SK Energy Daily

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SK 증권

1. News Summary (3 page)

2018년 9월 27일

News		Conclusion
WTI comment	원유재고 증가에 하락…WTI 1.0%↓	
Headline	한국, 미국산 LNG 최대 수입국…고유가시대 대안 '부상'	한국의 미국산 LNG 수입 증가는 카타르, 호주로부터의 수입을 줄일 것
News 1.	미국 프로필렌 재고, 4주만에 반등	Enterprise와 Dow의 PDH설비 재가동까지 재고 수준은 낮게 유지될 것
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	71.6	(1.0)	0.6	3.9	(1.6)	37.3
Dubai	$/bbl	80.0	0.4	3.9	7.6	7.6	43.8
Gasoline	$/bbl	91.2	(0.4)	1.3	6.0	11.1	28.7
Diesel	$/bbl	95.7	0.5	3.9	6.1	11.1	36.2
Complex margin	$/bbl	7.2	(0.1)	(0.2)	(0.2)	2.1	(1.7)
1M lagging	$/bbl	13.2	(0.6)	(0.8)	3.9	9.6	(0.8)
Petrochemical			%	%	%	%	%
Naphtha	$/t	711	0.2	3.0	7.7	12.3	32.2
Butadiene	$/t	1,440	0.0	(5.0)	(17.7)	(9.4)	(7.1)
HDPE	$/t	1,280	0.0	0.8	(0.8)	(5.2)	9.4
MEG	$/t	883	1.3	0.9	(6.0)	(1.1)	(0.2)
PX	$/t	1,289	0.8	3.3	5.1	36.7	54.0
SM	$/t	1,407	0.1	0.4	0.8	4.4	7.2
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.98	(2.6)	3.4	3.1	(0.4)	(1.5)
Natural rubber	$/t	1,330	0.8	1.5	0.8	(0.7)	(11.9)
Cotton	C/lbs	79.0	(1.8)	(0.8)	(4.8)	(7.9)	14.0

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	09/17	$/t	1,138	0.0	(10.8)	(9.7)	(9.0)
Propylene	09/17	$/t	1,050	1.9	0.2	3.4	22.1
Benzene	09/17	$/t	848	(2.6)	(4.8)	1.8	6.6
Toluene	09/17	$/t	850	2.4	3.7	4.3	21.4
Xylene	09/17	$/t	885	1.7	4.7	6.9	34.6
PP	09/17	$/t	1,248	0.8	1.2	(3.5)	6.9
PVC	09/17	$/t	940	(1.1)	(1.1)	0.8	(1.1)
ABS	09/17	$/t	1,870	(0.5)	(4.6)	(9.2)	(9.7)
SBR	09/17	$/t	1,745	(6.9)	(6.9)	(8.2)	(4.6)
SM	09/17	$/t	1,425	(1.6)	(3.1)	(4.5)	5.0
BPA	09/17	$/t	1,863	(5.0)	(0.4)	4.2	12.5
Caustic	09/17	$/t	429	(2.5)	1.9	(20.4)	(10.6)
2-EH	09/17	$/t	1,110	(1.8)	(1.8)	(0.9)	12.1
Caprolactam	09/17	$/t	2,160	1.4	0.2	0.5	21.3
Solar				%	%	%	%
Polysilicon	09/26	$/kg	10.6	(1.1)	(6.2)	(6.5)	(36.7)
Module	09/26	$/W	0.24	(1.2)	(4.4)	(11.5)	(25.3)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	85.8	(0.8)	1.4	7.7	6.4	6.0
Shell	EUR	2,633	(0.8)	4.8	2.7	2.3	18.2
Petrochina	CNY	9.05	1.8	1.3	11.3	23.5	11.9
Gazprom	RUB	159.3	(1.0)	1.2	10.9	15.4	29.5
Petrobras	BRL	20.2	0.5	1.1	10.3	25.9	29.8
Refinery							
Phillips66	USD	113.9	(0.9)	4.1	(4.5)	2.8	24.7
Valero	USD	116.5	(0.2)	6.2	(3.3)	5.7	55.4
JX	JPY	873.5	2.1	4.6	12.3	18.8	49.4
Neste Oil	EUR	72.7	0.3	0.1	(2.4)	9.7	93.2

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	78.6	(1.6)	(1.0)	(1.4)	(2.7)	(11.4)
DowDuPont	USD	66.9	(1.6)	(2.7)	(3.4)	0.9	(3.5)
SABIC	SAR	124.0	(1.4)	3.9	(1.0)	(2.4)	22.6
Formosa Pla.	TWD	114.5	(0.9)	1.3	1.8	4.1	23.4
Shin-Etsu	JPY	10,050	0.3	2.2	(5.1)	1.5	0.2
Renewable							
Wacker	EUR	113.0	(2.4)	(2.0)	(10.2)	3.7	(5.0)
First Solar	USD	48.55	(2.2)	(2.1)	(6.8)	(6.5)	5.2
GCL-Poly	HKD	0.56	1.8	3.7	5.7	(27.3)	(44.6)
Tesla Motors	USD	309.6	2.9	3.5	(4.1)	(9.5)	(10.3)

4. Coverage Summary

	09/21	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,339	0.7	0.9	2.9	(0.8)	(6.3)	(3.0)					
KOSPI화학	5,493	0.4	(1.6)	(0.0)	(6.1)	(9.9)	(3.2)					
LG화학	367,000	1.7	4.3	3.5	7.0	(10.3)	(5.5)	매수	400,000	9.0	14.50	1.64
롯데케미칼	284,000	0.2	(2.2)	(9.8)	(18.4)	(35.4)	(25.5)	매수	400,000	40.8	8.82	0.80
한화케미칼	18,550	1.4	(4.1)	(7.3)	(16.4)	(39.3)	(50.4)	매수	30,000	61.7	8.33	0.45
금호석유화학	96,200	1.2	(5.7)	(4.3)	(14.1)	(3.4)	26.7	매수	150,000	55.9	8.97	1.24
KCC	342,500	1.5	(0.1)	3.0	3.9	(1.6)	(10.8)	매수	400,000	16.8	29.69	0.53
OCI	109,500	0.0	(6.0)	(2.2)	(0.9)	(30.5)	(1.4)	매수	140,000	27.9	8.33	0.79
SKC	43,050	(2.6)	(8.3)	(5.2)	(5.5)	10.0	1.2	매수	50,000	16.1	11.74	1.02
SK이노베이션	200,500	1.0	(1.5)	3.4	(0.7)	(6.1)	5.0	매수	230,000	14.7	11.79	1.01
S-Oil	130,500	1.2	1.2	8.7	18.6	9.2	8.7	매수	140,000	7.3	14.90	2.18
GS	52,000	0.0	(2.6)	(3.3)	(4.9)	(19.3)	(21.3)	매수	80,000	53.8	4.82	0.59
SK가스	83,800	0.1	(5.6)	(0.7)	(7.1)	(11.1)	(19.8)	매수	130,000	55.1	7.92	0.56
포스코대우	20,000	2.8	1.0	9.9	(2.7)	(10.9)	(4.3)	매수	25,000	25.0	10.49	0.78
LG상사	21,650	0.7	(1.4)	(4.0)	(9.8)	(20.1)	(26.5)	매수	38,000	75.5	8.02	0.61
한국전력	28,750	0.2	(3.8)	(6.5)	(17.6)	(10.2)	(26.9)	매수	45,000	56.5	6.96	0.23
한국가스공사	58,700	3.7	0.0	9.1	(4.9)	22.7	35.6	매수	75,000	27.8	9.11	0.76

