SK Energy Daily

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SK 증권

1. News Summary (3 page)

2017년 11월 8일

News		Conclusion
WTI comment	차익실현 매물에 숨고르기…WTI 0.3%↓	
Headline	당진 석탄화력 1·2호기 LNG발전소로 바꾼다	석탄 대비 LNG 발전 비용이 높아 한국전력 요금 기저가 올라갈 수 있음
News 1.	KOGAS, 예멘 LNG 플랜트 사업 '답보'… 주주대여금 지급 연기	내전 종료가 가시권에 들어오기 전까지는 지급 연기가 지속될 전망
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	57.2	(0.3)	5.2	12.3	16.3	27.2
Dubai	$/bbl	62.4	3.0	7.0	15.4	21.8	45.5
Gasoline	$/bbl	77.5	2.2	6.5	12.4	14.5	34.0
Diesel	$/bbl	73.6	2.5	3.4	9.8	15.4	30.5
Complex margin	$/bbl	7.6	(0.2)	(0.7)	(0.5)	(0.8)	(1.5)
1M lagging	$/bbl	15.6	1.2	4.6	6.5	3.0	13.7
Petrochemical			%	%	%	%	%
Naphtha	$/t	587	(0.1)	4.1	12.7	26.5	39.8
Butadiene	$/t	945	0.0	(0.5)	(27.3)	3.8	(31.8)
HDPE	$/t	1,250	0.8	0.8	7.3	11.6	6.8
MEG	$/t	915	0.5	1.9	3.6	4.0	31.8
PX	$/t	887	1.1	5.5	6.7	8.5	15.6
SM	$/t	1,228	3.3	5.9	1.5	10.6	13.4
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	3.15	0.6	8.8	2.6	2.0	0.9
Natural rubber	$/t	1,430	(1.4)	2.9	0.7	(3.4)	(8.9)
Cotton	C/lbs	68.1	(1.1)	(0.5)	(1.3)	(5.3)	(1.0)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	11/06	$/t	1,130	(3.8)	(10.0)	15.9	13.6
Propylene	11/06	$/t	808	1.6	(3.3)	5.9	17.5
Benzene	11/06	$/t	810	0.9	0.6	9.1	23.7
Toluene	11/06	$/t	690	(0.7)	(1.4)	8.7	4.5
Xylene	11/06	$/t	655	0.4	(0.4)	5.2	0.8
PP	11/06	$/t	1,148	(1.7)	(1.7)	7.0	11.4
PVC	11/06	$/t	890	(2.2)	(6.1)	3.5	(4.3)
ABS	11/06	$/t	1,920	(1.5)	(6.8)	5.5	31.5
SBR	11/06	$/t	1,700	(2.9)	(6.6)	14.1	(10.5)
SM	11/06	$/t	1,210	(0.6)	(10.4)	3.2	14.4
BPA	11/06	$/t	1,685	0.0	8.0	9.4	14.2
Caustic	11/06	$/t	598	8.7	23.6	29.3	63.8
2-EH	11/06	$/t	1,000	0.0	1.0	3.1	26.6
Caprolactam	11/06	$/t	2,170	4.8	18.6	25.4	52.3
Solar				%	%	%	%
Polysilicon	11/01	$/kg	16.7	0.0	0.1	8.7	18.5
Module	11/01	$/W	0.32	(0.3)	(0.9)	(3.1)	(20.2)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	83.6	(0.2)	0.3	2.3	4.3	(2.2)
Shell	EUR	2,450	(0.3)	3.6	6.6	11.5	19.2
Petrochina	CNY	8.59	2.5	3.9	7.5	4.9	17.8
Gazprom	RUB	132.3	5.1	5.1	7.1	10.7	(4.5)
Petrobras	BRL	16.5	(5.3)	(1.6)	5.2	21.8	(4.1)
Refinery							
Phillips66	USD	94.6	0.1	3.8	1.9	11.2	18.3
Valero	USD	81.8	0.5	3.7	6.0	20.3	39.8
JX	JPY	630.6	3.3	8.1	10.6	27.9	55.9
Neste Oil	EUR	49.0	0.0	2.4	29.1	40.3	28.8

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	96.3	(1.1)	2.4	7.1	18.0	23.0
DowDuPont	USD	71.1	1.3	(1.6)	(0.1)	11.4	32.6
SABIC	SAR	98.6	(1.8)	(0.7)	(3.0)	0.9	15.8
Formosa Pla.	TWD	92.7	1.0	0.9	0.8	(0.3)	8.4
Shin-Etsu	JPY	12,510	1.5	5.0	23.8	24.9	58.0
Renewable							
Wacker	EUR	138.5	(1.7)	3.4	20.2	30.1	72.2
First Solar	USD	60.96	(0.8)	11.2	26.4	25.5	80.6
GCL-Poly	HKD	1.40	(0.7)	4.5	23.9	55.6	34.6
Tesla Motors	USD	306.1	1.1	(7.7)	(14.2)	(13.8)	58.4

4. Coverage Summary

	11/07	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,545	(0.2)	0.9	6.3	7.5	11.0	28.4				* 추정치는 12M fwd 기준임	
KOSPI화학	6,107	(0.1)	1.9	7.2	8.1	14.1	21.9				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	409,000	0.0	1.4	4.3	23.0	46.1	67.3	매수	400,000	(2.2)	12.95	2.14
롯데케미칼	370,500	0.0	0.3	(2.0)	(2.5)	5.4	27.1	매수	410,000	10.7	5.83	1.28
한화케미칼	31,200	(1.4)	2.5	(3.9)	(6.9)	22.4	19.8	매수	39,000	25.0	5.26	0.87
금호석유화학	74,000	(2.1)	6.6	2.6	0.3	(1.9)	13.0	매수	100,000	35.1	12.54	1.37
KCC	412,500	1.9	5.8	10.1	0.2	19.0	10.0	매수	450,000	9.1	22.90	0.60
OCI	126,000	(0.8)	11.5	22.9	37.0	55.7	36.4	매수	120,000	(4.8)	16.00	0.96
SKC	39,800	(2.7)	0.1	(3.5)	6.0	38.0	44.5	매수	45,000	13.1	11.00	1.08
SK이노베이션	214,000	0.9	4.4	7.5	22.6	24.4	39.0	매수	210,000	(1.9)	8.63	1.14
S-Oil	128,000	0.4	(0.4)	0.4	9.9	25.5	55.7	매수	140,000	9.4	13.85	2.42
GS	68,000	3.3	2.7	3.7	(9.3)	15.1	26.4	매수	80,000	17.6	6.45	1.00
SK가스	95,700	2.1	2.2	1.5	(17.5)	(19.6)	(1.8)	매수	130,000	35.8	7.23	0.71
포스코대우	21,100	6.6	8.8	9.3	(10.2)	(11.0)	(10.4)	매수	25,000	18.5	11.82	0.92
LG상사	30,900	4.4	6.4	13.2	5.8	(4.3)	10.8	매수	38,000	23.0	11.25	1.00
한국전력	38,250	(1.2)	(2.4)	(1.9)	(13.4)	(16.5)	(19.2)	매수	55,000	43.8	7.33	0.31
한국가스공사	42,700	3.1	4.5	1.4	(15.3)	(6.5)	(8.0)	매수	60,000	40.5	8.72	0.55

