SK Energy Daily

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SK 증권

1. News Summary (3 page)

2018년 8월 24일

News		Conclusion
WTI comment	미중 무역협상 관망속 약보합…WTI 0.04%↓	
Headline	칼리드 알 팔리 사우디 에너지 장관, "아람코 상장은 여전히 유효함"	SABIC 인수가에 따라 NEOM에 투입될 재원 조달이 추가될 여력도 있음
News 1.	-	-
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	67.8	(0.0)	3.6	(1.0)	(4.1)	43.0
Dubai	$/bbl	73.1	2.9	5.1	2.2	(5.0)	44.7
Gasoline	$/bbl	85.4	1.8	1.5	2.7	(6.2)	25.9
Diesel	$/bbl	88.7	2.3	3.9	4.8	(3.6)	39.1
Complex margin	$/bbl	8.0	(0.4)	(1.2)	0.6	0.1	(0.9)
1M lagging	$/bbl	9.7	1.7	3.8	1.9	(5.0)	(3.3)
Petrochemical			%	%	%	%	%
Naphtha	$/t	656	2.0	2.9	1.1	(5.8)	41.5
Butadiene	$/t	1,750	2.0	1.7	4.2	2.3	42.3
HDPE	$/t	1,290	0.0	(0.8)	(2.3)	(5.8)	13.2
MEG	$/t	936	0.3	4.0	3.7	(0.4)	7.8
PX	$/t	1,220	1.3	4.7	22.4	22.2	52.4
SM	$/t	1,408	(0.1)	(0.1)	3.6	0.7	18.0
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.96	0.3	1.9	7.3	(0.2)	2.2
Natural rubber	$/t	1,350	(2.2)	1.5	3.1	(5.6)	(10.6)
Cotton	C/lbs	81.7	(1.0)	(0.5)	(8.2)	(6.6)	16.5

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	08/20	$/t	1,275	0.0	0.8	12.3	9.4
Propylene	08/20	$/t	1,048	1.0	5.8	2.4	35.2
Benzene	08/20	$/t	890	1.4	7.2	2.3	14.8
Toluene	08/20	$/t	820	(1.2)	3.8	(0.6)	25.2
Xylene	08/20	$/t	845	0.6	2.7	1.8	33.1
PP	08/20	$/t	1,233	0.0	(0.8)	(4.3)	11.3
PVC	08/20	$/t	950	0.5	1.1	3.3	6.7
ABS	08/20	$/t	1,960	0.0	2.1	(5.3)	4.8
SBR	08/20	$/t	1,875	2.5	6.5	1.9	21.8
SM	08/20	$/t	1,470	(0.3)	5.4	2.6	23.3
BPA	08/20	$/t	1,870	3.0	3.2	0.3	(7.5)
Caustic	08/20	$/t	421	14.1	0.2	(29.6)	(11.6)
2-EH	08/20	$/t	1,130	0.9	2.7	(5.0)	17.7
Caprolactam	08/20	$/t	2,155	0.0	0.0	3.1	19.7
Solar				%	%	%	%
Polysilicon	08/22	$/kg	11.3	(0.7)	3.3	(25.4)	(27.4)
Module	08/22	$/W	0.25	(0.4)	(1.6)	(14.6)	(21.5)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	79.1	(1.1)	1.4	(2.9)	(3.7)	3.2
Shell	EUR	2,538	0.5	2.5	(4.5)	(4.2)	18.6
Petrochina	CNY	8.06	0.8	1.5	8.0	(2.3)	0.9
Gazprom	RUB	141.5	(1.8)	0.4	2.3	(3.1)	22.2
Petrobras	BRL	18.0	(2.2)	(5.3)	(6.8)	(22.9)	30.5
Refinery							
Phillips66	USD	118.4	1.2	3.0	7.2	(0.5)	43.7
Valero	USD	118.1	2.1	6.1	11.1	(2.5)	79.7
JX	JPY	778.8	1.8	4.0	(2.1)	6.3	44.1
Neste Oil	EUR	73.7	(0.8)	0.2	9.1	8.0	112.0

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	79.1	(0.3)	2.1	(4.1)	(9.7)	(3.9)
DowDuPont	USD	68.1	(0.9)	1.5	3.7	1.6	5.5
SABIC	SAR	123.0	0.0	0.0	(4.8)	2.5	25.0
Formosa Pla.	TWD	113.5	3.2	4.6	4.6	3.2	22.0
Shin-Etsu	JPY	10,555	(0.7)	(1.1)	1.8	(7.1)	10.7
Renewable							
Wacker	EUR	121.7	0.7	(0.6)	4.8	(18.8)	14.4
First Solar	USD	51.57	(1.9)	1.4	(2.0)	(24.6)	11.0
GCL-Poly	HKD	0.54	1.9	8.0	(19.4)	(43.2)	(40.7)
Tesla Motors	USD	320.1	(0.5)	(4.6)	5.6	14.7	(9.3)

4. Coverage Summary

	08/23	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,283	0.4	1.9	0.1	(7.2)	(6.1)	(3.5)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,549	1.0	(0.6)	0.4	(6.2)	(8.2)	(3.1)				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	356,500	0.6	(3.0)	7.9	1.1	(4.8)	(1.8)	매수	400,000	12.2	14.08	1.59
롯데케미칼	311,000	(1.3)	(8.5)	(8.0)	(15.3)	(29.6)	(21.8)	매수	400,000	28.6	9.66	0.88
한화케미칼	19,500	(2.5)	(1.8)	(3.0)	(26.4)	(41.8)	(44.9)	매수	30,000	53.8	8.76	0.48
금호석유화학	100,500	0.0	(4.3)	(8.6)	(2.4)	10.2	29.3	매수	150,000	49.3	9.37	1.30
KCC	334,500	0.6	(1.3)	4.2	(3.6)	(8.4)	(14.1)	매수	400,000	19.6	29.00	0.52
OCI	108,500	(3.1)	4.3	14.8	(23.9)	(33.2)	14.9	매수	140,000	29.0	8.25	0.79
SKC	45,050	(0.8)	0.0	7.3	15.8	20.0	20.6	매수	50,000	11.0	12.29	1.07
SK이노베이션	195,500	0.8	(1.8)	0.5	(3.2)	0.0	12.0	매수	230,000	17.6	11.49	0.98
S-Oil	119,000	(0.8)	(2.9)	5.3	9.2	(0.4)	2.1	매수	140,000	17.6	13.58	1.99
GS	53,200	(1.1)	(1.1)	1.9	(10.1)	(16.4)	(23.5)	매수	80,000	50.4	4.93	0.60
SK가스	84,500	0.1	(2.9)	(0.7)	(18.0)	(8.5)	(23.2)	매수	130,000	53.8	7.98	0.57
포스코대우	17,950	(1.4)	(0.6)	0.3	(22.3)	(13.7)	(18.4)	매수	25,000	39.3	9.41	0.70
LG상사	22,500	(0.2)	(1.3)	(0.4)	(14.6)	(19.2)	(21.3)	매수	38,000	68.9	8.33	0.63
한국전력	30,600	(0.5)	(0.5)	(7.7)	(10.5)	(9.3)	(30.1)	매수	45,000	47.1	7.41	0.24
한국가스공사	53,400	(0.7)	(2.6)	(8.4)	(8.4)	13.4	16.0	매수	75,000	40.4	8.28	0.69

