SK이노베이션	KRW	206,500	0.2	3.8	0.2	12.5	23.3	33.7	41.0	17,634	8.2	7.8	1.0	1.0	5.0	4.5
S-Oil	KRW	119,500	(1.2)	0.4	(7.7)	(0.4)	17.2	38.8	41.1	12,425	11.8	9.1	2.1	1.8	9.1	6.7
GS	KRW	60,500	(0.2)	0.3	(8.7)	(12.1)	(16.0)	9.2	11.8	5,192	5.8	5.5	0.7	0.7	6.8	6.4
Average			**0.4**	**0.3**	**3.3**	**15.9**	**18.2**	**23.6**	**17.9**							

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

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Global peers

	Currency	11/28	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	17E	18E	17E	18E	17E	18E
E&P/Shale																
Exxon Mobil	USD	82	0.7	1.0	(2.4)	6.8	0.1	(5.6)	(9.5)	346,044	22.7	20.1	1.9	1.9	9.8	8.9
BP	GBP	501	1.0	1.4	0.7	12.5	5.7	10.9	(1.6)	132,221	22.5	17.1	1.4	1.4	6.5	5.9
Shell	EUR	2,408	4.0	3.3	3.5	12.4	13.7	21.0	7.4	268,117	17.3	15.7	1.4	1.3	7.0	6.5
Chevron	USD	116	0.7	1.1	2.6	8.1	11.2	5.4	(1.1)	221,182	28.8	22.7	1.5	1.5	8.3	7.2
Total	EUR	48	0.5	1.2	0.5	10.1	0.2	7.9	(2.5)	142,596	13.6	13.1	1.3	1.2	6.3	5.6
Sinopec	CNY	6	(2.6)	0.3	2.6	(0.8)	(2.0)	17.1	11.3	105,590	13.8	12.8	1.0	1.0	4.5	4.3
Petrochina	CNY	8	(1.6)	(0.1)	1.0	0.1	5.3	7.0	3.3	215,747	52.3	32.1	1.2	1.2	6.6	6.2
CNOOC	CNY	11	0.9	(2.1)	(0.9)	(3.3)	(10.5)	(17.9)	(14.3)	60,539	13.0	11.2	1.0	1.0	4.1	3.9
Gazprom	RUB	135	1.3	2.0	7.3	13.8	10.6	(9.2)	(12.5)	54,824	4.6	4.2	0.3	0.3	3.8	3.5
Rosneft	RUB	301	0.5	0.5	(6.4)	0.1	(0.9)	(10.5)	(25.2)	54,704	10.4	7.1	0.8	0.7	5.5	4.6
Anadarko	USD	48	0.2	(0.5)	(2.1)	15.7	(7.9)	(23.0)	(31.5)	26,138	#N/A N/A	#N/A N/A	1.9	1.8	7.5	6.5
Petrobras	BRL	16	(0.2)	(0.4)	(7.0)	14.2	15.8	2.5	6.5	65,422	13.9	9.6	0.6	0.6	5.1	4.7
Lukoil	USD	3,343	(0.7)	0.7	9.1	14.5	19.5	6.3	(3.1)	48,312	6.9	6.5	0.7	0.7	N/A	N/A
Kinder	USD	17	0.4	0.9	(5.5)	(10.4)	(11.5)	(20.5)	(17.8)	47,497	26.4	24.4	1.1	1.1	10.9	10.5
Statoil	NOK	166	1.1	(0.1)	1.7	14.3	11.2	15.3	5.1	66,922	16.1	17.0	1.7	1.7	3.5	3.4
BHP	AUD	27	(2.0)	0.6	3.0	1.8	14.0	6.1	9.3	105,766	14.7	16.9	1.8	1.8	5.9	6.4
PTT E&P	THB	94	(0.3)	0.8	9.4	9.0	1.1	14.0	(2.9)	11,401	14.9	13.0	0.9	0.9	3.5	3.2
Petronas gas	MYR	16	(0.4)	(4.7)	(9.7)	(12.3)	(13.8)	(23.6)	(23.3)	7,883	18.2	17.1	2.6	2.5	10.4	9.7
Chesapeake	USD	4	1.6	1.6	2.7	6.0	(26.8)	(39.0)	(44.9)	3,517	5.5	5.6	#N/A N/A	#N/A N/A	7.5	6.5
Noble Energy	USD	26	1.2	1.1	(7.5)	10.4	(12.2)	(25.9)	(32.1)	12,579	#N/A N/A	738.6	1.3	1.3	7.7	7.1
Average		**0**	**0.3**	**0.4**	**0.1**	**6.2**	**1.1**	**(3.1)**	**(9.0)**							
PV																
WACKER	EUR	140.0	0.1	(1.4)	7.3	32.7	44.8	71.0	41.6	8,667	31.4	23.3	2.2	2.1	7.8	7.3
GCL-Poly	HKD	1.3	3.9	(7.7)	(1.5)	50.0	53.5	28.2	41.9	3,145	9.2	8.7	0.9	0.8	6.6	6.1
SunPower	USD	8.6	4.7	9.1	22.8	(5.2)	8.6	21.0	30.6	1,205	#N/A N/A	#N/A N/A	1.6	1.6	17.8	12.5