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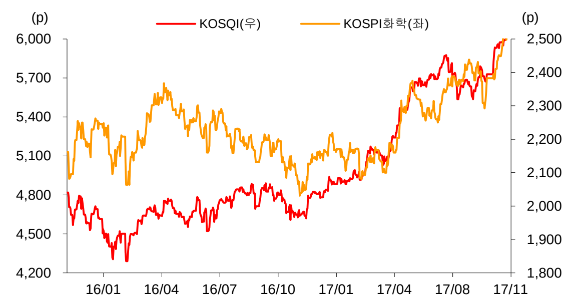
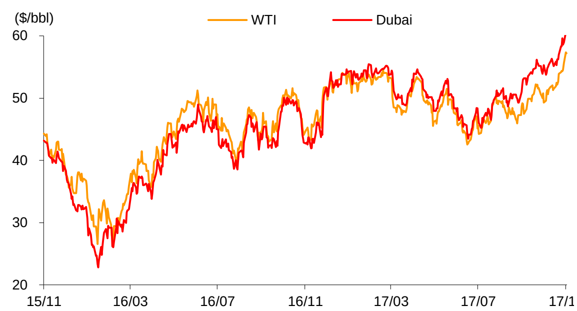
Key Chart

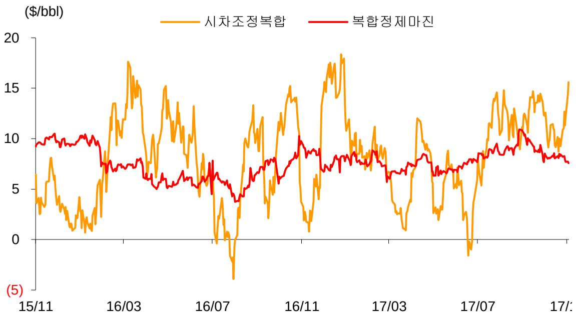
KOSPI/KOSPI화학



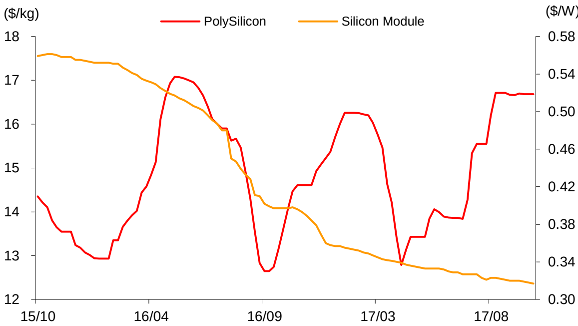
WTI/Dubai



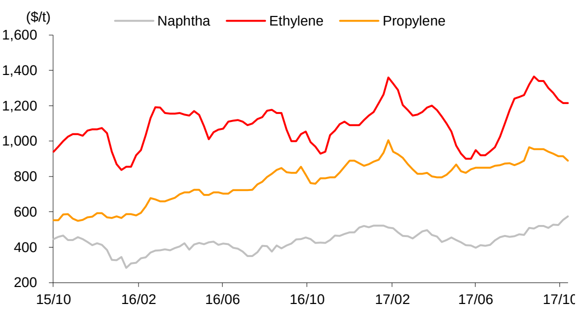
Complex & 1M lagging margin



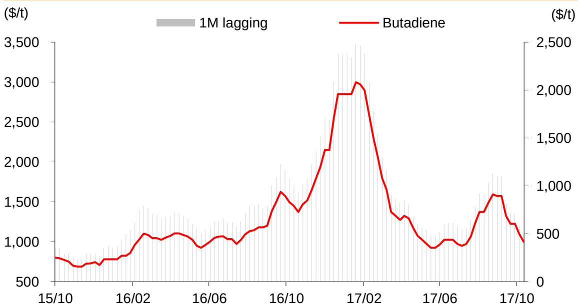
Polysilicon & Module prices



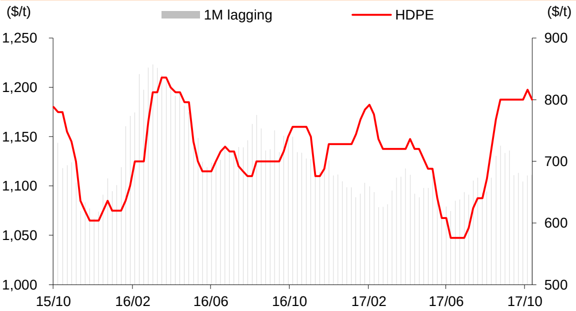
Naphtha/Ethylene/Propylene prices



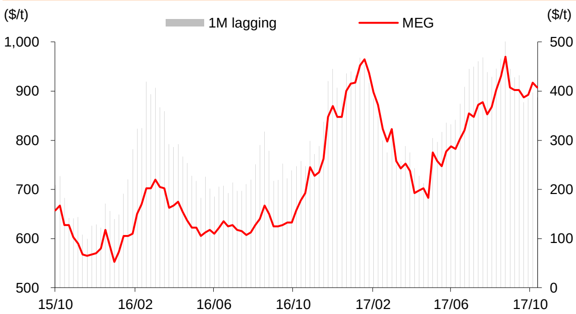
Butadiene price & 1M lagging naphtha spread



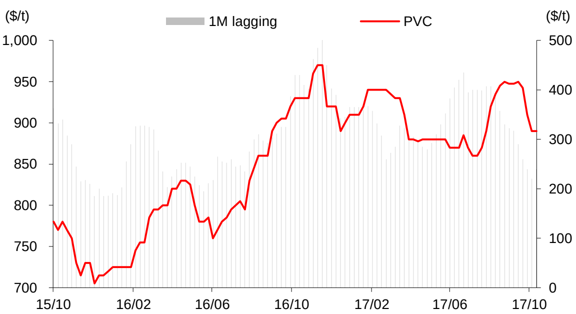
HDPE price & 1M lagging naphtha spread



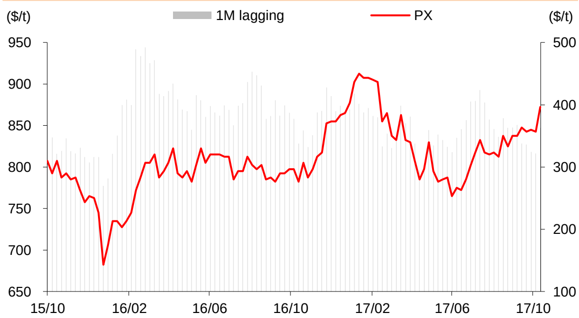
MEG price & 1M lagging naphtha spread



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	당진 석탄화력 1·2호기 LNG발전소로 바꾼다
결론	석탄 대비 LNG 발전 비용이 높아 한국전력 요금 기저가 올라갈 수 있음
세부	
1)	SK가스 등이 당진 에코파워 1·2호기를 LNG발전소로 전환하는 방안 추진
2)	정부의 탈석탄 정책으로 석탄발전소 건설이 중단된 데 따른 것
3)	SK가스, 한국동서발전, 산업은행은 산자부와 전환 방안 협의 중
4)	1160㎿로 허가받은 당진 에코파워 1·2호기 발전소 발전용량 증대를 요청
5)	석탄 대비 LNG 발전 비용이 높아 요금 기저가 올라갈 수 있음

WTI Comment	(출처: 연합뉴스)
제목	차익실현 매물에 숨고르기…WTI 0.3%↓
상승 요인	
하락 요인	단기적인 가격 급등으로 차익실현 매물이 나옴

Issue 1	(출처: 글로벌이코노믹)
제목	KOGAS, 예맨 LNG 플랜트 사업 '답보'… 주주대여금 지급 연기
결론	내전 종료가 가시권에 들어오기 전까지는 지급 연기가 지속될 전망
세부	
1)	예맨 내전이 장기화되면서 플랜트 가동이 멈췄고 주주대여금 지급 연기
2)	Total이 예맨 동부 Bal Half에 LNG 액화플랜트를 건설해 수출하는 사업
3)	해당 광구(Marib 광구)에 확인된 매장량은 약 2억t 수준으로 추정됨
4)	2009년부터 KOGAS는 이곳에서 천연가스 생산해 200만t/년 도입중
5)	내전 종료가 가시권에 들어오기 전까지는 지급 연기가 지속될 전망