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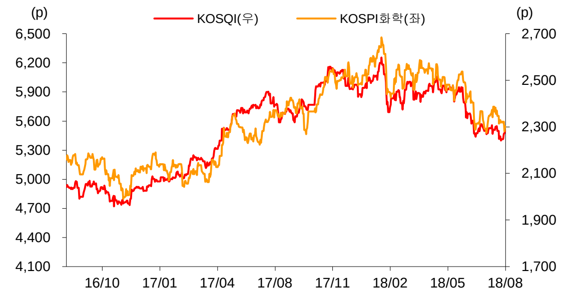
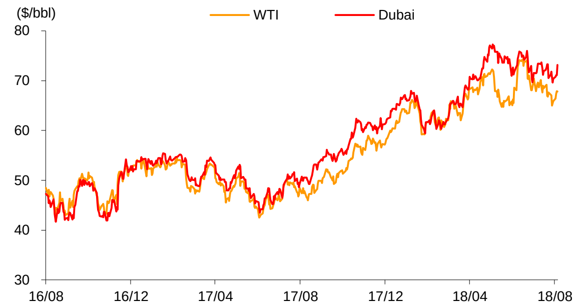
Key Chart

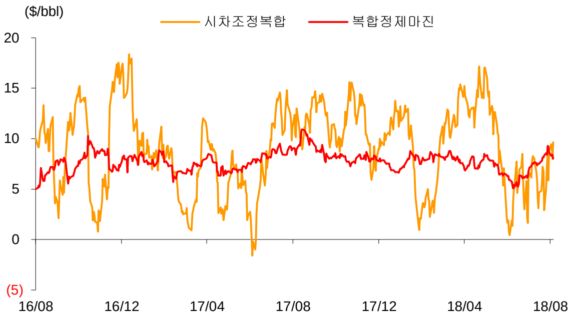
KOSPI/KOSPI화학



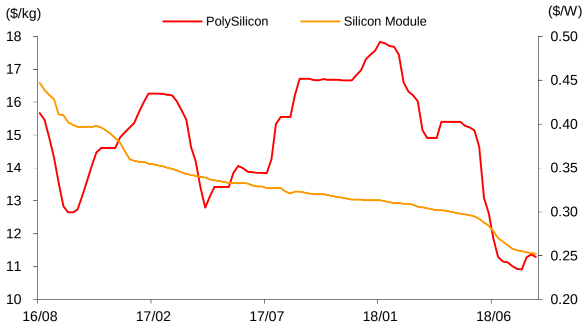
WTI/Dubai



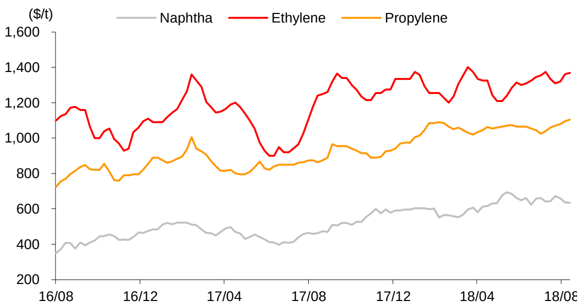
Complex & 1M lagging margin



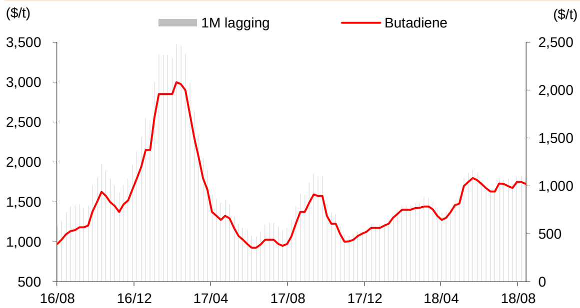
Polysilicon & Module prices



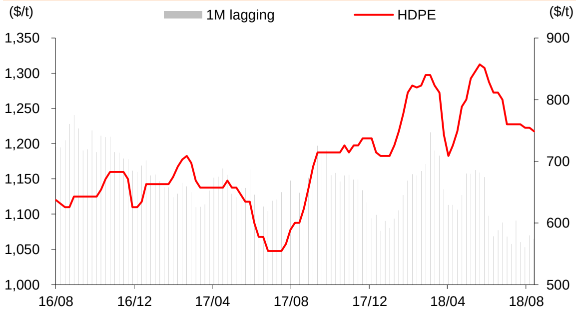
Naphtha/Ethylene/Propylene prices



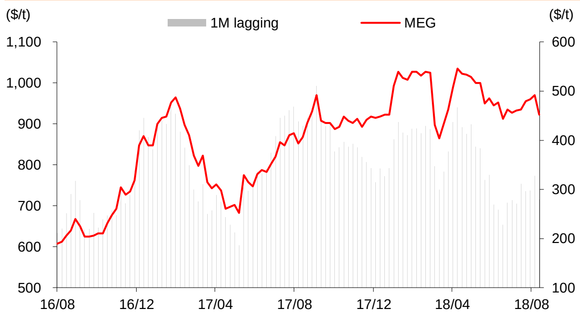
Butadiene price & 1M lagging naphtha spread



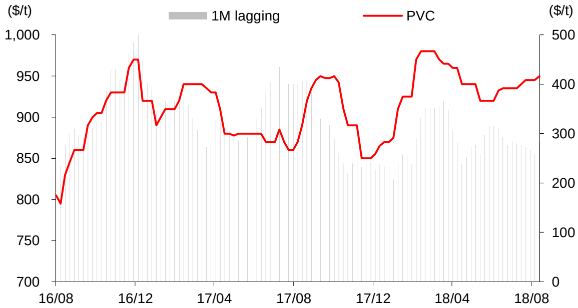
HDPE price & 1M lagging naphtha spread



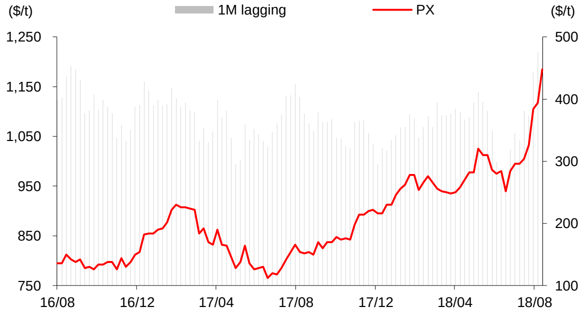
MEG price & 1M lagging naphtha spread



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: Aljazeera)
제목	칼리드 알 팔리 사우디 에너지 장관, "아람코 상장은 여전히 유효함"
결론	SABIC 인수가에 따라 NEOM에 투입될 재원 조달이 추가될 여력도 있음
세부	
	1) 이에 대해 칼리드 알 팔리 장관이 아람코 IPO 취소 보도를 부인함
	2) 칼리드 알 팔리, "시점은 시황, 다운스트림 인수 등의 요인으로 결정됨"
	3) 칼리드 알 팔리, "정부는 적절한 주변 환경과 시점을 선택할 것"
	4) 칼리드 알 팔리는 SABIC 인수에 대한 구체적 언급은 하지 않음
	5) SABIC 인수가에 따라 NEOM에 투입될 재원 조달이 추가될 여력도 있음