* 추정치는 12M fwd 기준임
* 모든 coverage 업체의 실적은 연결기준임

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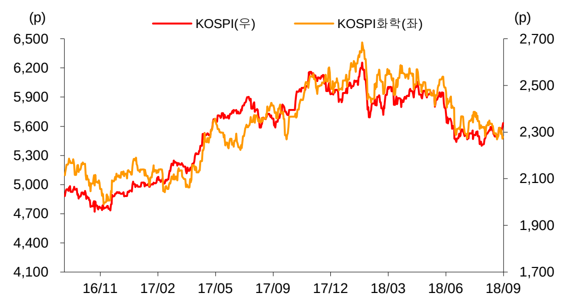
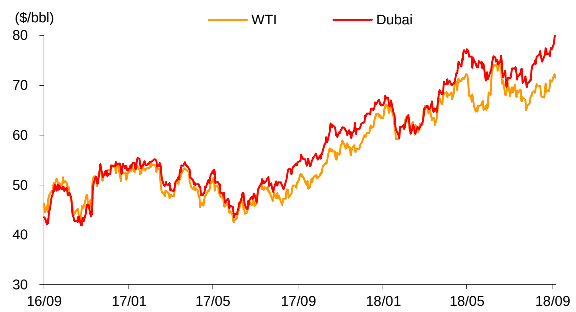
Key Chart

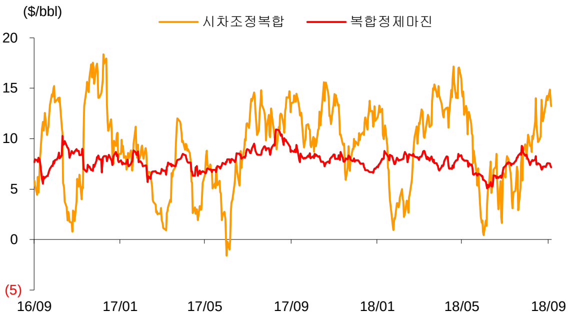
KOSPI/KOSPI화학



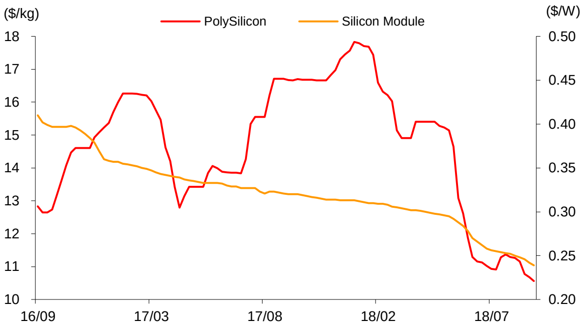
WTI/Dubai



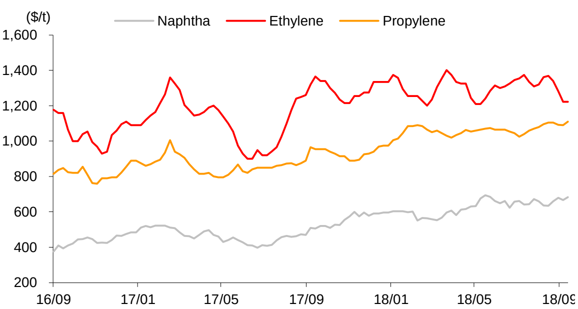
Complex & 1M lagging margin



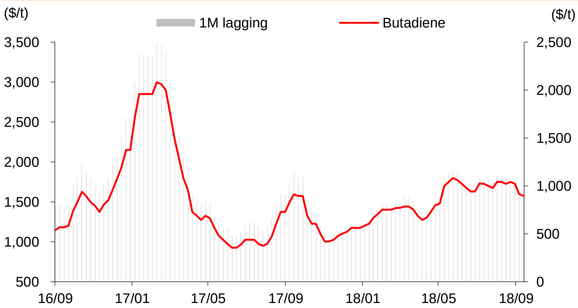
Polysilicon & Module prices



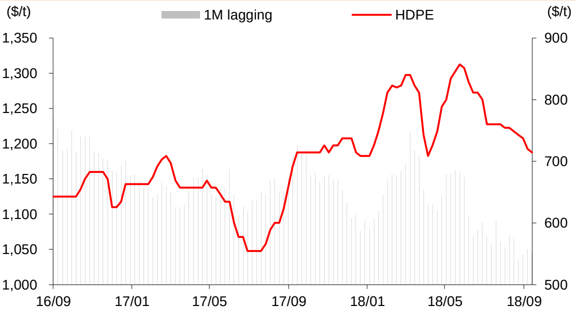
Naphtha/Ethylene/Propylene prices



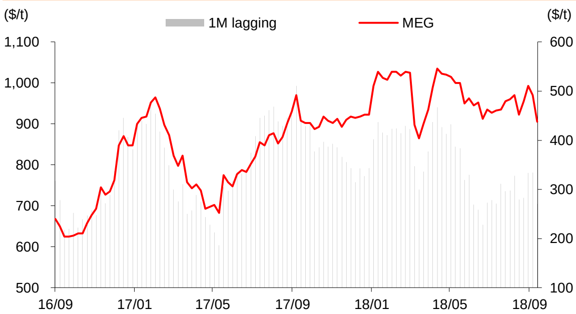
Butadiene price & 1M lagging naphtha spread



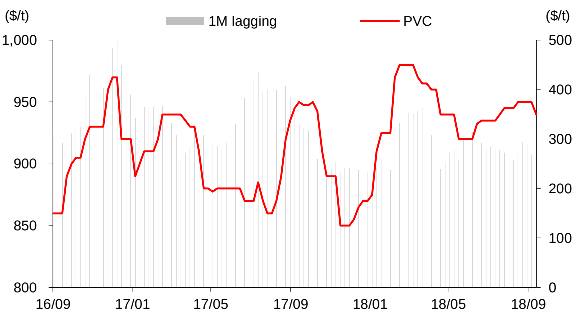
HDPE price & 1M lagging naphtha spread



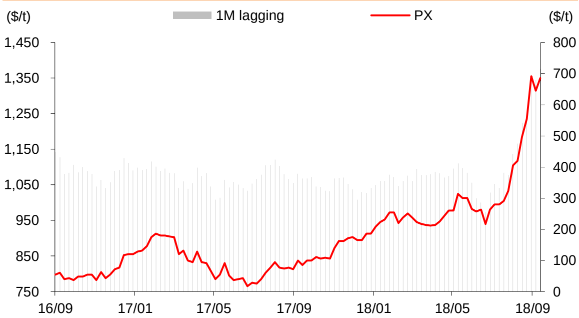
MEG price & 1M lagging naphtha spread



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	한국, 미국산 LNG 최대 수입국…고유가시대 대안 '부상'
결론	한국의 미국산 LNG 수입 증가는 카타르, 호주로부터의 수입을 줄일 것
세부	
1)	EIA, "올 상반기 수출한 LNG가 491.7bcf으로 YoY 58.2% 증가함"
2)	이 가운데 우리나라로 수출한 물량이 110.4bcf로, 전체의 22.5%를 차지
3)	이어 중국(61.9bcf), 일본(44.2bcf), 인도(61.5bcf) 등의 순으로 조사됨
4)	올 상반기 우리나라에 도입된 미국산 LNG는 작년 전체 수입량에 육박
5)	한국의 미국산 LNG 수입 증가는 카타르, 호주로부터의 수입을 줄일 것