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**	0.863	0.861	0.859	0.853	0.848	0.909	0.906	0.951	0.901	0.904	0.894
	Change, %		*0.2*	*0.5*	*1.2*	*1.8*	*(5.1)*	*(4.7)*	*(9.2)*	*(4.2)*	*(4.5)*	*(3.4)*
	USD/JPY	114.0	113.7	113.6	112.7	110.8	112.7	104.5	117.0	121.1	108.8	112.1
	Change, %		*0.3*	*0.3*	*1.2*	*2.9*	*1.2*	*9.1*	*(2.5)*	*(5.8)*	*4.8*	*1.7*
	USD/KRW	1,111.9	1,115.1	1,120.3	1,142.0	1,127.2	1,140.1	1,143.0	1,205.8	1,131.2	1,160.5	1,137.8
	Change, %		*(0.3)*	*(0.8)*	*(2.6)*	*(1.4)*	*(2.5)*	*(2.7)*	*(7.8)*	*(1.7)*	*(4.2)*	*(2.3)*
Agriculture	**Corn**	347.8	348.0	345.8	350.0	372.3	361.8	346.3	352.0	376.8	358.5	362.0
	Change, %		*(0.1)*	*0.6*	*(0.6)*	*(6.6)*	*(3.9)*	*0.4*	*(1.2)*	*(7.7)*	*(3.0)*	*(3.9)*
	Soybean	986.0	984.0	973.8	972.3	959.8	963.0	989.3	996.5	945.4	987.5	975.7
	Change, %		*0.2*	*1.3*	*1.4*	*2.7*	*2.4*	*(0.3)*	*(1.1)*	*4.3*	*(0.2)*	*1.1*
	Wheat	427.3	430.8	418.5	443.5	463.5	427.5	410.0	408.0	508.1	436.4	439.4
	Change, %		*(0.8)*	*2.1*	*(3.7)*	*(7.8)*	*(0.1)*	*4.2*	*4.7*	*(15.9)*	*(2.1)*	*(2.8)*
	Rice	11.2	11.2	11.3	11.9	12.0	9.6	9.6	9.4	11.1	10.3	10.9
	Change, %		*0.0*	*(0.4)*	*(5.4)*	*(6.7)*	*16.8*	*17.3*	*20.1*	*1.7*	*8.7*	*3.1*
	Oats	270.5	269.0	264.8	251.0	274.3	254.0	228.0	228.5	250.2	196.3	253.0
	Change, %		*0.6*	*2.2*	*7.8*	*(1.4)*	*6.5*	*18.6*	*18.4*	*8.1*	*37.8*	*6.9*
MYR/mt	**Palm Oil**	2,759.0	2,772.0	2,791.0	2,741.0	2,581.0	2,775.0	2,803.0	3,218.0	2,190.3	2,653.8	2,835.8
	Change, %		*(0.5)*	*(1.1)*	*0.7*	*6.9*	*(0.6)*	*(1.6)*	*(14.3)*	*26.0*	*4.0*	*(2.7)*
	Cocoa	2,163.0	2,117.0	2,094.0	2,085.0	2,029.0	1,866.0	2,491.0	2,126.0	3,091.6	2,854.0	2,006.5
	Change, %		*2.2*	*3.3*	*3.7*	*6.6*	*15.9*	*(13.2)*	*1.7*	*(30.0)*	*(24.2)*	*7.8*
	Cotton	68.1	68.9	68.4	69.5	71.2	79.8	68.5	70.7	63.3	65.6	73.5
	Change, %		*(1.1)*	*(0.5)*	*(2.0)*	*(4.4)*	*(14.7)*	*(0.6)*	*(3.7)*	*7.6*	*3.8*	*(7.4)*
	Sugar	14.7	14.6	14.7	14.0	13.9	15.3	22.3	19.5	13.1	18.2	16.0
	Change, %		*1.1*	*(0.1)*	*5.3*	*6.1*	*(3.9)*	*(33.9)*	*(24.6)*	*12.0*	*(18.9)*	*(8.0)*
	Coffee	124.7	125.6	125.1	130.0	142.1	133.1	174.4	137.1	132.6	136.1	134.6
	Change, %		*(0.7)*	*(0.3)*	*(4.1)*	*(12.2)*	*(6.3)*	*(28.5)*	*(9.0)*	*(6.0)*	*(8.3)*	*(7.3)*
Energy	**WTI**	57.2	57.4	54.4	49.3	49.4	46.2	44.9	53.7	48.8	43.4	49.8
	Change, %		*(0.3)*	*5.2*	*16.0*	*15.8*	*23.8*	*27.4*	*6.5*	*17.1*	*31.8*	*14.8*
	Brent	63.6	64.3	61.4	55.6	52.4	49.1	46.2	56.8	53.7	45.1	53.3
	Change, %		*(1.1)*	*3.6*	*14.3*	*21.4*	*29.5*	*37.7*	*11.9*	*18.4*	*41.0*	*19.2*
	Natural Gas	3.2	3.1	2.9	2.9	2.8	3.3	2.8	3.7	2.6	2.6	3.0
	Change, %		*0.6*	*8.8*	*10.1*	*12.5*	*(3.5)*	*11.9*	*(15.4)*	*19.9*	*23.5*	*3.6*
	Ethanol	1.5	1.5	1.4	1.4	1.6	1.5	1.6	1.6	1.5	1.5	1.5
	Change, %		*(0.8)*	*2.7*	*3.4*	*(8.0)*	*(2.2)*	*(5.5)*	*(8.6)*	*(2.8)*	*(3.1)*	*(3.6)*
	RBOB Gasoline	181.5	183.0	178.0	155.9	163.0	150.5	137.1	166.5	163.6	140.0	160.9
	Change, %		*(0.8)*	*2.0*	*16.5*	*11.4*	*20.7*	*32.4*	*9.0*	*11.0*	*29.7*	*12.8*
	Coal	98.5	98.8	99.9	97.4	95.0	78.0	112.0	88.4	59.0	65.5	86.5
	Change, %		*(0.3)*	*(1.4)*	*1.2*	*3.7*	*26.3*	*(12.0)*	*11.4*	*67.1*	*50.5*	*13.9*
Metal	**Gold**	1,275.3	1,282.1	1,271.1	1,276.6	1,257.9	1,221.6	1,281.7	1,152.3	1,160.6	1,248.5	1,255.7
	Change, %		*(0.5)*	*0.3*	*(0.1)*	*1.4*	*4.4*	*(0.5)*	*10.7*	*9.9*	*2.1*	*1.6*
	Silver	16.9	17.2	16.7	16.8	16.3	16.3	18.3	15.9	15.7	17.1	17.2
	Change, %		*(1.6)*	*1.4*	*0.8*	*4.1*	*3.7*	*(7.3)*	*6.5*	*7.8*	*(0.9)*	*(1.2)*
	Copper	6,826.0	6,970.0	6,839.0	6,666.5	6,414.0	5,585.0	5,098.0	5,535.5	5,503.1	4,872.0	6,083.6
	Change, %		*(2.1)*	*(0.2)*	*2.4*	*6.4*	*22.2*	*33.9*	*23.3*	*24.0*	*40.1*	*12.2*
	Nickel	826.2	837.1	766.0	693.2	662.7	589.7	747.7	682.0	759.5	646.4	668.0
	Change, %		*(1.3)*	*7.9*	*19.2*	*24.7*	*40.1*	*10.5*	*21.1*	*8.8*	*27.8*	*23.7*
	Zinc	3,166.0	3,232.0	3,265.0	3,235.0	2,858.0	2,582.0	2,468.0	2,576.0	1,941.9	2,097.5	2,835.4
	Change, %		*(2.0)*	*(3.0)*	*(2.1)*	*10.8*	*22.6*	*28.3*	*22.9*	*63.0*	*50.9*	*11.7*
	Lead	2,492.0	2,507.0	2,409.5	2,519.5	2,343.3	2,178.3	2,074.3	2,003.5	1,791.2	1,868.3	2,286.1
	Change, %		*(0.6)*	*3.4*	*(1.1)*	*6.3*	*14.4*	*20.1*	*24.4*	*39.1*	*33.4*	*9.0*
	Aluminum	15,895.0	15,955.0	16,175.0	16,235.0	14,860.0	13,880.0	13,935.0	12,765.0	12,184.0	12,373.5	14,533.5
	Change, %		*(0.4)*	*(1.7)*	*(2.1)*	*7.0*	*14.5*	*14.1*	*24.5*	*30.5*	*28.5*	*9.4*
	Cobalt	60,855.0	60,860.0	60,500.0	58,533.0	57,500.0	55,050.0	28,750.0	32,734.0	28,444.4	25,480.1	53,772.5
	Change, %		*(0.0)*	*0.6*	*4.0*	*5.8*	*10.5*	*111.7*	*85.9*	*113.9*	*138.8*	*13.2*
	HR Coil	609.0	611.0	605.0	604.0	619.0	610.0	492.0	633.0	461.5	519.3	618.7
	Change, %		*(0.3)*	*0.7*	*0.8*	*(1.6)*	*(0.2)*	*23.8*	*(3.8)*	*32.0*	*17.3*	*(1.6)*
	Scrap	325.0	330.0	330.0	335.0	360.0	360.0	245.0	302.0	252.9	275.7	343.6
	Change, %		*(1.5)*	*(1.5)*	*(3.0)*	*(9.7)*	*(9.7)*	*32.7*	*7.6*	*28.5*	*17.9*	*(5.4)*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