WTI Comment	(출처: 연합뉴스)
제목	미중 무역협상 관망속 약보합…WTI 0.04%↓
상승 요인	
하락 요인	미국과 중국의 무역협상 결과를 기다리며 관망하는 기류가 형성

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

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)
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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	2016avg.	2017avg.	2018acc.
F/X	**USD/EUR**	0.866	0.862	0.879	0.855	0.855	0.813	0.847	0.833	0.904	0.887	0.835
	Change, %		*0.5*	*(1.4)*	*1.3*	*1.3*	*6.5*	*2.3*	*4.0*	*(4.1)*	*(2.3)*	*3.8*
	USD/JPY	111.3	110.6	110.9	111.4	110.1	106.9	109.0	112.6	108.8	112.1	109.3
	Change, %		*0.7*	*0.4*	*(0.1)*	*1.1*	*4.1*	*2.1*	*(1.2)*	*2.3*	*(0.8)*	*1.8*
	USD/KRW	1,121.4	1,119.1	1,130.0	1,131.2	1,080.5	1,078.9	1,131.8	1,066.7	1,160.5	1,130.9	1,087.0
	Change, %		*0.2*	*(0.8)*	*(0.9)*	*3.8*	*3.9*	*(0.9)*	*5.1*	*(3.4)*	*(0.8)*	*3.2*
Agriculture	**Corn**	346.8	352.5	365.3	357.3	408.5	366.3	342.0	350.8	358.5	359.4	370.3
	Change, %		*(1.6)*	*(5.1)*	*(2.9)*	*(15.1)*	*(5.3)*	*1.4*	*(1.1)*	*(3.3)*	*(3.5)*	*(6.3)*
	Soybean	842.0	858.3	885.5	847.8	1,039.3	1,036.3	935.0	951.8	987.5	975.9	968.1
	Change, %		*(1.9)*	*(4.9)*	*(0.7)*	*(19.0)*	*(18.7)*	*(9.9)*	*(11.5)*	*(14.7)*	*(13.7)*	*(13.0)*
	Wheat	522.0	526.0	542.3	513.8	531.0	452.3	403.3	427.0	436.4	436.0	487.5
	Change, %		*(0.8)*	*(3.7)*	*1.6*	*(1.7)*	*15.4*	*29.4*	*22.2*	*19.6*	*19.7*	*7.1*
	Rice	10.8	10.8	10.5	12.0	11.9	12.0	12.3	11.7	10.3	11.1	12.0
	Change, %		*0.0*	*3.3*	*(9.9)*	*(9.4)*	*(9.7)*	*(12.2)*	*(7.5)*	*4.4*	*(2.4)*	*(10.4)*
	Oats	263.3	259.8	253.8	231.5	252.0	260.0	238.8	241.0	196.3	252.3	246.4
	Change, %		*1.3*	*3.7*	*13.7*	*4.5*	*1.3*	*10.3*	*9.2*	*34.1*	*4.4*	*6.8*
MYR/mt	**Palm Oil**	2,183.0	2,205.0	2,191.0	2,130.0	2,462.0	2,536.0	2,723.0	2,444.0	2,653.8	2,787.3	2,372.3
	Change, %		*(1.0)*	*(0.4)*	*2.5*	*(11.3)*	*(13.9)*	*(19.8)*	*(10.7)*	*(17.7)*	*(21.7)*	*(8.0)*
	Cocoa	2,349.0	2,310.0	2,104.0	2,299.0	2,618.0	2,204.0	1,908.0	1,892.0	2,854.0	2,005.2	2,364.0
	Change, %		*1.7*	*11.6*	*2.2*	*(10.3)*	*6.6*	*23.1*	*24.2*	*(17.7)*	*17.1*	*(0.6)*
	Cotton	81.7	82.5	82.1	87.5	87.0	81.5	69.6	78.6	65.6	73.5	84.2
	Change, %		*(1.0)*	*(0.5)*	*(6.6)*	*(6.0)*	*0.3*	*17.4*	*3.9*	*24.6*	*11.1*	*(3.0)*
	Sugar	10.1	10.2	10.3	11.1	12.4	13.7	13.7	15.2	18.2	15.8	12.3
	Change, %		*(0.6)*	*(1.7)*	*(8.7)*	*(18.1)*	*(26.0)*	*(26.0)*	*(33.2)*	*(44.2)*	*(36.0)*	*(17.5)*
	Coffee	97.2	96.4	101.7	111.7	119.4	119.5	126.3	126.2	136.1	133.0	116.3
	Change, %		*0.8*	*(4.4)*	*(12.9)*	*(18.6)*	*(18.6)*	*(23.0)*	*(23.0)*	*(28.6)*	*(26.9)*	*(16.4)*
Energy	**WTI**	67.8	67.9	65.5	67.9	71.8	63.6	48.4	60.4	43.4	51.0	66.3
	Change, %		*(0.0)*	*3.6*	*(0.1)*	*(5.6)*	*6.7*	*40.1*	*12.3*	*56.4*	*33.1*	*2.2*
	Brent	74.7	74.8	71.4	73.1	79.8	67.3	52.6	66.9	45.1	54.9	71.8
	Change, %		*(0.1)*	*4.6*	*2.3*	*(6.4)*	*11.0*	*42.2*	*11.8*	*65.8*	*36.2*	*4.0*
	Natural Gas	3.0	3.0	2.9	2.7	2.9	2.6	2.9	3.0	2.6	3.0	2.8
	Change, %		*0.3*	*1.9*	*8.9*	*1.7*	*12.9*	*1.2*	*0.4*	*16.1*	*(1.9)*	*4.3*
	Ethanol	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		*(2.0)*	*(5.3)*	*(9.6)*	*(14.0)*	*(12.0)*	*(14.9)*	*(2.0)*	*(14.6)*	*(13.6)*	*(9.5)*
	RBOB Gasoline	205.9	206.8	198.7	209.1	226.0	180.9	161.9	179.9	140.0	162.9	200.8
	Change, %		*(0.4)*	*3.6*	*(1.5)*	*(8.9)*	*13.9*	*27.2*	*14.5*	*47.1*	*26.4*	*2.6*
	Coal	117.2	117.5	118.1	118.7	104.8	105.1	98.4	100.8	65.5	88.2	106.6
	Change, %		*(0.3)*	*(0.8)*	*(1.3)*	*11.8*	*11.5*	*19.1*	*16.2*	*79.0*	*32.8*	*9.9*
Metal	**Gold**	1,185.6	1,195.8	1,174.2	1,224.5	1,293.4	1,328.8	1,291.0	1,302.6	1,248.5	1,258.6	1,295.6
	Change, %		*(0.9)*	*1.0*	*(3.2)*	*(8.3)*	*(10.8)*	*(8.2)*	*(9.0)*	*(5.0)*	*(5.8)*	*(8.5)*
	Silver	14.5	14.8	14.7	15.4	16.5	16.5	17.1	16.9	17.1	17.1	16.4
	Change, %		*(1.7)*	*(1.0)*	*(5.7)*	*(11.9)*	*(12.2)*	*(15.2)*	*(14.4)*	*(15.2)*	*(15.0)*	*(11.4)*