WTI Comment	(출처: 연합뉴스)
제목	원유재고 증가에 하락…WTI 1.0%↓
상승 요인	
하락 요인	EIA, "지난주 미국 원유재고가 190만 배럴 증가"

Issue 1	(출처: Platts)
제목	미국 프로필렌 재고, 4주만에 반등
결론	Enterprise와 Dow의 PDH설비 재가동까지 재고 수준은 낮게 유지될 것
세부	
1)	9월 21일 미국 프로필렌 재고는 15,000bbl 증가함
2)	그러나 여전히 2백만bbl 미만으로 전년 동기 313.2만bbl을 하회하고 있음
3)	재고가 쌓이는 가운데 미국 정유시설 가동률은 WoW 5.3% 하락한 90.4%
4)	관계자, "최근 프로필렌 재고 감소는 2개의 PDH설비 생산 감소에 기인"
5)	Enterprise와 Dow의 PDH설비 재가동까지 재고 수준은 낮게 유지될 것

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	2016avg.	2017avg.	2018acc.
F/X	**USD/EUR**	0.852	0.850	0.857	0.861	0.859	0.804	0.848	0.833	0.904	0.887	0.838
	Change, %		*0.2*	*(0.6)*	*(1.0)*	*(0.8)*	*6.0*	*0.4*	*2.3*	*(5.8)*	*(3.9)*	*1.7*
	USD/JPY	112.7	113.0	112.3	111.2	110.1	105.4	112.2	112.6	108.8	112.1	109.6
	Change, %		*(0.2)*	*0.4*	*1.3*	*2.4*	*6.9*	*0.4*	*0.1*	*3.7*	*0.5*	*2.8*
	USD/KRW	1,117.6	1,119.4	1,120.8	1,118.9	1,114.8	1,081.2	1,136.9	1,066.7	1,160.5	1,130.9	1,091.0
	Change, %		*(0.2)*	*(0.3)*	*(0.1)*	*0.2*	*3.4*	*(1.7)*	*4.8*	*(3.7)*	*(1.2)*	*2.4*
Agriculture	**Corn**	363.0	363.8	345.8	348.5	352.5	374.0	352.3	350.8	358.5	359.4	367.7
	Change, %		*(0.2)*	*5.0*	*4.2*	*3.0*	*(2.9)*	*3.1*	*3.5*	*1.3*	*1.0*	*(1.3)*
	Soybean	850.0	845.8	830.0	842.0	867.3	1,025.5	963.5	951.8	987.5	975.9	951.1
	Change, %		*0.5*	*2.4*	*1.0*	*(2.0)*	*(17.1)*	*(11.8)*	*(10.7)*	*(13.9)*	*(12.9)*	*(10.6)*
	Wheat	517.5	520.8	522.5	514.8	469.5	454.3	453.8	427.0	436.4	436.0	489.7
	Change, %		*(0.6)*	*(1.0)*	*0.5*	*10.2*	*13.9*	*14.0*	*21.2*	*18.6*	*18.7*	*5.7*
	Rice	9.8	9.9	9.8	10.8	12.5	12.5	12.0	11.7	10.3	11.1	11.9
	Change, %		*(0.9)*	*(0.1)*	*(9.3)*	*(21.8)*	*(21.5)*	*(18.3)*	*(16.2)*	*(5.4)*	*(11.5)*	*(17.4)*
	Oats	258.5	257.0	249.3	259.5	241.3	226.5	250.3	241.0	196.3	252.3	246.0
	Change, %		*0.6*	*3.7*	*(0.4)*	*7.2*	*14.1*	*3.3*	*7.3*	*31.7*	*2.5*	*5.1*
MYR/mt	**Palm Oil**	2,145.0	2,148.0	2,127.0	2,178.0	2,280.0	2,405.0	2,755.0	2,444.0	2,653.8	2,787.3	2,348.5
	Change, %		*(0.1)*	*0.8*	*(1.5)*	*(5.9)*	*(10.8)*	*(22.1)*	*(12.2)*	*(19.2)*	*(23.0)*	*(8.7)*
	Cocoa	2,151.0	2,195.0	2,195.0	2,374.0	2,431.0	2,629.0	1,971.0	1,892.0	2,854.0	2,005.2	2,352.1
	Change, %		*(2.0)*	*(2.0)*	*(9.4)*	*(11.5)*	*(18.2)*	*9.1*	*13.7*	*(24.6)*	*7.3*	*(8.5)*
	Cotton	79.0	80.4	79.6	81.8	85.0	81.8	69.4	78.6	65.6	73.5	83.9
	Change, %		*(1.8)*	*(0.8)*	*(3.4)*	*(7.1)*	*(3.4)*	*13.9*	*0.5*	*20.4*	*7.4*	*(5.8)*
	Sugar	9.9	10.4	10.8	10.2	12.1	12.4	13.2	15.2	18.2	15.8	12.1
	Change, %		*(4.4)*	*(8.0)*	*(3.2)*	*(18.3)*	*(20.3)*	*(25.1)*	*(34.7)*	*(45.5)*	*(37.4)*	*(18.0)*
	Coffee	97.8	97.1	96.7	100.6	114.8	118.2	132.3	126.2	136.1	133.0	114.0
	Change, %		*0.7*	*1.1*	*(2.8)*	*(14.9)*	*(17.3)*	*(26.1)*	*(22.5)*	*(28.2)*	*(26.5)*	*(14.3)*
Energy	**WTI**	71.6	72.3	71.1	68.7	70.5	65.6	51.9	60.4	43.4	51.0	66.8
	Change, %		*(1.0)*	*0.6*	*4.1*	*1.5*	*9.2*	*38.0*	*18.5*	*65.0*	*40.4*	*7.2*
	Brent	81.3	81.9	79.4	75.8	76.3	70.1	58.4	66.9	45.1	54.9	72.6
	Change, %		*(0.6)*	*2.4*	*7.3*	*6.6*	*16.0*	*39.2*	*21.6*	*80.4*	*48.3*	*12.0*
	Natural Gas	3.0	3.1	2.9	2.9	2.9	2.6	2.9	3.0	2.6	3.0	2.8
	Change, %		*(2.0)*	*3.9*	*3.6*	*2.8*	*15.4*	*3.5*	*2.3*	*18.4*	*(0.0)*	*6.1*
	Ethanol	1.3	1.3	1.3	1.3	1.4	1.4	1.5	1.3	1.5	1.5	1.4
	Change, %		*0.6*	*1.4*	*(3.0)*	*(8.7)*	*(11.0)*	*(16.6)*	*(3.6)*	*(16.0)*	*(15.0)*	*(9.8)*
	RBOB Gasoline	205.9	206.8	202.1	207.8	207.5	201.0	169.9	179.9	140.0	162.9	201.1
	Change, %		*(0.4)*	*1.9*	*(0.9)*	*(0.8)*	*2.4*	*21.2*	*14.4*	*47.1*	*26.4*	*2.3*
	Coal	113.7	113.7	114.5	117.9	114.8	96.6	97.0	100.8	65.5	88.2	107.7
	Change, %		*0.0*	*(0.7)*	*(3.6)*	*(0.9)*	*17.7*	*17.2*	*12.8*	*73.7*	*28.9*	*5.6*
Metal	**Gold**	1,194.4	1,201.3	1,204.0	1,205.9	1,259.1	1,353.4	1,294.2	1,302.6	1,248.5	1,258.6	1,283.6
	Change, %		*(0.6)*	*(0.8)*	*(1.0)*	*(5.1)*	*(11.8)*	*(7.7)*	*(8.3)*	*(4.3)*	*(5.1)*	*(6.9)*
	Silver	14.3	14.5	14.2	14.8	16.3	16.7	16.8	16.9	17.1	17.1	16.1
	Change, %		*(0.9)*	*0.6*	*(3.3)*	*(12.1)*	*(14.2)*	*(14.8)*	*(15.5)*	*(16.2)*	*(16.1)*	*(11.1)*
	Copper	6,282.0	6,318.0	6,121.0	6,105.0	6,713.0	6,602.0	6,413.0	7,247.0	4,872.0	6,199.4	6,680.1
	Change, %		*(0.6)*	*2.6*	*2.9*	*(6.4)*	*(4.8)*	*(2.0)*	*(13.3)*	*28.9*	*1.3*	*(6.0)*
	Nickel	924.0	936.9	897.3	933.7	1,013.5	839.7	679.6	809.1	646.4	680.2	920.3
	Change, %		*(1.4)*	*3.0*	*(1.0)*	*(8.8)*	*10.0*	*36.0*	*14.2*	*43.0*	*35.8*	*0.4*
	Zinc	2,540.0	2,507.0	2,434.0	2,534.0	2,840.0	3,260.5	3,116.0	3,319.0	2,097.5	2,888.5	3,007.6
	Change, %		*1.3*	*4.4*	*0.2*	*(10.6)*	*(22.1)*	*(18.5)*	*(23.5)*	*21.1*	*(12.1)*	*(15.5)*
	Lead	1,973.0	1,995.8	2,016.0	2,079.0	2,411.5	2,393.0	2,482.3	2,482.8	1,868.3	2,315.7	2,337.8
	Change, %		*(1.1)*	*(2.1)*	*(5.1)*	*(18.2)*	*(17.6)*	*(20.5)*	*(20.5)*	*5.6*	*(14.8)*	*(15.6)*
	Aluminum	14,560.0	14,595.0	14,490.0	14,680.0	14,005.0	13,630.0	16,420.0	15,020.0	12,373.5	14,556.6	14,382.2
	Change, %		*(0.2)*	*0.5*	*(0.8)*	*4.0*	*6.8*	*(11.3)*	*(3.1)*	*17.7*	*0.0*	*1.2*
	Cobalt	61,854.0	61,849.0	62,567.0	63,806.0	77,250.0	94,050.0	59,369.0	75,205.0	25,480.1	55,906.9	78,464.4
	Change, %		*0.0*	*(1.1)*	*(3.1)*	*(19.9)*	*(34.2)*	*4.2*	*(17.8)*	*142.8*	*10.6*	*(21.2)*
	HR Coil	842.0	862.0	861.0	901.0	900.0	825.0	620.0	662.0	519.3	620.1	839.9
	Change, %		*(2.3)*	*(2.2)*	*(6.5)*	*(6.4)*	*2.1*	*35.8*	*27.2*	*62.1*	*35.8*	*0.2*
	Scrap	386.0	386.0	385.0	376.0	400.0	400.0	347.0	367.0	275.7	344.7	388.1
	Change, %		*0.0*	*0.3*	*2.7*	*(3.5)*	*(3.5)*	*11.2*	*5.2*	*40.0*	*12.0*	*(0.5)*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