SK Energy Daily

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SK증권

Refining Price Data

Daily Price		11/07	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	57.2	57.4	54.4	50.9	49.2	45.9	45.0	53.7	48.8	43.4	49.8
	Change, %		*(0.3)*	*5.2*	*12.3*	*16.3*	*24.7*	*27.2*	*6.5*	*17.3*	*31.9*	*14.9*
	Dubai	62.4	60.6	58.3	54.1	51.2	48.4	42.9	53.8	50.8	41.3	51.7
	Change, %		*3.0*	*7.0*	*15.4*	*21.8*	*29.0*	*45.5*	*15.9*	*22.8*	*51.0*	*20.7*
Crude Oil Product	**Gasoline(휘발유)**	77.5	75.8	72.7	68.9	67.7	62.9	57.8	69.8	69.5	56.3	66.7
	Change, %		*2.2*	*6.5*	*12.4*	*14.5*	*23.2*	*34.0*	*10.9*	*11.4*	*37.7*	*16.1*
	Kerosene(등유)	75.0	73.4	71.3	66.1	63.4	58.3	55.7	66.4	64.7	52.9	63.5
	Change, %		*2.2*	*5.2*	*13.5*	*18.3*	*28.6*	*34.8*	*12.9*	*15.9*	*41.8*	*18.0*
	Diesel(경유)	73.6	71.8	71.2	67.0	63.8	59.3	56.4	65.5	64.8	52.1	64.1
	Change, %		*2.5*	*3.4*	*9.8*	*15.4*	*24.1*	*30.5*	*12.3*	*13.5*	*41.1*	*14.8*
	Bunker-C	58.7	57.3	55.3	50.2	48.3	45.4	41.6	52.1	45.3	35.5	48.4
	Change, %		*2.5*	*6.1*	*17.0*	*21.5*	*29.3*	*41.2*	*12.8*	*29.7*	*65.2*	*21.2*
	Naphtha	65.9	64.2	61.4	55.5	50.4	47.1	45.0	53.5	52.6	42.6	51.8
	Change, %		*2.7*	*7.3*	*18.7*	*30.7*	*40.0*	*46.4*	*23.3*	*25.3*	*54.7*	*27.2*
Dubai Spread	**Gasoline(휘발유)**	15.1	15.2	14.4	14.9	16.4	14.5	14.9	16.0	18.7	14.9	15.0
	Change		*(0.1)*	*0.7*	*0.2*	*(1.3)*	*0.6*	*0.1*	*(0.9)*	*(3.7)*	*0.1*	*0.1*
	Kerosene(등유)	12.6	12.8	13.0	12.0	12.2	10.0	12.8	12.6	14.0	11.6	11.9
	Change		*(0.2)*	*(0.4)*	*0.6*	*0.4*	*2.7*	*(0.2)*	*0.0*	*(1.3)*	*1.0*	*0.8*
	Diesel(경유)	11.2	11.2	12.8	12.9	12.5	10.9	13.5	11.7	14.0	10.8	12.4
	Change		*(0.0)*	*(1.7)*	*(1.7)*	*(1.4)*	*0.3*	*(2.3)*	*(0.5)*	*(2.8)*	*0.4*	*(1.2)*
	Bunker-C	(3.7)	(3.3)	(3.0)	(3.9)	(2.9)	(3.0)	(1.3)	(1.8)	(5.5)	(5.8)	(3.2)
	Change		*(0.4)*	*(0.7)*	*0.2*	*(0.8)*	*(0.7)*	*(2.4)*	*(1.9)*	*1.8*	*2.1*	*(0.4)*
	Naphtha	3.5	3.6	3.1	1.5	(0.8)	(1.3)	2.1	(0.4)	1.8	1.3	0.1
	Change		*(0.1)*	*0.4*	*2.1*	*4.3*	*4.8*	*1.4*	*3.9*	*1.7*	*2.2*	*3.4*
Refining Margin	**Simple(단순)**	2.7	3.0	3.4	3.0	3.5	2.7	4.8	3.8	3.3	1.9	3.2
	Change		*(0.3)*	*(0.8)*	*(0.3)*	*(0.9)*	*(0.0)*	*(2.1)*	*(1.1)*	*(0.6)*	*0.8*	*(0.5)*
	Complex(복합)	7.6	7.7	8.2	8.0	8.4	7.2	9.1	8.3	9.3	7.0	8.0
	Change		*(0.2)*	*(0.7)*	*(0.5)*	*(0.8)*	*0.4*	*(1.5)*	*(0.7)*	*(1.7)*	*0.6*	*(0.4)*
	Complex(lagging)	15.6	14.4	11.0	9.1	12.6	2.6	1.9	18.0	7.3	8.5	8.5
	Change		*1.2*	*4.6*	*6.5*	*3.0*	*13.1*	*13.7*	*(2.4)*	*8.4*	*7.1*	*7.1*