Canadian Solar	USD	18.4	0.9	1.5	8.6	19.4	38.7	59.5	50.8	1,066	12.3	9.7	1.0	0.9	9.9	10.9
JA Solar	USD	7.3	(0.4)	(1.9)	(1.2)	14.9	6.1	33.8	54.0	349	8.1	13.8	1.7	1.7	4.1	3.9
Yingli	USD	2.2	0.7	0.5	(4.8)	(19.1)	(2.3)	(32.7)	(16.9)	39	#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	62.1	0.8	3.1	7.7	29.4	68.6	99.7	93.6	6,488	24.9	51.2	1.0	1.2	11.7	12.6
한화큐셀	USD	7.7	(0.4)	(2.1)	(2.4)	3.5	9.2	(11.9)	(5.1)	644	40.7	35.2	#N/A N/A	#N/A N/A	8.9	8.3
OCI	KRW	123,000	(6.1)	(3.9)	9.3	27.9	36.1	65.8	56.3	2,709	14.0	15.3	0.9	0.8	7.6	6.4
웅진에너지	KRW	9,270	(4.4)	(2.5)	16.5	9.4	36.3	119.4	95.8	215	N/A	0.9	0.8	7.6	6.4	8.0
신성솔라에너지	KRW	2,040	0.2	4.1	17.2	(4.2)	0.2	9.7	(7.7)	326	N/A	0.8	7.6	6.4	8.0	7.9
Average			**0.0**	**(0.1)**	**7.2**	**14.4**	**27.3**	**42.1**	**39.5**							
Gas Company																
Towngas China	HKD	6.2	(1.3)	(2.4)	(0.2)	19.3	28.2	54.9	51.5	2,193	14.3	12.9	1.1	1.1	12.8	11.7
Kulun	HKD	6.7	0.4	4.4	(8.2)	(5.9)	(5.8)	17.1	15.5	6,931	10.6	9.7	1.2	1.1	5.6	5.5
Beijing Enterprise	HKD	45.1	0.4	2.0	(4.6)	9.7	23.9	22.9	22.9	7,287	8.6	8.0	0.9	0.8	15.8	13.7
ENN Energy	HKD	58.6	1.5	0.3	3.7	17.8	41.7	70.3	83.7	8,131	15.6	13.6	3.0	2.6	9.4	8.4
China Resources Gas	HKD	28.9	3.0	3.6	0.2	6.5	16.8	22.0	32.3	8,223	16.5	14.7	3.1	2.7	9.7	8.8
China Gas Holdings	HKD	22.3	(3.5)	(1.8)	(5.7)	17.6	87.0	106.0	111.5	14,168	18.4	15.3	4.4	3.6	14.5	12.2
Shenzen Gas	HKD	14.3	(1.9)	(1.7)	(4.2)	(1.7)	13.7	25.4	26.5	3,718	11.7	11.2	1.3	1.2	8.9	8.3
Shann Xi	CNY	7.9	0.8	(1.1)	(4.9)	(8.7)	(6.2)	(23.0)	(17.5)	1,333	16.7	15.0	1.6	1.5	#N/A N/A	#N/A N/A
Suntien	HKD	2.0	(1.5)	0.0	(14.5)	16.8	28.3	84.0	95.0	928	7.3	6.3	0.7	0.6	9.8	8.4
China Oil & Gas	HKD	0.5	(1.8)	1.9	1.9	(1.8)	(5.3)	(10.0)	(11.5)	403	8.9	7.5	0.9	0.8	6.2	5.6
Average			**(0.4)**	**0.5**	**(3.6)**	**7.0**	**22.2**	**37.0**	**41.0**							
EV																
LG화학	KRW	420,500	0.2	1.8	3.7	13.8	38.1	87.3	61.1	27,414	14.6	14.1	2.0	1.8	7.0	6.7
삼성SDI	KRW	220,000	(1.1)	0.7	12.8	17.6	37.9	140.4	101.8	13,971	22.3	13.8	1.3	1.2	25.0	15.8
Panasonic	JPY	1670.0	(1.4)	(1.9)	(2.0)	15.2	20.3	51.5	40.4	36,823	21.8	16.6	2.3	2.1	7.1	6.2
GS Yuasa	JPY	572.0	(0.7)	(2.7)	(4.8)	7.5	12.8	20.7	17.7	2,126	17.3	15.7	1.4	1.3	7.8	7.2
NEC	JPY	2924.0	0.4	1.1	(6.6)	0.5	1.5	(2.2)	(5.7)	6,846	15.3	16.9	0.9	0.8	7.0	6.6
BYD Auto	CNY	64.7	1.7	(10.5)	(0.6)	31.2	31.8	16.4	30.3	26,294	37.8	26.8	3.2	2.9	16.0	12.9
Tesla Motors	USD	317.6	0.2	(0.1)	(1.0)	(8.1)	(2.3)	61.9	48.6	53,370	#N/A N/A	#N/A N/A	11.2	11.2	132.1	31.6
Kandi Technologies	USD	7.4	(0.7)	(3.3)	7.3	86.1	72.9	45.5	50.0	353	#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			**(0.2)**	**(1.9)**	**1.1**	**20.5**	**26.6**	**52.7**	**43.0**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임