SK Energy Daily

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Refining Price Data

Daily Price		09/21	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	71.6	72.3	71.1	68.9	72.8	64.4	52.1	53.7	43.4	50.9	66.7
	Change, %		*(1.0)*	*0.6*	*3.9*	*(1.6)*	*11.2*	*37.3*	*33.2*	*65.1*	*40.6*	*7.2*
	Dubai	80.0	79.7	77.0	74.4	74.4	65.2	55.7	53.8	41.3	53.1	70.0
	Change, %		*0.4*	*3.9*	*7.6*	*7.6*	*22.7*	*43.8*	*48.7*	*93.8*	*50.8*	*14.3*
Crude Oil Product	**Gasoline(휘발유)**	91.2	91.6	90.0	86.1	82.1	80.1	70.9	69.8	56.3	68.0	82.5
	Change, %		*(0.4)*	*1.3*	*6.0*	*11.1*	*13.8*	*28.7*	*30.6*	*62.1*	*34.1*	*10.5*
	Kerosene(등유)	94.2	93.6	91.2	88.7	86.5	81.9	70.8	66.4	52.9	65.2	85.3
	Change, %		*0.6*	*3.3*	*6.2*	*9.0*	*15.1*	*33.0*	*41.8*	*78.1*	*44.4*	*10.5*
	Diesel(경유)	95.7	95.2	92.1	90.2	86.1	81.7	70.2	65.5	52.1	65.6	84.6
	Change, %		*0.5*	*3.9*	*6.1*	*11.1*	*17.1*	*36.2*	*46.0*	*83.5*	*45.8*	*13.1*
	Bunker-C	74.0	73.6	70.3	68.3	70.5	58.3	51.7	52.1	35.5	49.7	64.5
	Change, %		*0.4*	*5.2*	*8.2*	*4.9*	*26.9*	*42.9*	*42.0*	*108.2*	*48.9*	*14.6*
	Naphtha	78.0	77.2	75.2	71.7	70.2	66.2	57.4	53.5	42.6	53.7	69.0
	Change, %		*1.0*	*3.7*	*8.7*	*11.1*	*17.9*	*36.0*	*45.9*	*83.1*	*45.1*	*13.0*
Dubai Spread	**Gasoline(휘발유)**	11.2	11.9	13.0	11.6	7.7	14.9	15.2	16.0	14.9	14.9	12.5
	Change		*(0.8)*	*(1.9)*	*(0.5)*	*3.4*	*(3.7)*	*(4.1)*	*(4.9)*	*(3.8)*	*(3.8)*	*(1.3)*
	Kerosene(등유)	14.2	14.0	14.2	14.3	12.1	16.6	15.2	12.6	11.6	12.1	15.3
	Change		*0.2*	*(0.0)*	*(0.1)*	*2.1*	*(2.4)*	*(1.0)*	*1.6*	*2.6*	*2.0*	*(1.1)*
	Diesel(경유)	15.6	15.5	15.0	15.8	11.7	16.4	14.6	11.7	10.8	12.5	14.6
	Change		*0.1*	*0.6*	*(0.2)*	*3.9*	*(0.8)*	*1.0*	*3.9*	*4.8*	*3.1*	*1.0*
	Bunker-C	(6.1)	(6.1)	(6.7)	(6.1)	(3.8)	(7.0)	(3.9)	(1.8)	(5.8)	(3.4)	(5.5)
	Change		*(0.0)*	*0.6*	*(0.0)*	*(2.3)*	*0.9*	*(2.2)*	*(4.3)*	*(0.3)*	*(2.7)*	*(0.6)*
	Naphtha	(2.1)	(2.5)	(1.8)	(2.7)	(4.2)	0.9	1.7	(0.4)	1.3	0.6	(1.0)
	Change		*0.4*	*(0.2)*	*0.6*	*2.1*	*(3.0)*	*(3.8)*	*(1.7)*	*(3.3)*	*(2.7)*	*(1.0)*
Refining Margin	**Simple(단순)**	1.6	1.7	1.5	1.8	1.1	2.6	3.8	3.8	1.9	3.2	2.2
	Change		*(0.0)*	*0.1*	*(0.2)*	*0.5*	*(1.0)*	*(2.1)*	*(2.2)*	*(0.3)*	*(1.5)*	*(0.6)*
	Complex(복합)	7.2	7.3	7.4	7.4	5.1	8.8	8.9	8.3	7.0	8.0	7.5
	Change		*(0.1)*	*(0.2)*	*(0.2)*	*2.1*	*(1.6)*	*(1.7)*	*(1.1)*	*0.2*	*(0.8)*	*(0.3)*
	Complex(lagging)	13.2	13.8	14.0	9.3	3.7	11.2	14.0	18.0	8.5	8.9	9.3
	Change		*(0.6)*	*(0.8)*	*3.9*	*9.6*	*2.0*	*(0.8)*	*(4.8)*	*4.7*	*4.3*	*3.9*