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			11/07	11/06	11/03	11/02	11/01	10/31	10/30	10/27	10/26	10/25
Spot Price	**Naphtha**	CFR Japan	587.4	588.1	580.0	573.1	567.0	564.5	557.5	554.0	548.5	546.5
	Ethylene	CFR SE Asia	1,140.0	1,140.0	1,140.0	1,140.0	1,140.0	1,140.0	1,140.0	1,140.0	1,150.0	1,155.0
	Propylene	FOB Korea	903.0	918.0	918.0	918.0	923.0	925.0	940.0	943.0	943.0	945.0
	Butadiene	FOB Korea	945.0	945.0	945.0	945.0	945.0	950.0	950.0	950.0	1,165.0	1,165.0
	HDPE	CFR FE Asia	1,250.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0
	LDPE	CFR FE Asia	1,250.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,250.0	1,250.0	1,255.0	1,255.0
	LLDPE	CFR FE Asia	1,180.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,180.0	1,190.0	1,190.0
	MEG	CFR China	915.0	910.0	900.0	898.0	898.0	898.0	904.0	903.0	900.0	895.0
	PP	CFR FE Asia	1,120.0	1,120.0	1,130.0	1,130.0	1,120.0	1,115.0	1,115.0	1,125.0	1,130.0	1,130.0
	PX	CFR China	887.0	877.0	864.3	855.3	854.7	840.7	839.3	831.3	831.3	835.3
	PTA	CFR China	685.0	665.0	660.0	660.0	655.0	653.0	653.0	650.0	650.0	645.0
	Benzene	FOB Korea	856.0	828.0	815.0	811.0	812.0	794.0	795.0	791.0	794.0	798.0
	Toluene	FOB Korea	695.0	682.0	676.0	676.0	678.0	668.0	672.0	664.5	658.5	658.5
	Xylene	FOB Korea	708.0	689.0	677.0	677.0	671.0	664.0	661.0	660.0	654.0	658.0
	SM	FOB Korea	1,228.0	1,189.0	1,168.0	1,169.0	1,161.0	1,159.5	1,165.5	1,169.5	1,193.5	1,199.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	**Naphtha**	CFR Japan	554.5	526.5	520.5	456.5	411.5	446.5	484.5	493.0	399.5	475.2
	Change, %			*5.3*	*6.5*	*21.5*	*34.8*	*24.2*	*14.4*	*12.5*	*38.8*	*16.7*
	Ethylene	CFR SE Asia	1,130.0	1,175.0	1,255.0	975.0	875.0	995.0	990.0	1,103.7	1,040.9	1,068.1
	Change, %			*(3.8)*	*(10.0)*	*15.9*	*29.1*	*13.6*	*14.1*	*2.4*	*8.6*	*5.8*
	Propylene	CFR SE Asia	807.5	795.0	835.0	762.5	742.5	687.5	815.0	770.0	705.7	876.6
	Change, %			*1.6*	*(3.3)*	*5.9*	*8.8*	*17.5*	*(0.9)*	*4.9*	*14.4*	*(7.9)*
	Butadiene	CFR SE Asia	1,050.0	1,175.0	1,525.0	900.0	975.0	1,450.0	2,100.0	877.5	1,116.8	1,567.5
	Change, %			*(10.6)*	*(31.1)*	*16.7*	*7.7*	*(27.6)*	*(50.0)*	*19.7*	*(6.0)*	*(33.0)*
	Benzene	CFR SE Asia	810.0	802.5	805.0	742.5	760.0	655.0	822.5	690.0	646.7	831.0
	Change, %			*0.9*	*0.6*	*9.1*	*6.6*	*23.7*	*(1.5)*	*17.4*	*25.3*	*(2.5)*
	Toluene	CFR SE Asia	690.0	695.0	700.0	635.0	630.0	660.0	690.0	700.8	630.5	684.0
	Change, %			*(0.7)*	*(1.4)*	*8.7*	*9.5*	*4.5*	*0.0*	*(1.5)*	*9.4*	*0.9*
	Xylene	CFR SE Asia	655.0	652.5	657.5	622.5	610.0	650.0	675.0	699.3	627.7	664.0
	Change, %			*0.4*	*(0.4)*	*5.2*	*7.4*	*0.8*	*(3.0)*	*(6.3)*	*4.3*	*(1.4)*
Spread	**Ethylene**	-Naphtha	575.5	648.5	734.5	518.5	463.5	548.5	505.5	610.6	641.4	592.9
	Change, %			*(11.3)*	*(21.6)*	*11.0*	*24.2*	*4.9*	*13.8*	*(5.8)*	*(10.3)*	*(2.9)*
	Propylene	-Naphtha	253.0	268.5	314.5	306.0	331.0	241.0	330.5	277.0	306.2	401.4
	Change, %			*(5.8)*	*(19.6)*	*(17.3)*	*(23.6)*	*5.0*	*(23.4)*	*(8.7)*	*(17.4)*	*(37.0)*
	Butadiene	-Naphtha	495.5	648.5	1,004.5	443.5	563.5	1,003.5	1,615.5	384.5	717.3	1,092.3
	Change, %			*(23.6)*	*(50.7)*	*11.7*	*(12.1)*	*(50.6)*	*(69.3)*	*28.9*	*(30.9)*	*(54.6)*
	Benzene	-Naphtha	255.5	276.0	284.5	286.0	348.5	208.5	338.0	197.0	247.2	355.8
	Change, %			*(7.4)*	*(10.2)*	*(10.7)*	*(26.7)*	*22.5*	*(24.4)*	*29.7*	*3.4*	*(28.2)*
	Toluene	-Naphtha	135.5	168.5	179.5	178.5	218.5	213.5	205.5	207.8	231.0	208.8
	Change, %			*(19.6)*	*(24.5)*	*(24.1)*	*(38.0)*	*(36.5)*	*(34.1)*	*(34.8)*	*(41.3)*	*(35.1)*
	Xylene	-Naphtha	100.5	126.0	137.0	166.0	198.5	203.5	190.5	206.3	228.2	188.8