	Copper	5,986.5	6,005.0	5,938.0	6,130.0	6,867.0	7,095.0	6,565.0	7,247.0	4,872.0	6,199.4	6,768.3
	Change, %		*(0.3)*	*0.8*	*(2.3)*	*(12.8)*	*(15.6)*	*(8.8)*	*(17.4)*	*22.9*	*(3.4)*	*(11.6)*
	Nickel	925.6	944.6	932.4	918.4	996.0	889.9	750.5	809.1	646.4	680.2	921.1
	Change, %		*(2.0)*	*(0.7)*	*0.8*	*(7.1)*	*4.0*	*23.3*	*14.4*	*43.2*	*36.1*	*0.5*
	Zinc	2,468.5	2,467.0	2,392.0	2,555.0	3,029.0	3,503.0	3,107.0	3,319.0	2,097.5	2,888.5	3,088.5
	Change, %		*0.1*	*3.2*	*(3.4)*	*(18.5)*	*(29.5)*	*(20.6)*	*(25.6)*	*17.7*	*(14.5)*	*(20.1)*
	Lead	2,053.5	2,009.5	2,032.0	2,122.0	2,480.5	2,533.0	2,360.5	2,482.8	1,868.3	2,315.7	2,380.7
	Change, %		*2.2*	*1.1*	*(3.2)*	*(17.2)*	*(18.9)*	*(13.0)*	*(17.3)*	*9.9*	*(11.3)*	*(13.7)*
	Aluminum	14,605.0	14,615.0	14,330.0	14,120.0	14,560.0	14,210.0	16,135.0	15,020.0	12,373.5	14,556.6	14,346.3
	Change, %		*(0.1)*	*1.9*	*3.4*	*0.3*	*2.8*	*(9.5)*	*(2.8)*	*18.0*	*0.3*	*1.8*
	Cobalt	63,806.0	63,806.0	63,847.0	69,750.0	92,250.0	80,725.0	60,000.0	75,205.0	25,480.1	55,906.9	80,732.7
	Change, %		*0.0*	*(0.1)*	*(8.5)*	*(30.8)*	*(21.0)*	*6.3*	*(15.2)*	*150.4*	*14.1*	*(21.0)*
	HR Coil	901.0	901.0	904.0	916.0	881.0	745.0	621.0	662.0	519.3	620.1	836.1
	Change, %		*0.0*	*(0.3)*	*(1.6)*	*2.3*	*20.9*	*45.1*	*36.1*	*73.5*	*45.3*	*7.8*
	Scrap	376.0	376.0	380.0	394.0	395.0	385.0	372.0	367.0	275.7	344.7	389.2
	Change, %		*0.0*	*(1.1)*	*(4.6)*	*(4.8)*	*(2.3)*	*1.1*	*2.5*	*36.4*	*9.1*	*(3.4)*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		08/23	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	67.8	67.9	65.5	68.5	70.7	62.8	47.4	53.7	43.4	50.9	66.3
	Change, %		*(0.0)*	*3.6*	*(1.0)*	*(4.1)*	*8.1*	*43.0*	*26.3*	*56.4*	*33.3*	*2.3*
	Dubai	73.1	71.1	69.6	71.6	77.0	61.6	50.6	53.8	41.3	53.1	69.1
	Change, %		*2.9*	*5.1*	*2.2*	*(5.0)*	*18.7*	*44.7*	*35.9*	*77.1*	*37.8*	*5.8*
Crude Oil	**Gasoline(휘발유)**	85.4	83.9	84.2	83.2	91.0	75.2	67.9	69.8	56.3	68.0	81.6
Product	*Change, %*		*1.8*	*1.5*	*2.7*	*(6.2)*	*13.6*	*25.9*	*22.3*	*51.9*	*25.6*	*4.7*
	Kerosene(등유)	87.7	86.0	85.0	86.3	92.5	79.3	63.1	66.4	52.9	65.2	84.5
	Change, %		*2.0*	*3.2*	*1.7*	*(5.1)*	*10.6*	*39.1*	*32.0*	*65.9*	*34.5*	*3.8*
	Diesel(경유)	88.7	86.8	85.4	84.7	92.1	76.0	63.8	65.5	52.1	65.6	83.5
	Change, %		*2.3*	*3.9*	*4.8*	*(3.6)*	*16.7*	*39.1*	*35.4*	*70.3*	*35.2*	*6.2*
	Bunker-C	69.0	67.6	67.0	69.4	70.8	56.2	47.3	52.1	35.5	49.7	63.7
	Change, %		*2.0*	*2.9*	*(0.6)*	*(2.6)*	*22.8*	*45.8*	*32.5*	*94.2*	*38.9*	*8.2*
	Naphtha	71.4	70.2	69.4	71.8	77.5	60.0	50.6	53.5	42.6	53.7	68.2
	Change, %		*1.8*	*3.0*	*(0.5)*	*(7.8)*	*19.1*	*41.2*	*33.6*	*67.7*	*32.9*	*4.7*
Dubai	**Gasoline(휘발유)**	12.3	12.8	14.6	11.6	14.0	13.6	17.3	16.0	14.9	14.9	12.5
Spread	*Change*		*(0.5)*	*(2.3)*	*0.7*	*(1.7)*	*(1.3)*	*(5.0)*	*(3.7)*	*(2.7)*	*(2.6)*	*(0.2)*
	Kerosene(등유)	14.6	14.8	15.4	14.7	15.4	17.7	12.5	12.6	11.6	12.1	15.4
	Change		*(0.3)*	*(0.8)*	*(0.1)*	*(0.9)*	*(3.1)*	*2.0*	*2.0*	*3.0*	*2.4*	*(0.8)*
	Diesel(경유)	15.6	15.7	15.8	13.1	15.0	14.4	13.3	11.7	10.8	12.5	14.4
	Change		*(0.1)*	*(0.2)*	*2.5*	*0.6*	*1.2*	*2.3*	*3.9*	*4.8*	*3.1*	*1.2*
	Bunker-C	(4.2)	(3.5)	(2.6)	(2.2)	(6.2)	(5.4)	(3.2)	(1.8)	(5.8)	(3.4)	(5.4)
	Change		*(0.7)*	*(1.6)*	*(2.0)*	*2.0*	*1.2*	*(0.9)*	*(2.4)*	*1.6*	*(0.7)*	*1.2*
	Naphtha	(1.7)	(1.0)	(0.2)	0.2	0.4	(1.6)	0.0	(0.4)	1.3	0.6	(0.9)
	Change		*(0.8)*	*(1.5)*	*(1.9)*	*(2.1)*	*(0.1)*	*(1.8)*	*(1.3)*	*(3.0)*	*(2.4)*	*(0.8)*
Refining	**Simple(단순)**	2.9	3.4	4.2	3.2	2.1	2.8	3.8	3.8	1.9	3.2	2.3
Margin	*Change*		*(0.5)*	*(1.3)*	*(0.4)*	*0.8*	*0.1*	*(0.9)*	*(0.9)*	*1.0*	*(0.3)*	*0.6*
	Complex(복합)	8.0	8.4	9.2	7.4	8.0	7.9	9.0	8.3	7.0	8.0	7.5
	Change		*(0.4)*	*(1.2)*	*0.6*	*0.1*	*0.1*	*(0.9)*	*(0.2)*	*1.1*	*0.0*	*0.5*
	Complex(lagging)	9.7	8.0	5.9	7.8	14.7	3.4	13.0	18.0	8.5	8.9	8.9
	Change		*1.7*	*3.8*	*1.9*	*(5.0)*	*6.2*	*(3.3)*	*(8.3)*	*1.2*	*0.7*	*0.7*