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			09/26	09/25	09/24	09/21	09/20	09/19	09/18	09/17	09/14	09/13
Spot Price	**Naphtha**	CFR Japan	710.5	709.1	701.5	690.3	693.3	689.8	682.5	683.9	683.5	686.9
	Ethylene	CFR SE Asia	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0	1,130.0	1,160.0	1,170.0	1,195.0	1,195.0
	Propylene	FOB Korea	1,135.0	1,135.0	1,135.0	1,135.0	1,130.0	1,130.0	1,120.0	1,120.0	1,120.0	1,110.0
	Butadiene	FOB Korea	1,440.0	1,440.0	1,440.0	1,440.0	1,475.0	1,515.0	1,515.0	1,530.0	1,570.0	1,575.0
	HDPE	CFR FE Asia	1,280.0	1,280.0	1,280.0	1,280.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0	1,270.0
	LDPE	CFR FE Asia	1,120.0	1,120.0	1,120.0	1,120.0	1,110.0	1,110.0	1,115.0	1,115.0	1,115.0	1,110.0
	LLDPE	CFR FE Asia	1,110.0	1,110.0	1,100.0	1,100.0	1,090.0	1,090.0	1,090.0	1,090.0	1,090.0	1,090.0
	MEG	CFR China	883.0	872.0	865.0	865.0	870.0	875.0	880.0	883.0	890.0	910.0
	PP	CFR FE Asia	1,240.0	1,235.0	1,230.0	1,230.0	1,229.0	1,230.0	1,225.0	1,230.0	1,230.0	1,230.0
	PX	CFR China	1,288.7	1,279.0	1,267.7	1,256.0	1,243.7	1,247.7	1,285.0	1,310.0	1,343.7	1,351.8
	PTA	CFR China	1,020.0	1,020.0	1,025.0	1,025.0	1,020.0	1,020.0	1,040.0	1,070.0	1,075.0	1,080.0
	Benzene	FOB Korea	854.3	848.7	842.7	838.0	842.7	841.3	843.0	843.0	847.3	849.0
	Toluene	FOB Korea	806.5	807.0	807.0	807.0	807.0	807.0	807.0	817.0	826.0	826.0
	Xylene	FOB Korea	906.0	910.5	898.5	895.5	902.5	907.5	907.5	913.5	918.0	914.0
	SM	FOB Korea	1,406.5	1,405.5	1,400.5	1,400.5	1,405.5	1,400.5	1,389.5	1,379.5	1,382.0	1,372.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	683.0	667.0	634.5	661.5	694.0	506.5	484.5	399.5	493.5	626.9
	Change, %			*2.4*	*7.6*	*3.3*	*(1.6)*	*34.8*	*41.0*	*71.0*	*38.4*	*9.0*
	Ethylene	CFR SE Asia	1,137.5	1,137.5	1,275.0	1,260.0	1,135.0	1,250.0	990.0	1,040.9	1,090.9	1,234.1
	Change, %			*0.0*	*(10.8)*	*(9.7)*	*0.2*	*(9.0)*	*14.9*	*9.3*	*4.3*	*(7.8)*
	Propylene	CFR SE Asia	1,050.0	1,030.0	1,047.5	1,015.0	1,022.5	860.0	815.0	705.7	823.6	1,062.6
	Change, %			*1.9*	*0.2*	*3.4*	*2.7*	*22.1*	*28.8*	*48.8*	*27.5*	*(1.2)*
	Butadiene	CFR SE Asia	1,525.0	1,550.0	1,675.0	1,625.0	1,700.0	1,545.0	2,100.0	1,116.8	1,481.1	1,490.8
	Change, %			*(1.6)*	*(9.0)*	*(6.2)*	*(10.3)*	*(1.3)*	*(27.4)*	*36.5*	*3.0*	*2.3*
	Benzene	CFR SE Asia	847.5	870.0	890.0	832.5	870.0	795.0	822.5	646.7	838.8	867.8
	Change, %			*(2.6)*	*(4.8)*	*1.8*	*(2.6)*	*6.6*	*3.0*	*31.1*	*1.0*	*(2.3)*
	Toluene	CFR SE Asia	850.0	830.0	820.0	815.0	825.0	700.0	690.0	630.5	689.5	780.5
	Change, %			*2.4*	*3.7*	*4.3*	*3.0*	*21.4*	*23.2*	*34.8*	*23.3*	*8.9*
	Xylene	CFR SE Asia	885.0	870.0	845.0	827.5	830.0	657.5	675.0	627.7	668.8	798.3
	Change, %			*1.7*	*4.7*	*6.9*	*6.6*	*34.6*	*31.1*	*41.0*	*32.3*	*10.9*
Spread	**Ethylene**	-Naphtha	454.5	470.5	640.5	598.5	441.0	743.5	505.5	641.4	597.4	607.2
	Change, %			*(3.4)*	*(29.0)*	*(24.1)*	*3.1*	*(38.9)*	*(10.1)*	*(29.1)*	*(23.9)*	*(25.1)*
	Propylene	-Naphtha	367.0	363.0	413.0	353.5	328.5	353.5	330.5	306.2	330.1	435.7
	Change, %			*1.1*	*(11.1)*	*3.8*	*11.7*	*3.8*	*11.0*	*19.9*	*11.2*	*(15.8)*
	Butadiene	-Naphtha	842.0	883.0	1,040.5	963.5	1,006.0	1,038.5	1,615.5	717.3	987.6	863.9
	Change, %			*(4.6)*	*(19.1)*	*(12.6)*	*(16.3)*	*(18.9)*	*(47.9)*	*17.4*	*(14.7)*	*(2.5)*
	Benzene	-Naphtha	164.5	203.0	255.5	171.0	176.0	288.5	338.0	247.2	345.3	241.0
	Change, %			*(19.0)*	*(35.6)*	*(3.8)*	*(6.5)*	*(43.0)*	*(51.3)*	*(33.4)*	*(52.4)*	*(31.7)*
	Toluene	-Naphtha	167.0	163.0	185.5	153.5	131.0	193.5	205.5	231.0	196.0	153.7
	Change, %			*2.5*	*(10.0)*	*8.8*	*27.5*	*(13.7)*	*(18.7)*	*(27.7)*	*(14.8)*	*8.7*
	Xylene	-Naphtha	202.0	203.0	210.5	166.0	136.0	151.0	190.5	228.2	175.3	171.4
	Change, %			*(0.5)*	*(4.0)*	*21.7*	*48.5*	*33.8*	*6.0*	*(11.5)*	*15.2*	*17.8*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**HDPE**	CFR SE Asia	1,187.5	1,192.5	1,217.5	1,272.5	1,302.5	1,187.5	1,142.5	1,134.6	1,142.5	1,246.4
	Change, %			*(0.4)*	*(2.5)*	*(6.7)*	*(8.8)*	*0.0*	*3.9*	*4.7*	*3.9*	*(4.7)*