	Change, %			*(20.2)*	*(26.6)*	*(39.5)*	*(49.4)*	*(50.6)*	*(47.2)*	*(51.3)*	*(56.0)*	*(46.8)*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	HDPE	CFR SE Asia	1,197.5	1,187.5	1,187.5	1,057.5	1,047.5	1,160.0	1,142.5	1,230.1	1,134.6	1,131.4
	Change, %			0.8	0.8	13.2	14.3	3.2	4.8	(2.7)	5.5	5.8
	MEG	CFR SE Asia	907.5	917.5	902.5	872.5	802.5	677.5	847.5	780.8	660.8	839.9
	Change, %			(1.1)	0.6	4.0	13.1	33.9	7.1	16.2	37.3	8.1
	PVC	CFR SE Asia	890.0	910.0	947.5	860.0	870.0	930.0	920.0	820.8	823.4	906.0
	Change, %			(2.2)	(6.1)	3.5	2.3	(4.3)	(3.3)	8.4	8.1	(1.8)
	PP	CFR SE Asia	1,147.5	1,167.5	1,167.5	1,072.5	1,037.5	1,030.0	1,032.5	1,109.8	978.4	1,088.8
	Change, %			(1.7)	(1.7)	7.0	10.6	11.4	11.1	3.4	17.3	5.4
	2-EH	CFR Korea	1,000.0	1,000.0	990.0	970.0	920.0	790.0	865.0	930.1	772.4	959.4
	Change, %			0.0	1.0	3.1	8.7	26.6	15.6	7.5	29.5	4.2
	ABS	CFR SE Asia	1,920.0	1,950.0	2,060.0	1,820.0	1,790.0	1,460.0	1,635.0	1,431.1	1,347.1	1,816.7
	Change, %			(1.5)	(6.8)	5.5	7.3	31.5	17.4	34.2	42.5	5.7
	SBR	CFR SE Asia	1,700.0	1,750.0	1,820.0	1,490.0	1,450.0	1,900.0	2,000.0	1,332.1	1,483.0	2,047.2
	Change, %			(2.9)	(6.6)	14.1	17.2	(10.5)	(15.0)	27.6	14.6	(17.0)
	SM	CFR SE Asia	1,210.0	1,217.5	1,350.0	1,172.5	1,152.5	1,057.5	1,205.0	1,100.7	1,064.6	1,243.9
	Change, %			(0.6)	(10.4)	3.2	5.0	14.4	0.4	9.9	13.7	(2.7)
	Caustic	FOB NEA	598.0	550.0	484.0	462.5	447.5	365.0	422.5	296.8	316.6	455.8
	Change, %			8.7	23.6	29.3	33.6	63.8	41.5	101.5	88.9	31.2
	PX	CFR SE Asia	842.5	845.0	837.5	817.5	775.0	797.5	855.0	842.9	790.4	834.3
	Change, %			(0.3)	0.6	3.1	8.7	5.6	(1.5)	(0.0)	6.6	1.0
	PO	CFR China	1,685.0	1,685.0	1,560.0	1,540.0	1,485.0	1,475.0	1,562.5	1,683.4	1,396.8	1,558.6
	Change, %			0.0	8.0	9.4	13.5	14.2	7.8	0.1	20.6	8.1
	Caprolactam	CFR SE Asia	2,170.0	2,070.0	1,830.0	1,730.0	1,610.0	1,425.0	1,850.0	1,581.5	1,344.9	1,906.9
	Change, %			4.8	18.6	25.4	34.8	52.3	17.3	37.2	61.4	13.8
	PTA	CFR SE Asia	667.5	667.5	667.5	667.5	630.0	617.5	642.5	648.0	613.7	659.5
	Change, %			0.0	0.0	0.0	6.0	8.1	3.9	3.0	8.8	1.2
Spread	HDPE		643.0	661.0	667.0	601.0	636.0	713.5	658.0	737.1	735.1	656.2
	Change, %			(2.7)	(3.6)	7.0	1.1	(9.9)	(2.3)	(12.8)	(12.5)	(2.0)
	MEG		353.0	391.0	382.0	416.0	391.0	231.0	363.0	287.8	261.3	364.7
	Change, %			(9.7)	(7.6)	(15.1)	(9.7)	52.8	(2.8)	22.7	35.1	(3.2)
	PVC		335.5	383.5	427.0	403.5	458.5	483.5	435.5	327.8	423.9	430.8
	Change, %			(12.5)	(21.4)	(16.9)	(26.8)	(30.6)	(23.0)	2.3	(20.9)	(22.1)
	PP		593.0	641.0	647.0	616.0	626.0	583.5	548.0	616.8	578.9	613.5
	Change, %			(7.5)	(8.3)	(3.7)	(5.3)	1.6	8.2	(3.9)	2.4	(3.3)
	2-EH		445.5	473.5	469.5	513.5	508.5	343.5	380.5	437.0	372.9	484.2
	Change, %			(5.9)	(5.1)	(13.2)	(12.4)	29.7	17.1	1.9	19.5	(8.0)
	ABS		1,365.5	1,423.5	1,539.5	1,363.5	1,378.5	1,013.5	1,150.5	938.1	947.6	1,341.5
	Change, %			(4.1)	(11.3)	0.1	(0.9)	34.7	18.7	45.6	44.1	1.8
	SBR	BD spread	650.0	575.0	295.0	590.0	475.0	450.0	(100.0)	454.7	366.2	479.7
	Change, %			13.0	120.3	10.2	36.8	44.4	(750.0)	43.0	77.5	35.5
	SM		655.5	691.0	829.5	716.0	741.0	611.0	720.5	607.7	665.1	768.7
	Change, %			(5.1)	(21.0)	(8.4)	(11.5)	7.3	(9.0)	7.9	(1.4)	(14.7)
	Caustic											
	Change, %											
	PX		288.0	318.5	317.0	361.0	363.5	351.0	370.5	349.9	390.9	359.1
	Change, %			(9.6)	(9.1)	(20.2)	(20.8)	(17.9)	(22.3)	(17.7)	(26.3)	(19.8)
	PO	propylene sprea	877.5	890.0	725.0	777.5	742.5	787.5	747.5	913.4	691.1	682.0
	Change, %			(1.4)	21.0	12.9	18.2	11.4	17.4	(3.9)	27.0	28.7
	Caprolactam	benzene spreac	1,360.0	1,267.5	1,025.0	987.5	850.0	770.0	1,027.5	891.6	698.2	1,076.0
	Change, %			7.3	32.7	37.7	60.0	76.6	32.4	52.5	94.8	26.4
	PTA	px spread	77.8	76.0	81.3	95.3	87.5	59.3	44.0	58.0	60.4	75.5
	Change, %			2.3	(4.3)	(18.4)	(11.1)	31.2	76.7	34.0	28.7	3.0