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

SK Energy Daily

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Petrochemical Price Data

Daily Price			08/23	08/22	08/21	08/20	08/17	08/16	08/15	08/14	08/13	08/10
Spot Price	**Naphtha**	CFR Japan	655.6	643.0	643.0	639.0	636.8	637.3	644.3	647.5	643.0	635.6
	Ethylene	CFR SE Asia	1,270.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0
	Propylene	FOB Korea	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,090.0	1,090.0	1,075.0	1,075.0
	Butadiene	FOB Korea	1,750.0	1,715.0	1,715.0	1,715.0	1,715.0	1,720.0	1,735.0	1,735.0	1,755.0	1,740.0
	HDPE	CFR FE Asia	1,290.0	1,290.0	1,290.0	1,300.0	1,300.0	1,300.0	1,300.0	1,300.0	1,300.0	1,310.0
	LDPE	CFR FE Asia	1,130.0	1,130.0	1,130.0	1,140.0	1,140.0	1,140.0	1,140.0	1,140.0	1,140.0	1,150.0
	LLDPE	CFR FE Asia	1,100.0	1,100.0	1,100.0	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0
	MEG	CFR China	936.0	933.0	933.0	925.0	908.0	900.0	903.0	914.0	914.0	909.0
	PP	CFR FE Asia	1,220.0	1,230.0	1,230.0	1,220.0	1,220.0	1,230.0	1,230.0	1,235.0	1,225.0	1,230.0
	PX	CFR China	1,220.0	1,204.7	1,204.7	1,198.7	1,179.0	1,165.3	1,139.3	1,132.8	1,116.7	1,110.7
	PTA	CFR China	985.0	985.0	985.0	970.0	960.0	940.0	930.0	917.0	913.0	913.0
	Benzene	FOB Korea	881.3	877.3	877.3	877.3	880.3	884.7	892.3	894.3	882.5	874.7
	Toluene	FOB Korea	788.5	787.0	787.0	783.0	777.0	782.0	785.0	788.0	793.0	797.0
	Xylene	FOB Korea	949.5	938.0	938.0	938.0	924.0	923.0	901.0	895.0	895.0	895.0
	SM	FOB Korea	1,408.0	1,410.0	1,410.0	1,413.0	1,415.5	1,409.0	1,420.0	1,438.0	1,446.0	1,431.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	634.5	635.5	643.0	694.0	616.5	462.0	484.5	399.5	493.5	621.4
	Change, %			*(0.2)*	*(1.3)*	*(8.6)*	*2.9*	*37.3*	*31.0*	*58.8*	*28.6*	*2.1*
	Ethylene	CFR SE Asia	1,275.0	1,275.0	1,265.0	1,135.0	1,270.0	1,165.0	990.0	1,040.9	1,090.9	1,240.6
	Change, %			*0.0*	*0.8*	*12.3*	*0.4*	*9.4*	*28.8*	*22.5*	*16.9*	*2.8*
	Propylene	CFR SE Asia	1,047.5	1,037.5	990.0	1,022.5	997.5	775.0	815.0	705.7	823.6	1,058.1
	Change, %			*1.0*	*5.8*	*2.4*	*5.0*	*35.2*	*28.5*	*48.4*	*27.2*	*(1.0)*
	Butadiene	CFR SE Asia	1,675.0	1,700.0	1,650.0	1,700.0	1,325.0	1,175.0	2,100.0	1,116.8	1,481.1	1,476.1
	Change, %			*(1.5)*	*1.5*	*(1.5)*	*26.4*	*42.6*	*(20.2)*	*50.0*	*13.1*	*13.5*
	Benzene	CFR SE Asia	890.0	877.5	830.0	870.0	835.0	775.0	822.5	646.7	838.8	867.3
	Change, %			*1.4*	*7.2*	*2.3*	*6.6*	*14.8*	*8.2*	*37.6*	*6.1*	*2.6*
	Toluene	CFR SE Asia	820.0	830.0	790.0	825.0	755.0	655.0	690.0	630.5	689.5	774.4
	Change, %			*(1.2)*	*3.8*	*(0.6)*	*8.6*	*25.2*	*18.8*	*30.1*	*18.9*	*5.9*
	Xylene	CFR SE Asia	845.0	840.0	822.5	830.0	762.5	635.0	675.0	627.7	668.8	789.5
	Change, %			*0.6*	*2.7*	*1.8*	*10.8*	*33.1*	*25.2*	*34.6*	*26.3*	*7.0*
Spread	**Ethylene**	-Naphtha	640.5	639.5	622.0	441.0	653.5	703.0	505.5	641.4	597.4	619.2
	Change, %			*0.2*	*3.0*	*45.2*	*(2.0)*	*(8.9)*	*26.7*	*(0.1)*	*7.2*	*3.4*
	Propylene	-Naphtha	413.0	402.0	347.0	328.5	381.0	313.0	330.5	306.2	330.1	436.7
	Change, %			*2.7*	*19.0*	*25.7*	*8.4*	*31.9*	*25.0*	*34.9*	*25.1*	*(5.4)*
	Butadiene	-Naphtha	1,040.5	1,064.5	1,007.0	1,006.0	708.5	713.0	1,615.5	717.3	987.6	854.7
	Change, %			*(2.3)*	*3.3*	*3.4*	*46.9*	*45.9*	*(35.6)*	*45.1*	*5.4*	*21.7*
	Benzene	-Naphtha	255.5	242.0	187.0	176.0	218.5	313.0	338.0	247.2	345.3	246.0
	Change, %			*5.6*	*36.6*	*45.2*	*16.9*	*(18.4)*	*(24.4)*	*3.4*	*(26.0)*	*3.9*
	Toluene	-Naphtha	185.5	194.5	147.0	131.0	138.5	193.0	205.5	231.0	196.0	153.0
	Change, %			*(4.6)*	*26.2*	*41.6*	*33.9*	*(3.9)*	*(9.7)*	*(19.7)*	*(5.4)*	*21.2*
	Xylene	-Naphtha	210.5	204.5	179.5	136.0	146.0	173.0	190.5	228.2	175.3	168.1
	Change, %			*2.9*	*17.3*	*54.8*	*44.2*	*21.7*	*10.5*	*(7.8)*	*20.1*	*25.2*