	MEG	CFR SE Asia	905.0	970.0	922.5	952.5	1,000.0	907.5	847.5	660.8	850.6	971.0
	Change, %			*(6.7)*	*(1.9)*	*(5.0)*	*(9.5)*	*(0.3)*	*6.8*	*37.0*	*6.4*	*(6.8)*
	PVC	CFR SE Asia	940.0	950.0	950.0	932.5	920.0	950.0	920.0	823.4	899.9	943.2
	Change, %			*(1.1)*	*(1.1)*	*0.8*	*2.2*	*(1.1)*	*2.2*	*14.2*	*4.5*	*(0.3)*
	PP	CFR SE Asia	1,247.5	1,237.5	1,232.5	1,292.5	1,287.5	1,167.5	1,032.5	978.4	1,099.6	1,255.0
	Change, %			*0.8*	*1.2*	*(3.5)*	*(3.1)*	*6.9*	*20.8*	*27.5*	*13.5*	*(0.6)*
	2-EH	CFR Korea	1,110.0	1,130.0	1,130.0	1,120.0	1,190.0	990.0	865.0	772.4	970.0	1,116.6
	Change, %			*(1.8)*	*(1.8)*	*(0.9)*	*(6.7)*	*12.1*	*28.3*	*43.7*	*14.4*	*(0.6)*
	ABS	CFR SE Asia	1,870.0	1,880.0	1,960.0	2,060.0	2,070.0	2,070.0	1,635.0	1,347.1	1,844.7	2,000.9
	Change, %			*(0.5)*	*(4.6)*	*(9.2)*	*(9.7)*	*(9.7)*	*14.4*	*38.8*	*1.4*	*(6.5)*
	SBR	CFR SE Asia	1,745.0	1,875.0	1,875.0	1,900.0	1,840.0	1,830.0	2,000.0	1,483.0	1,980.5	1,769.1
	Change, %			*(6.9)*	*(6.9)*	*(8.2)*	*(5.2)*	*(4.6)*	*(12.8)*	*17.7*	*(11.9)*	*(1.4)*
	SM	CFR SE Asia	1,425.0	1,447.5	1,470.0	1,492.5	1,432.5	1,357.5	1,205.0	1,064.6	1,253.8	1,410.3
	Change, %			*(1.6)*	*(3.1)*	*(4.5)*	*(0.5)*	*5.0*	*18.3*	*33.9*	*13.7*	*1.0*
	Caustic	FOB NEA	429.0	440.0	421.0	539.0	598.0	480.0	422.5	316.6	491.2	528.3
	Change, %			*(2.5)*	*1.9*	*(20.4)*	*(28.3)*	*(10.6)*	*1.5*	*35.5*	*(12.7)*	*(18.8)*
	PX	CFR SE Asia	1,350.0	1,315.0	1,185.0	980.0	1,012.5	825.0	855.0	790.4	844.4	1,020.5
	Change, %			*2.7*	*13.9*	*37.8*	*33.3*	*63.6*	*57.9*	*70.8*	*59.9*	*32.3*
	PO	CFR China	1,862.5	1,960.0	1,870.0	1,787.5	1,865.0	1,655.0	1,562.5	1,396.8	1,601.2	1,870.9
	Change, %			*(5.0)*	*(0.4)*	*4.2*	*(0.1)*	*12.5*	*19.2*	*33.3*	*16.3*	*(0.5)*
	Caprolactam	CFR SE Asia	2,160.0	2,130.0	2,155.0	2,150.0	2,090.0	1,780.0	1,850.0	1,344.9	1,936.4	2,128.2
	Change, %			*1.4*	*0.2*	*0.5*	*3.3*	*21.3*	*16.8*	*60.6*	*11.5*	*1.5*
	PTA	CFR SE Asia	1,085.0	1,080.0	972.5	857.5	842.5	672.5	642.5	613.7	667.8	845.7
	Change, %			*0.5*	*11.6*	*26.5*	*28.8*	*61.3*	*68.9*	*76.8*	*62.5*	*28.3*
Spread	**HDPE**		504.5	525.5	583.0	611.0	608.5	681.0	658.0	735.1	649.0	619.5
	Change, %			*(4.0)*	*(13.5)*	*(17.4)*	*(17.1)*	*(25.9)*	*(23.3)*	*(31.4)*	*(22.3)*	*(18.6)*
	MEG		222.0	303.0	288.0	291.0	306.0	401.0	363.0	261.3	357.1	344.1
	Change, %			*(26.7)*	*(22.9)*	*(23.7)*	*(27.5)*	*(44.6)*	*(38.8)*	*(15.0)*	*(37.8)*	*(35.5)*
	PVC		257.0	283.0	315.5	271.0	226.0	443.5	435.5	423.9	406.4	316.3
	Change, %			*(9.2)*	*(18.5)*	*(5.2)*	*13.7*	*(42.1)*	*(41.0)*	*(39.4)*	*(36.8)*	*(18.7)*
	PP		564.5	570.5	598.0	631.0	593.5	661.0	548.0	578.9	606.1	628.1
	Change, %			*(1.1)*	*(5.6)*	*(10.5)*	*(4.9)*	*(14.6)*	*3.0*	*(2.5)*	*(6.9)*	*(10.1)*
	2-EH		427.0	463.0	495.5	458.5	496.0	483.5	380.5	372.9	476.5	489.7
	Change, %			*(7.8)*	*(13.8)*	*(6.9)*	*(13.9)*	*(11.7)*	*12.2*	*14.5*	*(10.4)*	*(12.8)*
	ABS		1,187.0	1,213.0	1,325.5	1,398.5	1,376.0	1,563.5	1,150.5	947.6	1,351.2	1,374.1
	Change, %			*(2.1)*	*(10.4)*	*(15.1)*	*(13.7)*	*(24.1)*	*3.2*	*25.3*	*(12.2)*	*(13.6)*
	SBR	BD spread	220.0	325.0	200.0	275.0	140.0	285.0	(100.0)	366.2	499.4	278.2
	Change, %			*(32.3)*	*10.0*	*(20.0)*	*57.1*	*(22.8)*	*(320.0)*	*(39.9)*	*(55.9)*	*(20.9)*
	SM		742.0	780.5	835.5	831.0	738.5	851.0	720.5	665.1	760.3	783.5
	Change, %			*(4.9)*	*(11.2)*	*(10.7)*	*0.5*	*(12.8)*	*3.0*	*11.6*	*(2.4)*	*(5.3)*
	Caustic											
	Change, %											
	PX		667.0	648.0	550.5	318.5	318.5	318.5	370.5	390.9	351.0	393.7
	Change, %			*2.9*	*21.2*	*109.4*	*109.4*	*109.4*	*80.0*	*70.6*	*90.1*	*69.4*
	PO	propylene sprea	812.5	930.0	822.5	772.5	842.5	795.0	747.5	691.1	777.6	808.4
	Change, %			*(12.6)*	*(1.2)*	*5.2*	*(3.6)*	*2.2*	*8.7*	*17.6*	*4.5*	*0.5*
	Caprolactam	benzene spread	1,312.5	1,260.0	1,265.0	1,317.5	1,220.0	985.0	1,027.5	698.2	1,097.6	1,260.4
	Change, %			*4.2*	*3.8*	*(0.4)*	*7.6*	*33.2*	*27.7*	*88.0*	*19.6*	*4.1*
	PTA	px spread	140.0	159.5	143.0	171.5	133.8	95.0	44.0	60.4	76.7	131.4
	Change, %			*(12.2)*	*(2.1)*	*(18.4)*	*4.7*	*47.4*	*218.2*	*131.7*	*82.5*	*6.6*