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	11/07	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	1.3	(1.6)	(0.1)	11.4	12.8	32.6	24.3	166,467	20.6	17.2	1.6	1.9	11.6	10.1
Eastman	USD	90.6	0.3	(0.2)	(0.4)	7.3	13.8	25.2	20.5	13,024	12.8	11.1	2.6	2.4	9.3	8.5
BASF	EUR	96.3	(1.1)	2.4	7.1	18.0	6.5	23.0	9.0	102,438	15.7	15.7	2.6	2.4	8.5	8.2
Akzo Nobel	EUR	78.5	0.6	1.0	0.2	1.6	(1.1)	35.8	32.2	22,904	19.1	18.3	3.3	3.2	10.3	9.9
Arkema	EUR	109.2	0.2	0.7	5.9	13.2	9.5	29.1	17.5	9,591	16.0	14.6	2.1	1.9	7.1	6.7
Lanxess	EUR	69.8	(0.2)	4.0	4.9	3.6	1.1	23.7	11.9	7,395	18.2	15.8	2.4	2.2	7.8	8.2
Sumitomo Chemical	JPY	821	(0.1)	3.4	18.0	29.5	29.5	70.0	47.7	11,938	11.1	10.8	1.5	1.4	7.9	7.6
Mitsubishi Chemical	JPY	1,214	(0.2)	3.1	9.7	27.2	37.0	78.1	60.1	16,055	9.9	9.8	1.4	1.3	6.8	6.6
Shin-Etsu Chemical	JPY	12,510	1.5	5.0	23.8	24.9	30.3	58.0	38.0	47,480	24.4	21.5	2.3	2.1	11.0	9.6
Asahi Kasei	JPY	1,408	2.6	2.8	1.6	7.6	31.1	48.2	38.1	17,340	15.4	15.1	1.6	1.5	7.6	7.3
JSR	JPY	2,222	1.3	1.6	6.8	15.9	10.2	45.1	20.6	4,413	15.6	15.0	1.3	1.2	8.4	7.9
Nitto Denko	JPY	11,685	3.2	11.2	23.4	14.4	30.6	61.4	30.3	17,834	22.2	20.3	2.7	2.5	10.0	9.3
SABIC	SAR	98.6	(1.8)	(0.7)	(3.0)	0.9	3.0	15.8	7.8	78,867	14.6	13.8	1.8	1.7	7.4	7.1
Yansab	SAR	55.9	0.6	0.0	(4.4)	3.0	2.7	23.4	2.7	8,384	14.0	13.1	2.3	2.2	8.9	8.6
Formosa Plastics	TWD	92.7	1.0	0.9	0.8	(0.3)	3.0	8.4	3.9	19,539	13.5	14.2	1.8	1.7	19.5	19.3
Formosa Fiber	TWD	92.5	0.8	1.0	0.7	(0.2)	1.1	(2.4)	(3.9)	17,951	12.0	12.6	1.6	1.6	10.7	10.7
Nan Ya Plastics	TWD	75.1	0.7	0.9	2.3	(1.2)	5.8	15.9	5.5	19,721	14.4	14.8	1.7	1.7	14.7	15.1
Sinopec Shanghai	CNY	6.55	1.9	3.3	3.8	(7.6)	3.3	11.8	1.7	9,278	12.7	12.2	2.5	2.2	6.9	6.9
Sinopec Yizheng(Fibe	CNY	3.12	1.6	4.0	(1.0)	(4.6)	(1.6)	(20.6)	(23.9)	6,042	#N/A N/A	57.8	6.0	6.0	29.0	15.2
Reliance	INR	907	(2.8)	(3.6)	8.3	12.2	36.5	81.1	67.5	90,452	16.9	14.0	1.9	1.7	11.6	9.7
Industries Qatar	QAR	95.0	(0.0)	(0.5)	3.3	0.8	(4.5)	(4.3)	(19.2)	14,995	16.1	13.8	1.6	1.6	54.2	50.9
PTT Chemical	THB	78.0	0.6	(2.5)	(5.7)	8.3	4.3	31.1	23.8	10,573	10.6	10.8	1.4	1.3	5.6	5.4
Petronas	MYR	7.3	(0.5)	(0.5)	(0.3)	4.3	2.5	5.6	5.0	13,877	15.9	15.9	2.0	1.9	8.7	8.6
LG화학	KRW	409,000	0.0	1.4	4.3	18.9	48.2	63.6	56.7	25,878	15.2	14.4	2.0	1.8	6.7	6.3
롯데케미칼	KRW	370,500	0.0	0.3	(2.0)	(5.8)	5.1	22.7	0.4	11,382	5.5	5.5	1.1	0.9	3.8	3.3
한화케미칼	KRW	31,200	(1.4)	2.5	(3.9)	(7.0)	23.8	13.2	26.3	4,609	5.0	5.5	0.8	0.7	6.6	6.5
금호석유	KRW	74,000	(2.1)	6.6	2.6	(2.2)	(3.6)	8.0	(9.8)	2,021	12.9	12.0	1.3	1.2	9.6	8.5
SKC	KRW	39,800	(2.7)	0.1	(3.5)	9.5	39.2	43.2	20.6	1,339	10.7	9.6	1.0	0.9	9.4	7.8
국도화학	KRW	59,700	(2.0)	1.4	8.2	6.2	25.4	11.0	8.7	311	0.0	0.0	0.0	0.0	0.0	0.0
효성	KRW	7,630	(2.1)	(7.5)	14.7	13.2	(0.3)	38.0	12.2	4,265	8.3	7.2	1.2	1.1	6.8	6.0
Average			**0.0**	**1.3**	**4.2**	**7.4**	**13.5**	**29.9**	**17.9**							
Refinery																
Valero	USD	81.8	0.5	3.7	6.0	20.3	25.2	39.8	19.8	36,141	16.8	13.2	1.8	1.8	7.2	6.3
Conoco Phillips	USD	53.5	(0.4)	4.6	9.5	18.4	14.3	21.8	6.7	63,936	130.4	36.9	2.1	2.2	9.3	7.4
Formosa Petrochemic	TWD	106.5	0.9	0.9	(0.9)	0.0	2.4	(0.5)	(4.9)	33,591	14.8	18.0	3.2	3.2	9.4	11.0
Andeavor	USD	111.3	(0.3)	4.7	5.0	14.5	37.6	38.4	27.2	17,460	15.8	13.5	1.7	1.7	9.1	7.2
Marathon Petroleum	USD	63.1	1.2	5.6	12.7	15.0	24.6	48.1	25.3	30,824	17.1	15.5	2.5	2.5	8.4	7.6
Devon Energy	USD	41.3	1.0	11.8	15.3	27.3	8.5	(1.3)	(9.7)	21,682	23.3	18.8	3.0	2.6	9.6	8.7
Hollyfrontier	USD	42.3	0.6	14.6	19.5	38.8	57.1	81.1	29.2	7,504	20.2	16.3	1.5	1.5	8.7	7.4
Phillips 66	USD	94.6	0.1	3.8	1.9	11.2	19.2	18.3	9.4	47,922	20.9	15.3	2.2	2.1	10.6	8.8
Murphy Oil	USD	29.2	0.3	9.3	12.3	13.0	11.7	9.2	(6.1)	5,046	#N/A N/A	252.1	1.1	1.1	5.4	4.9
JX Holdings	JPY	630.6	3.3	8.1	10.6	27.9	25.4	55.9	27.5	18,981	9.9	9.2	0.9	0.9	8.0	7.5
Idemitsu	JPY	3,510.0	2.2	6.5	10.7	33.5	(3.7)	51.0	13.0	6,413	7.9	7.9	0.9	0.9	8.9	8.6
Nesteoil	EUR	49.0	0.0	2.4	29.1	40.3	26.7	28.8	34.2	14,547	15.8	15.8	2.9	2.7	9.1	9.6
Ashland	USD	66.2	(3.3)	(2.7)	(1.0)	4.3	9.5	19.1	23.7	4,129	16.4	19.6	1.3	1.2	7.6	9.5
Fuchs Petrolub	EUR	48.1	(0.7)	(0.3)	(3.7)	0.2	(1.3)	25.6	20.5	7,304	25.3	23.8	5.0	4.5	14.6	13.8
SK이노베이션	KRW	214,000	0.9	4.4	7.5	21.2	25.5	38.1	46.1	17,735	8.5	8.1	1.1	1.0	5.2	4.7
S-Oil	KRW	128,000	0.4	(0.4)	0.4	10.3	28.0	54.6	51.1	12,916	12.6	9.5	2.2	2.0	9.6	7.0
GS	KRW	68,000	3.3	2.7	3.7	(8.6)	15.1	26.6	25.7	5,663	6.5	6.2	0.8	0.7	7.2	6.9
Average			**0.6**	**4.7**	**8.1**	**16.9**	**19.2**	**32.6**	**19.9**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