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	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,217.5	1,222.5	1,227.5	1,302.5	1,217.5	1,087.5	1,142.5	1,134.6	1,142.5	1,252.0
	Change, %			(0.4)	(0.8)	(6.5)	0.0	12.0	6.6	7.3	6.6	(2.8)
	MEG	CFR SE Asia	922.5	970.0	935.0	1,000.0	1,022.5	867.5	847.5	660.8	850.6	972.9
	Change, %			(4.9)	(1.3)	(7.8)	(9.8)	6.3	8.8	39.6	8.5	(5.2)
	PVC	CFR SE Asia	950.0	945.0	940.0	920.0	940.0	890.0	920.0	823.4	899.9	942.7
	Change, %			0.5	1.1	3.3	1.1	6.7	3.3	15.4	5.6	0.8
	PP	CFR SE Asia	1,232.5	1,232.5	1,242.5	1,287.5	1,247.5	1,107.5	1,032.5	978.4	1,099.6	1,257.0
	Change, %			0.0	(0.8)	(4.3)	(1.2)	11.3	19.4	26.0	12.1	(1.9)
	2-EH	CFR Korea	1,130.0	1,120.0	1,100.0	1,190.0	1,155.0	960.0	865.0	772.4	970.0	1,116.1
	Change, %			0.9	2.7	(5.0)	(2.2)	17.7	30.6	46.3	16.5	1.2
	ABS	CFR SE Asia	1,960.0	1,960.0	1,920.0	2,070.0	1,990.0	1,870.0	1,635.0	1,347.1	1,844.7	2,014.7
	Change, %			0.0	2.1	(5.3)	(1.5)	4.8	19.9	45.5	6.3	(2.7)
	SBR	CFR SE Asia	1,875.0	1,830.0	1,760.0	1,840.0	1,650.0	1,540.0	2,000.0	1,483.0	1,980.5	1,760.2
	Change, %			2.5	6.5	1.9	13.6	21.8	(6.3)	26.4	(5.3)	6.5
	SM	CFR SE Asia	1,470.0	1,475.0	1,395.0	1,432.5	1,362.5	1,192.5	1,205.0	1,064.6	1,253.8	1,406.5
	Change, %			(0.3)	5.4	2.6	7.9	23.3	22.0	38.1	17.2	4.5
	Caustic	FOB NEA	421.0	369.0	420.0	598.0	579.0	476.0	422.5	316.6	491.2	541.1
	Change, %			14.1	0.2	(29.6)	(27.3)	(11.6)	(0.4)	33.0	(14.3)	(22.2)
	PX	CFR SE Asia	1,185.0	1,117.5	1,005.0	1,012.5	962.5	815.0	855.0	790.4	844.4	985.0
	Change, %			6.0	17.9	17.0	23.1	45.4	38.6	49.9	40.3	20.3
	PO	CFR China	1,870.0	1,815.0	1,812.5	1,865.0	2,040.0	2,022.5	1,562.5	1,396.8	1,601.2	1,865.2
	Change, %			3.0	3.2	0.3	(8.3)	(7.5)	19.7	33.9	16.8	0.3
	Caprolactam	CFR SE Asia	2,155.0	2,155.0	2,155.0	2,090.0	2,190.0	1,800.0	1,850.0	1,344.9	1,936.4	2,126.2
	Change, %			0.0	0.0	3.1	(1.6)	19.7	16.5	60.2	11.3	1.4
	PTA	CFR SE Asia	972.5	920.0	855.0	842.5	802.5	652.5	642.5	613.7	667.8	820.1
	Change, %			5.7	13.7	15.4	21.2	49.0	51.4	58.5	45.6	18.6
Spread	HDPE		583.0	587.0	584.5	608.5	601.0	625.5	658.0	735.1	649.0	630.6
	Change, %			(0.7)	(0.3)	(4.2)	(3.0)	(6.8)	(11.4)	(20.7)	(10.2)	(7.5)
	MEG		288.0	334.5	292.0	306.0	406.0	405.5	363.0	261.3	357.1	351.5
	Change, %			(13.9)	(1.4)	(5.9)	(29.1)	(29.0)	(20.7)	10.2	(19.3)	(18.1)
	PVC		315.5	309.5	297.0	226.0	323.5	428.0	435.5	423.9	406.4	321.3
	Change, %			1.9	6.2	39.6	(2.5)	(26.3)	(27.6)	(25.6)	(22.4)	(1.8)
	PP		598.0	597.0	599.5	593.5	631.0	645.5	548.0	578.9	606.1	635.6
	Change, %			0.2	(0.3)	0.8	(5.2)	(7.4)	9.1	3.3	(1.3)	(5.9)
	2-EH		495.5	484.5	457.0	496.0	538.5	498.0	380.5	372.9	476.5	494.7
	Change, %			2.3	8.4	(0.1)	(8.0)	(0.5)	30.2	32.9	4.0	0.2
	ABS		1,325.5	1,324.5	1,277.0	1,376.0	1,373.5	1,408.0	1,150.5	947.6	1,351.2	1,393.3
	Change, %			0.1	3.8	(3.7)	(3.5)	(5.9)	15.2	39.9	(1.9)	(4.9)
	SBR	BD spread	200.0	130.0	110.0	140.0	325.0	365.0	(100.0)	366.2	499.4	284.1
	Change, %			53.8	81.8	42.9	(38.5)	(45.2)	(300.0)	(45.4)	(60.0)	(29.6)
	SM		835.5	839.5	752.0	738.5	746.0	730.5	720.5	665.1	760.3	785.1
	Change, %			(0.5)	11.1	13.1	12.0	14.4	16.0	25.6	9.9	6.4
	Caustic											
	Change, %											
	PX		550.5	482.0	362.0	318.5	346.0	353.0	370.5	390.9	351.0	363.6
	Change, %			14.2	52.1	72.8	59.1	55.9	48.6	40.8	56.9	51.4
	PO	propylene sprea	822.5	777.5	822.5	842.5	1,042.5	1,247.5	747.5	691.1	777.6	807.0
	Change, %			5.8	0.0	(2.4)	(21.1)	(34.1)	10.0	19.0	5.8	1.9
	Caprolactam	benzene spreac	1,265.0	1,277.5	1,325.0	1,220.0	1,355.0	1,025.0	1,027.5	698.2	1,097.6	1,258.9
	Change, %			(1.0)	(4.5)	3.7	(6.6)	23.4	23.1	81.2	15.2	0.5
	PTA	px spread	143.0	137.8	151.5	133.8	128.8	82.0	44.0	60.4	76.7	130.6
	Change, %			3.8	(5.6)	6.9	11.1	74.4	225.0	136.7	86.4	9.5