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

SK Energy Daily

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SK 증권

Global peers

	Currency	09/21	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	66.9	(1.6)	(2.7)	(3.4)	0.9	3.7	(3.5)	(6.1)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	97.7	(1.0)	(0.8)	(1.3)	(2.5)	(7.2)	12.5	5.5	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	78.6	(1.6)	(1.0)	(1.4)	(2.7)	(4.0)	(11.4)	(14.4)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	80.6	(0.2)	(1.5)	1.3	8.9	7.4	4.2	10.4	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	110.4	0.5	1.9	2.9	10.2	6.3	8.3	8.7	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	64.5	(1.5)	(1.1)	(6.1)	(2.8)	4.5	(2.3)	(2.7)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	663	(1.3)	2.8	6.4	6.3	12.6	(5.4)	(18.1)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,034	(0.8)	2.3	6.1	12.4	5.2	(1.5)	(16.4)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,050	0.3	2.2	(5.1)	1.5	(6.2)	0.2	(12.2)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,710	1.6	1.2	7.6	21.4	23.7	24.1	17.6	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,141	(1.3)	0.7	(0.1)	14.9	(7.8)	1.3	(3.5)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,600	0.1	1.0	3.5	4.5	10.8	(7.6)	(14.1)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	124.0	(1.4)	3.9	(1.0)	(2.4)	8.2	22.6	22.3	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	72.0	0.0	1.1	(1.4)	(2.0)	0.1	21.0	22.0	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	114.5	(0.9)	1.3	1.8	4.1	10.6	23.4	16.0	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	125.0	(1.2)	2.5	2.9	5.9	14.2	35.0	21.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	84.0	(0.6)	(0.9)	(0.5)	(1.6)	1.8	11.3	7.8	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.87	1.7	1.2	11.4	3.9	(1.7)	(8.7)	(7.3)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.06	1.0	2.0	3.0	9.0	(6.8)	(35.0)	(22.8)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,251	1.7	3.4	(2.0)	27.8	38.9	52.6	37.6	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	124.0	2.5	0.8	2.5	17.5	14.2	30.6	27.8	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	81.8	0.9	0.0	1.6	2.8	(17.4)	4.1	(3.8)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	9.3	(0.7)	(0.7)	(0.3)	11.1	14.6	27.6	21.3	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	367,000	0.0	1.9	0.3	5.3	(8.3)	(2.3)	(9.4)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	284,000	0.0	(0.7)	(8.8)	(19.3)	(35.5)	(23.9)	(22.8)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	18,550	0.0	(0.5)	(5.4)	(18.1)	(36.9)	(43.7)	(41.3)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	96,200	0.0	1.7	(6.1)	(17.1)	(1.6)	32.9	(3.3)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	43,050	0.0	(5.0)	(5.9)	(3.1)	14.8	3.0	(8.4)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	54,000	0.0	(0.7)	(7.4)	(11.3)	(8.5)	(0.6)	(14.4)	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	6,330	0.0	1.8	(0.5)	(6.4)	(33.7)	(5.0)	(16.5)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(0.1)**	**0.6**	**(0.2)**	**2.6**	**0.5**	**5.5**	**(0.6)**							
Refinery																
Valero	USD	116.5	(0.2)	6.2	(3.3)	5.7	23.6	55.4	26.8	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	77.3	(1.1)	2.3	6.4	14.8	30.8	55.6	40.8	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	146.0	2.8	6.6	15.0	20.2	23.2	39.0	26.4	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	157.1	(0.1)	4.6	1.2	19.3	51.4	51.4	37.4	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	84.5	(0.6)	5.0	0.8	19.8	14.7	52.6	28.1	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	39.7	(4.2)	(0.5)	(7.0)	(6.8)	22.2	7.4	(4.2)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	71.1	0.5	8.6	(3.3)	5.3	44.1	105.5	38.9	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	113.9	(0.9)	4.1	(4.5)	2.8	18.6	24.7	12.6	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	32.6	0.0	1.9	3.7	(1.8)	25.7	20.2	4.9	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	873.5	2.1	4.6	12.3	18.8	39.0	49.4	20.2	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	6,220.0	3.2	1.5	14.5	77.5	60.7	99.4	37.5	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	72.7	0.3	0.1	(2.4)	9.7	28.5	93.2	36.3	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	84.6	(1.7)	(0.8)	(0.3)	8.4	21.5	30.1	18.8	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	47.8	(0.5)	(1.8)	(3.8)	11.9	9.3	(2.5)	7.9	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	200,500	0.0	(0.5)	1.5	(3.1)	(5.4)	3.1	(2.0)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	130,500	0.0	(1.5)	6.1	13.5	9.7	4.4	11.5	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	52,000	0.0	(0.6)	(3.0)	(6.5)	(16.4)	(20.6)	(16.4)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**(0.0)**	**2.3**	**2.0**	**12.3**	**23.6**	**39.3**	**19.1**							