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SK 증권

Global peers

	Currency	11/07	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	84	(0.2)	0.3	2.3	4.3	1.9	(2.2)	(7.4)	354,137	23.6	21.0	2.0	2.0	10.1	9.1
BP	GBP	525	0.7	2.8	7.5	12.0	16.3	15.7	3.0	136,722	23.7	18.0	1.4	1.4	6.7	6.0
Shell	EUR	2,450	(0.3)	3.6	6.6	11.5	18.5	19.2	9.2	268,975	17.8	16.0	1.4	1.3	7.0	6.4
Chevron	USD	117	0.2	1.2	0.2	6.8	10.8	9.7	(0.4)	222,683	29.3	23.5	1.5	1.5	8.3	7.2
Total	EUR	49	0.6	2.1	7.3	11.5	1.9	14.0	0.3	143,065	13.8	13.3	1.3	1.3	6.4	5.7
Sinopec	CNY	6	1.5	5.4	6.6	4.1	11.5	27.1	16.3	110,087	14.5	13.4	1.0	1.0	4.7	4.5
Petrochina	CNY	9	2.5	3.9	7.5	4.9	13.8	17.8	8.1	224,901	54.4	32.7	1.3	1.3	6.9	6.4
CNOOC	CNY	12	5.0	6.0	6.4	5.5	13.9	(0.8)	(5.8)	63,730	13.8	12.0	1.1	1.0	4.3	4.1
Gazprom	RUB	132	5.1	5.1	7.1	10.7	(1.6)	(4.5)	(14.4)	52,757	4.6	4.2	0.3	0.2	3.8	3.5
Rosneft	RUB	330	3.8	3.5	2.9	4.3	5.6	(3.2)	(18.1)	58,912	10.3	7.4	0.9	0.8	5.2	4.4
Anadarko	USD	51	(1.4)	3.5	5.0	15.1	(2.9)	(15.2)	(26.7)	27,949	#N/A N/A	#N/A N/A	2.0	1.9	7.7	6.8
Petrobras	BRL	17	(5.3)	(1.6)	5.2	21.8	16.1	(4.1)	11.0	67,415	14.6	10.2	0.7	0.6	5.6	5.2
Lukoil	USD	3,325	4.9	7.4	8.7	14.0	18.3	11.2	(3.6)	47,674	7.1	6.5	0.7	0.7	N/A	N/A
Kinder	USD	18	(0.2)	(0.4)	(5.2)	(10.5)	(10.6)	(10.6)	(12.9)	47,497	28.0	25.8	1.1	1.1	11.2	10.8
Statoil	NOK	170	1.8	3.0	7.4	13.2	16.2	26.5	7.5	68,862	16.9	18.2	1.8	1.7	3.6	3.6
BHP	AUD	29	3.9	8.3	8.0	9.9	27.1	26.7	14.7	110,990	15.6	18.0	1.9	1.9	6.3	6.7
PTT E&P	THB	95	3.0	9.6	5.6	8.3	0.0	13.9	(1.8)	11,318	14.9	13.2	0.9	0.9	3.5	3.3
Petronas gas	MYR	18	3.2	(2.2)	(2.5)	(6.5)	(5.5)	(20.0)	(17.2)	8,260	19.7	18.4	2.8	2.7	11.2	10.4
Chesapeake	USD	4	0.0	7.2	(0.5)	(3.9)	(23.4)	(23.3)	(40.5)	3,798	6.0	5.8	#N/A N/A	#N/A N/A	7.7	6.6
Noble Energy	USD	29	(0.3)	3.7	2.1	13.2	(6.8)	(22.9)	(24.0)	14,068	#N/A N/A	1,032.5	1.5	1.5	8.4	7.7
Average		**0**	**1.4**	**3.6**	**4.4**	**7.5**	**6.0**	**3.7**	**(5.1)**							
PV																
WACKER	EUR	138.5	(1.7)	3.4	20.2	30.1	38.7	72.2	40.1	8,364	26.6	24.2	2.2	2.1	7.8	7.3
GCL-Poly	HKD	1.4	(0.7)	4.5	23.9	55.6	47.4	34.6	50.5	3,334	10.2	9.8	1.0	0.9	6.8	6.3
SunPower	USD	8.6	(2.3)	20.6	21.0	(12.0)	24.3	21.0	30.0	1,199	#N/A N/A	#N/A N/A	1.6	1.5	18.7	12.3
Canadian Solar	USD	18.8	0.0	6.5	13.5	6.4	40.9	47.0	54.0	1,088	10.7	7.2	1.1	1.0	9.9	8.6
JA Solar	USD	7.8	(2.3)	4.6	7.7	22.9	9.7	35.5	63.7	371	7.9	14.9	1.8	1.8	3.5	3.3
Yingli	USD	2.2	0.5	(2.7)	(4.8)	(6.0)	(6.4)	(40.8)	(15.8)	40	#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	61.0	(0.8)	11.2	26.4	25.5	76.5	80.6	90.0	6,366	24.8	51.7	1.0	1.2	11.4	12.1
한화큐셀	USD	8.8	4.4	10.3	7.6	2.7	32.2	(16.6)	7.2	728	97.2	48.6	#N/A N/A	#N/A N/A	7.7	8.1
OCI	KRW	126,000	(0.8)	11.5	22.9	32.5	55.7	25.4	60.1	2,693	14.2	15.7	0.9	0.8	7.8	6.5
웅진에너지	KRW	7,840	1.6	(0.5)	3.8	(6.3)	52.5	33.8	65.6	176	N/A	0.9	0.8	7.8	6.5	8.3
신성솔라에너지	KRW	1,755	0.3	(0.6)	(2.5)	(22.3)	(2.5)	(35.2)	(20.6)	272	N/A	0.8	7.8	6.5	8.3	7.2
Average			**(0.2)**	**6.3**	**12.7**	**11.7**	**33.6**	**23.4**	**38.6**							
Gas Company																
Towngas China	HKD	6.5	(0.2)	1.6	17.8	16.3	39.5	55.1	59.3	2,306	15.0	13.6	1.2	1.1	13.3	12.2
Kulun	HKD	7.3	2.1	0.6	(3.8)	(4.7)	6.6	25.3	25.3	7,520	11.5	10.5	1.3	1.2	5.8	5.6
Beijing Enterprise	HKD	46.0	1.0	(0.9)	4.1	13.3	25.5	21.7	25.4	7,431	8.8	8.1	0.9	0.8	15.9	14.7
ENN Energy	HKD	59.2	1.8	3.5	2.2	11.1	43.0	58.1	85.6	8,212	15.8	13.9	3.1	2.6	9.6	8.6
China Resources Gas	HKD	28.7	2.0	0.5	5.1	(2.9)	12.5	18.1	31.7	8,179	16.4	14.6	3.1	2.7	9.6	8.8
China Gas Holdings	HKD	23.6	(0.2)	(0.6)	(4.1)	23.6	97.9	100.3	123.9	14,993	20.3	17.1	4.7	3.9	16.0	13.6
Shenzen Gas	HKD	15.0	0.1	0.7	(4.1)	7.3	17.0	25.8	32.7	3,898	12.3	11.8	1.4	1.3	9.1	8.5
Shann Xi	CNY	8.3	0.1	(0.8)	0.2	(5.7)	(2.7)	(16.7)	(13.5)	1,392	17.5	15.7	1.7	1.6	#N/A N/A	#N/A N/A
Suntien	HKD	2.1	(0.9)	(4.5)	7.1	24.9	37.0	99.1	111.0	1,004	7.9	6.9	0.8	0.7	10.0	8.6
China Oil & Gas	HKD	0.5	1.9	1.9	(5.3)	(1.8)	(5.3)	(5.3)	(11.5)	403	9.3	8.1	0.9	0.8	6.2	5.6
Average			**0.8**	**0.2**	**1.9**	**8.1**	**27.1**	**38.2**	**47.0**							
EV																
LG화학	KRW	409,000	0.0	1.4	4.3	18.9	48.2	63.6	56.7	25,878	14.2	13.8	1.9	1.7	6.9	6.6
삼성SDI	KRW	221,000	1.6	7.3	11.3	22.1	59.0	133.1	102.8	13,621	23.3	14.3	1.4	1.2	24.2	15.3
Panasonic	JPY	1729.5	1.8	1.7	6.5	13.6	29.2	73.8	45.4	37,264	22.7	17.3	2.4	2.1	7.4	6.3
GS Yuasa	JPY	580.0	2.1	2.3	(2.0)	12.2	10.1	29.5	19.3	2,107	17.6	15.9	1.4	1.3	7.8	7.3
NEC	JPY	3025.0	0.7	(2.4)	(1.3)	0.2	7.3	5.0	(2.4)	6,921	18.1	16.9	0.9	0.9	7.1	6.6
BYD Auto	CNY	65.5	(0.1)	4.0	(4.1)	34.0	35.5	18.0	31.9	26,057	37.7	26.3	3.3	2.9	16.0	12.9
Tesla Motors	USD	306.1	1.1	(7.7)	(14.2)	(13.8)	(0.7)	58.4	43.2	51,437	#N/A N/A	#N/A N/A	10.6	10.4	130.0	30.5
Kandi Technologies	USD	7.6	4.5	3.8	(17.7)	91.8	74.1	59.5	54.6	364	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**1.5**	**1.3**	**(2.1)**	**22.4**	**32.8**	**55.1**	**43.9**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임