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

SK Energy Daily

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SK 증권

Global peers

	Currency	08/23	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
Petrochemical																
DowDuPont	USD	68.1	(0.9)	1.5	3.7	1.6	(7.0)	5.5	(4.4)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	97.7	(0.7)	0.4	(1.7)	(9.4)	(5.5)	15.8	5.5	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	79.1	(0.3)	2.1	(4.1)	(9.7)	(10.5)	(3.9)	(13.8)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	79.6	(0.3)	0.2	1.7	3.7	0.4	1.6	9.0	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	106.5	(0.2)	1.7	3.8	(1.8)	0.1	11.9	4.9	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	68.7	(0.1)	1.4	1.8	(0.3)	0.8	6.8	3.6	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	619	(0.8)	1.1	0.7	(6.1)	(7.2)	(5.9)	(23.6)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	975	0.2	2.2	1.8	(6.7)	(11.9)	0.8	(21.1)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,555	(0.7)	(1.1)	1.8	(7.1)	(6.8)	10.7	(7.8)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,585	(0.3)	2.4	9.0	5.4	14.9	27.3	9.0	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,136	(1.1)	1.3	9.9	(2.2)	(12.6)	3.7	(3.7)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,268	(0.7)	(0.7)	4.8	(4.8)	(4.7)	(13.8)	(17.4)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	123.0	0.0	0.0	(4.8)	2.5	17.6	25.0	21.3	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	72.4	0.0	0.0	(2.3)	(0.5)	8.3	29.3	22.7	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	113.5	3.2	4.6	4.6	3.2	9.1	22.0	15.0	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	123.0	2.5	3.8	7.9	5.6	12.8	31.6	19.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	84.5	0.7	2.9	1.0	(2.5)	6.8	11.5	8.5	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.26	1.0	1.0	(0.6)	(12.2)	(11.1)	(22.0)	(16.9)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	1.99	1.5	4.2	4.7	(11.6)	(13.9)	(37.8)	(25.5)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,269	1.8	5.7	13.3	39.2	35.9	60.5	39.5	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	119.5	0.0	0.0	(0.3)	12.5	10.0	27.3	23.2	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	81.3	(0.9)	0.6	0.3	(14.9)	(14.2)	9.4	(4.4)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	9.4	(0.3)	1.2	6.1	12.1	15.3	30.6	21.4	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	356,500	0.6	(3.0)	7.1	3.8	(8.4)	(2.6)	(12.0)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	311,000	(1.3)	(8.5)	(6.3)	(17.6)	(32.5)	(20.6)	(15.5)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	19,500	(2.5)	(1.8)	(3.7)	(29.0)	(42.3)	(44.5)	(38.3)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	100,500	0.0	(4.3)	(8.6)	(4.7)	13.4	29.5	1.0	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	45,050	(0.8)	0.0	8.3	16.0	17.9	19.3	(4.1)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	57,800	1.6	(0.3)	9.3	(10.9)	(2.7)	8.2	(8.4)	359	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
효성	KRW	6,310	(0.8)	4.6	7.9	(9.3)	(34.6)	(11.9)	(16.8)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**0.0**	**0.8**	**2.6**	**(1.9)**	**(2.1)**	**7.5**	**(1.0)**							
Refinery																
Valero	USD	118.1	2.1	6.1	11.1	(2.5)	27.7	79.7	28.5	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	72.1	0.1	3.8	3.0	4.2	26.3	64.9	31.3	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	125.0	0.0	3.7	3.3	2.5	8.2	22.5	8.2	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	152.2	1.7	5.6	10.4	5.7	61.0	62.0	33.1	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	81.6	1.8	6.4	11.8	3.5	22.2	62.7	23.7	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	42.5	(0.4)	4.5	(3.8)	0.8	35.3	37.2	2.7	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	72.9	2.0	7.6	2.7	(1.1)	61.9	159.3	42.3	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	118.4	1.2	3.0	7.2	(0.5)	28.9	43.7	17.0	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	30.7	(0.7)	2.5	(3.0)	(3.1)	16.3	31.5	(1.3)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	778.8	1.8	4.0	(2.1)	6.3	15.4	44.1	7.1	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	5,370.0	0.6	5.9	10.0	36.3	30.7	100.2	18.7	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	73.7	(0.8)	0.2	9.1	8.0	19.4	112.0	38.2	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	85.6	(0.4)	1.2	3.8	10.1	19.8	38.9	20.2	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	49.8	0.0	1.9	13.6	8.8	5.7	4.8	12.5	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	195,500	0.8	(1.8)	(0.5)	(4.6)	(2.0)	14.3	(4.4)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	119,000	(0.8)	(2.9)	6.3	5.8	0.0	2.6	1.7	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	53,200	(1.1)	(1.1)	2.9	(12.9)	(17.6)	(22.4)	(14.5)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.4**	**3.0**	**5.0**	**4.0**	**21.1**	**50.5**	**15.6**							