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

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Global peers

	Currency	09/21	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	86	(0.8)	1.4	7.7	6.4	15.9	6.0	2.6	363,176	18.3	15.2	1.9	1.8	8.2	7.1
BP	GBP	586	(0.1)	5.9	4.0	4.0	24.8	24.3	12.1	154,898	13.9	12.4	1.5	1.5	5.3	4.9
Shell	EUR	2,633	(0.8)	4.8	2.7	2.3	19.2	18.2	6.2	289,997	12.7	10.7	1.4	1.4	5.9	5.5
Chevron	USD	122	(1.2)	2.0	2.5	(1.8)	5.7	3.8	(2.6)	233,674	15.4	13.4	1.5	1.5	6.3	5.7
Total	EUR	55	(0.3)	2.6	1.0	7.7	20.8	22.5	20.4	173,679	12.1	10.8	1.4	1.3	5.8	5.2
Sinopec	CNY	7	2.8	2.0	6.6	15.9	6.5	18.6	15.3	123,396	10.7	10.3	1.1	1.1	4.1	4.0
Petrochina	CNY	9	1.8	1.3	11.3	23.5	16.8	11.9	11.9	229,738	28.2	23.0	1.4	1.3	5.8	5.6
CNOOC	CNY	12	0.3	(1.4)	9.6	23.6	(0.7)	1.6	10.0	84,854	10.4	9.5	1.4	1.3	4.1	4.0
Gazprom	RUB	159	(1.0)	1.2	10.9	15.4	15.2	29.5	22.0	57,190	3.0	3.1	0.3	0.3	2.5	2.5
Rosneft	RUB	459	(0.3)	4.7	7.1	17.8	48.8	41.8	57.3	73,704	7.8	6.7	1.0	1.0	4.6	4.3
Anadarko	USD	67	(0.3)	2.9	4.7	(8.8)	6.4	33.6	24.2	34,114	23.0	16.1	2.8	2.4	6.6	5.6
Petrobras	BRL	20	0.5	1.1	10.3	25.9	(8.4)	29.8	25.4	70,870	6.9	5.7	0.7	0.6	4.5	4.1
Lukoil	USD	4,829	(1.5)	2.3	7.3	16.2	27.1	59.8	44.8	62,431	5.6	5.8	0.9	0.8	N/A	N/A
Kinder	USD	18	(1.5)	(3.6)	(2.0)	0.3	16.4	(9.8)	(2.5)	47,497	20.4	17.7	1.1	1.2	10.5	10.4
Equinor ASA	NOK	231	(1.5)	7.3	7.3	10.0	26.6	45.3	31.8	95,130	14.4	13.0	2.2	2.0	3.7	3.4
BHP	AUD	35	1.2	6.5	5.5	5.7	20.6	33.8	16.7	126,688	14.6	15.4	2.4	2.4	6.4	6.7
PTT E&P	THB	155	1.0	1.3	11.1	17.9	31.9	71.3	55.0	18,957	14.7	13.1	1.6	1.5	4.7	4.3
Petronas gas	MYR	19	0.0	0.0	2.7	9.8	6.7	5.0	8.7	9,078	19.8	19.7	2.9	2.8	10.8	10.8
Chesapeake	USD	4	(4.8)	2.3	(3.7)	(12.5)	41.0	0.7	11.1	4,014	5.6	5.6	#N/A N/A	7.1	6.6	6.5
Noble Energy	USD	31	(0.2)	1.0	5.4	(12.2)	2.2	11.5	6.7	15,025	30.5	23.3	1.4	1.4	7.3	6.3
Average		**0**	**(0.3)**	**2.3**	**5.6**	**8.3**	**17.2**	**22.9**	**18.9**							
PV																
WACKER	EUR	113.0	(2.4)	(2.0)	(10.2)	3.7	(15.5)	(5.0)	(30.3)	6,926	16.0	14.3	1.7	1.7	6.0	5.8
GCL-Poly	HKD	0.6	1.8	3.7	5.7	(27.3)	(45.6)	(44.6)	(60.0)	1,315	9.5	7.0	0.4	0.4	7.2	6.4
SunPower	USD	7.6	(2.1)	(4.9)	11.3	(2.8)	(8.3)	4.7	(10.3)	1,066	#N/A N/A	#N/A N/A	7.3	6.7	17.3	9.6
Canadian Solar	USD	14.5	(0.9)	(2.7)	4.8	19.6	(17.0)	(9.6)	(13.8)	851	10.2	10.2	0.8	0.8	6.8	7.6
JA Solar	USD	7.5	0.0	0.0	0.0	10.6	8.9	(0.8)	0.4	356	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Yingli	USD	0.3	0.0	13.5	(5.0)	(81.5)	(82.8)	(87.6)	(83.1)	5	#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	48.6	(2.2)	(2.1)	(6.8)	(6.5)	(34.4)	5.2	(28.1)	5,088	30.0	16.1	0.9	0.9	6.5	3.4
한화큐셀	USD	8.5	(2.2)	(3.5)	1.7	38.0	10.5	11.1	20.9	707	15.2	31.4	#N/A N/A	#N/A N/A	8.9	9.1
OCI	KRW	109,500	0.0	(3.1)	0.0	2.3	(34.4)	5.8	(19.5)	2,342	0.0	12.5	0.0	0.7	0.0	5.4
웅진에너지	KRW	2,450	0.0	(2.0)	(17.5)	(37.2)	(64.2)	(68.4)	(70.2)	65	N/A	0.0	0.7	0.0	5.4	0.0
신성솔라에너지	KRW	1,315	0.0	(2.2)	(5.1)	(14.1)	(23.5)	(28.3)	(31.3)	204	N/A	0.7	0.0	5.4	0.0	2.5
Average			**(0.7)**	**(0.5)**	**(1.9)**	**(8.6)**	**(27.9)**	**(19.8)**	**(29.6)**							
Gas Company																
Towngas China	HKD	7.1	1.9	0.0	(0.1)	(8.8)	1.1	33.3	12.3	2,537	13.7	12.2	1.2	1.1	12.5	11.3
Kulun	HKD	8.9	0.7	0.8	23.0	30.0	31.1	21.3	9.2	9,191	11.3	10.0	1.5	1.3	5.7	5.2
Beijing Enterprise	HKD	42.7	1.2	3.8	20.5	10.1	1.3	4.4	(8.0)	6,902	7.2	6.5	0.7	0.7	13.8	13.0
ENN Energy	HKD	71.2	(0.4)	(3.1)	(3.7)	(10.6)	6.0	33.1	27.6	10,254	16.2	13.8	3.4	2.9	10.1	8.8
China Resources Gas	HKD	33.3	(0.9)	(6.6)	(6.6)	2.1	21.8	25.2	17.5	9,485	16.3	14.5	2.9	2.5	9.1	8.2
China Gas Holdings	HKD	23.2	0.9	(2.9)	(8.8)	(25.8)	(17.7)	1.3	7.4	15,098	14.7	12.6	3.4	2.8	12.1	10.3
Shenzen Gas	HKD	16.0	0.9	6.4	13.0	(0.1)	(1.8)	9.1	7.7	4,335	10.4	8.7	1.2	1.1	7.6	6.7
Shann Xi	CNY	7.8	1.0	0.5	9.7	12.5	14.3	(7.6)	(7.5)	1,261	18.8	16.5	1.5	1.4	#N/A N/A	#N/A N/A
Suntien	HKD	2.1	1.0	(1.4)	(5.0)	(5.5)	(4.6)	6.1	0.5	990	5.5	4.7	0.7	0.6	8.4	7.3
China Oil & Gas	HKD	0.6	1.7	(1.7)	(6.3)	(7.8)	(13.2)	11.3	(30.6)	441	#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			**0.8**	**(0.4)**	**3.5**	**(0.4)**	**3.8**	**13.8**	**3.6**							
EV																
LG화학	KRW	367,000	0.0	1.9	0.3	5.3	(8.3)	(2.3)	(9.4)	23,229	14.3	12.8	1.6	1.5	6.8	6.1
삼성SDI	KRW	256,000	0.0	(0.2)	14.3	14.3	27.0	21.9	25.2	15,784	23.4	16.4	1.5	1.4	14.7	11.4
Panasonic	JPY	1348.5	(1.5)	0.1	0.2	(9.3)	(14.1)	(15.7)	(18.2)	29,295	12.3	10.8	1.7	1.5	4.9	4.5
GS Yuasa	JPY	2834.0	(0.2)	1.8	11.8	15.4	1.6	(2.1)	1.0	2,076	9.4	8.6	0.6	0.6	7.5	6.9
NEC	JPY	3095.0	0.0	1.1	3.2	0.8	1.6	3.9	1.8	7,139	22.8	12.6	0.9	0.9	7.6	5.6
BYD Auto	CNY	48.3	0.1	2.8	11.1	4.1	(20.1)	(25.8)	(25.8)	19,204	31.2	23.2	2.3	2.1	13.6	11.7
Tesla Motors	USD	309.6	2.9	3.5	(4.1)	(9.5)	1.8	(10.3)	(0.6)	52,812	#N/A N/A	106.3	9.5	8.9	42.4	18.3
Kandi Technologies	USD	5.0	(1.0)	0.0	23.8	13.8	0.0	(5.7)	(27.2)	255	#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**	**1.4**	**7.6**	**4.4**	**(1.3)**	**(4.5)**	**(6.6)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임