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

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Global peers

	Currency	08/23	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
E&P/Shale																
Exxon Mobil	USD	79	(1.1)	1.4	(2.9)	(3.7)	2.0	3.2	(5.5)	334,810	16.9	14.4	1.7	1.7	7.6	6.7
BP	GBP	558	0.5	1.6	(1.7)	(3.4)	17.1	25.4	6.7	142,729	13.0	11.7	1.4	1.4	5.0	4.7
Shell	EUR	2,538	0.5	2.5	(4.5)	(4.2)	12.4	18.6	2.3	273,051	12.0	10.2	1.3	1.3	5.6	5.2
Chevron	USD	118	(0.7)	0.4	(2.7)	(8.2)	4.9	10.8	(5.7)	226,297	14.9	13.7	1.5	1.4	6.2	5.7
Total	EUR	54	0.8	3.5	3.0	3.3	15.1	24.0	17.6	166,875	11.7	10.5	1.3	1.3	5.7	5.2
Sinopec	CNY	7	0.6	2.8	2.2	(6.3)	(0.2)	10.4	7.2	115,055	10.1	9.7	1.0	1.0	3.8	3.8
Petrochina	CNY	8	0.8	1.5	8.0	(2.3)	(1.6)	0.9	(0.4)	204,563	24.6	20.4	1.2	1.2	5.5	5.4
CNOOC	CNY	10	(1.9)	(0.9)	12.5	(9.4)	(4.9)	(7.9)	(1.8)	73,029	8.9	8.6	1.2	1.2	3.6	3.5
Gazprom	RUB	142	(1.8)	0.4	2.3	(3.1)	(3.1)	22.2	8.4	49,106	3.1	3.1	0.2	0.2	2.5	2.5
Rosneft	RUB	430	(1.7)	1.8	9.0	13.8	27.5	41.8	47.5	66,806	8.1	6.6	1.0	0.9	4.7	4.3
Anadarko	USD	63	(0.8)	1.3	(11.2)	(10.3)	3.7	46.8	17.6	32,307	21.4	15.6	2.6	2.2	6.3	5.5
Petrobras	BRL	18	(2.2)	(5.3)	(6.8)	(22.9)	(15.0)	30.5	11.5	62,477	6.6	5.5	0.6	0.6	4.4	4.1
Lukoil	USD	4,450	(1.4)	1.2	2.5	4.4	16.0	53.8	33.5	55,440	5.4	5.6	0.8	0.7	N/A	N/A
Kinder	USD	18	(1.6)	0.9	1.6	11.1	5.7	(5.4)	(0.5)	47,497	22.8	18.1	1.2	1.2	10.6	10.4
Equinor ASA	NOK	215	(0.4)	2.1	1.0	(0.1)	19.0	47.8	22.9	85,856	13.1	12.0	2.0	1.8	3.4	3.2
BHP	AUD	32	1.2	(1.1)	0.1	(4.1)	5.9	24.7	9.8	119,691	13.4	14.9	2.2	2.2	6.0	6.3
PTT E&P	THB	140	1.1	3.7	5.3	(3.1)	21.2	63.7	40.0	16,924	13.5	12.4	1.4	1.3	4.3	4.0
Petronas gas	MYR	19	(1.1)	2.3	2.7	6.3	6.3	(1.1)	7.6	9,053	19.6	19.5	2.8	2.7	10.7	10.7
Chesapeake	USD	5	(0.6)	10.1	3.8	0.9	46.3	20.3	18.2	4,269	6.0	6.0	#N/A N/A	7.2	6.7	6.6
Noble Energy	USD	30	(1.0)	1.1	(14.5)	(19.8)	(3.6)	24.6	1.4	14,276	27.0	21.7	1.3	1.3	7.0	6.1
Average		**0**	**(0.5)**	**1.6**	**0.5**	**(3.1)**	**8.7**	**22.8**	**11.9**							
PV																
WACKER	EUR	121.7	0.7	(0.6)	4.8	(18.8)	(12.4)	14.4	(25.0)	7,331	17.4	15.7	1.9	1.8	6.5	6.2
GCL-Poly	HKD	0.5	1.9	8.0	(19.4)	(43.2)	(58.5)	(40.7)	(61.4)	1,263	5.0	4.3	0.4	0.3	6.4	5.9
SunPower	USD	6.7	(1.2)	1.7	(8.6)	(23.9)	(6.3)	(25.9)	(20.4)	946	#N/A N/A	#N/A N/A	6.6	7.2	16.5	10.1
Canadian Solar	USD	13.4	1.7	2.3	6.8	(20.7)	(13.3)	(11.7)	(20.5)	786	8.9	9.3	0.8	0.7	6.6	7.3
JA Solar	USD	7.5	0.0	0.0	0.0	4.3	1.4	18.3	0.4	356	#N/A N/A	#N/A N/A	1.8	2.0	4.9	7.1
Yingli	USD	0.3	3.3	(3.1)	(18.4)	(82.4)	(80.9)	(87.7)	(81.7)	6	#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	51.6	(1.9)	1.4	(2.0)	(24.6)	(16.5)	11.0	(23.6)	5,405	31.7	16.7	1.0	0.9	7.6	4.0
한화큐셀	USD	8.3	(0.5)	2.5	41.6	12.9	(2.9)	10.8	18.4	692	14.8	30.8	#N/A N/A	#N/A N/A	8.8	9.1
OCI	KRW	108,500	(3.1)	4.3	14.7	(29.3)	(32.4)	16.7	(20.2)	2,303	0.0	12.2	0.0	0.7	0.0	5.3
웅진에너지	KRW	3,000	(0.8)	0.7	0.0	(47.6)	(60.0)	(65.7)	(63.5)	79	N/A	0.0	0.7	0.0	5.3	0.0
신성솔라에너지	KRW	1,400	(1.1)	0.7	11.6	(18.6)	(25.5)	(34.9)	(26.9)	216	N/A	0.7	0.0	5.3	0.0	2.2
Average			**(0.1)**	**1.6**	**2.8**	**(26.5)**	**(27.9)**	**(17.7)**	**(29.5)**							
Gas Company																
Towngas China	HKD	7.1	(1.3)	0.6	(10.0)	(11.6)	8.4	37.0	13.2	2,545	13.8	12.3	1.2	1.1	12.5	11.3
Kulun	HKD	7.2	(1.4)	5.4	8.8	(4.9)	(1.2)	(4.5)	(11.5)	7,404	10.5	9.1	1.2	1.1	5.8	5.3
Beijing Enterprise	HKD	36.0	(1.2)	3.6	(8.7)	(16.2)	(17.8)	(11.2)	(22.4)	5,788	6.3	5.7	0.6	0.6	11.5	11.0
ENN Energy	HKD	71.9	(5.8)	0.7	(15.8)	(10.2)	17.2	44.4	28.9	10,300	15.9	13.7	3.4	2.9	11.4	9.9
China Resources Gas	HKD	35.5	(7.3)	6.1	(2.9)	16.8	32.0	30.1	25.0	10,044	17.4	15.5	3.1	2.7	9.7	8.7
China Gas Holdings	HKD	25.6	(2.9)	(1.5)	(25.5)	(18.9)	2.2	36.2	18.3	16,529	16.4	13.9	3.8	3.2	13.2	11.2
Shenzen Gas	HKD	14.3	0.8	5.3	(1.9)	(17.2)	(11.3)	(0.1)	(3.9)	3,842	8.9	7.4	1.1	1.0	7.4	6.6
Shann Xi	CNY	7.2	(0.5)	0.1	(4.5)	(10.4)	(1.4)	(15.2)	(14.2)	1,166	16.7	14.8	1.4	1.3	#N/A N/A	#N/A N/A
Suntien	HKD	2.2	(0.5)	5.8	(3.9)	(23.9)	13.4	24.3	6.3	1,041	5.8	5.1	0.7	0.7	8.2	7.1
China Oil & Gas	HKD	0.6	1.6	0.0	3.3	1.6	(13.9)	21.6	(27.1)	461	#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			**(1.8)**	**2.6**	**(6.1)**	**(9.5)**	**2.8**	**16.2**	**1.3**							
EV																
LG화학	KRW	356,500	0.6	(3.0)	7.1	3.8	(8.4)	(2.6)	(12.0)	22,394	13.6	12.3	1.5	1.4	6.6	5.9
삼성SDI	KRW	219,500	1.9	1.4	(0.5)	7.3	20.6	16.1	7.3	13,431	20.8	14.9	1.3	1.2	13.0	10.2
Panasonic	JPY	1345.0	(0.1)	(1.2)	(5.6)	(13.9)	(18.3)	(7.8)	(18.5)	29,654	12.2	10.8	1.7	1.5	4.9	4.5
GS Yuasa	JPY	503.0	0.2	0.4	0.6	(9.0)	(16.3)	(6.2)	(10.3)	1,870	15.2	14.0	1.1	1.1	6.9	6.3
NEC	JPY	2972.0	0.5	0.1	(1.8)	(2.1)	(7.6)	1.4	(2.2)	6,958	23.4	12.8	0.9	0.8	7.1	5.3
BYD Auto	CNY	44.3	(1.0)	4.9	1.9	(18.9)	(29.4)	(8.2)	(31.9)	17,202	28.2	21.0	2.1	1.9	13.1	11.2
Tesla Motors	USD	320.1	(0.5)	(4.6)	5.6	14.7	(9.1)	(9.3)	2.8	54,607	#N/A N/A	107.6	9.6	9.1	42.8	19.3
Kandi Technologies	USD	4.1	(1.2)	(1.2)	(3.6)	(32.5)	(28.9)	14.1	(40.4)	208	#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			**0.0**	**(0.4)**	**0.5**	**(6.3)**	**(12.2)**	**(0.3)**	**(13.1)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임