SK Energy Daily

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1. News Summary (3 page)

2019년 9월 10일

News		Conclusion
WTI comment	국제유가, 사우디 감산지속 입장 속 강세…WTI 2.4%↑	
Headline	Valero Corpus Christi 공장, CDU 예기치 못한 중단	월요일에 중단된 CDU는 석유제품 가격에 미반영되어 가격지지요인될것
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	57.9	2.4	5.0	6.1	8.6	(14.6)
Dubai	$/bbl	60.1	1.5	4.3	5.8	(2.9)	(19.6)
Gasoline	$/bbl	71.4	1.8	4.3	3.7	5.6	(17.9)
Diesel	$/bbl	75.7	1.1	3.5	5.3	2.8	(16.6)
Complex margin	$/bbl	7.7	(0.4)	0.7	0.8	3.0	0.1
1M lagging	$/bbl	9.9	1.3	9.8	8.9	13.6	0.2
Petrochemical			%	%	%	%	%
Naphtha	$/t	473	0.0	3.9	4.9	3.3	(29.4)
Butadiene	$/t	1,260	0.0	(1.6)	13.0	21.2	(22.2)
HDPE	$/t	890	0.0	(1.7)	(8.2)	(10.1)	(29.9)
MEG	$/t	559	1.3	2.8	7.1	5.9	(41.5)
PX	$/t	768	0.9	1.1	(0.3)	(8.6)	(41.2)
SM	$/t	1,026	(1.9)	3.0	6.4	1.5	(26.6)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.59	3.6	13.1	22.1	8.5	(1.8)
Natural rubber	$/t	1,320	0.0	3.1	1.5	(14.3)	1.5
Cotton	C/lbs	59.1	0.7	0.1	1.9	(10.4)	(29.6)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Utility				%	%	%	%
SMP	09/09	원/kwh	80	(0.1)	0.1	0.0	(0.1)
Petrochemical				%	%	%	%
Ethylene	09/09	$/t	835	(0.6)	(2.1)	13.6	(26.6)
Propylene	09/09	$/t	850	(1.2)	(2.3)	5.3	(17.5)
Benzene	09/09	$/t	695	1.8	7.3	13.9	(20.1)
Toluene	09/09	$/t	700	1.4	2.6	9.4	(15.7)
Xylene	09/09	$/t	715	0.0	1.4	5.9	(17.8)
PP	09/09	$/t	1,003	(1.5)	(4.8)	(7.0)	(19.0)
PVC	09/09	$/t	880	0.0	2.3	4.8	(7.4)
ABS	09/09	$/t	1,370	0.0	(2.1)	(2.8)	(27.1)
SBR	09/09	$/t	1,400	0.0	8.5	0.4	(25.3)
SM	09/09	$/t	1,040	4.0	4.0	0.0	(28.2)
BPA	09/09	$/t	1,443	(1.5)	(2.7)	3.2	(26.4)
Caustic	09/09	$/t	271	0.0	(6.6)	(22.3)	(38.4)
Solar				%	%	%	%
Polysilicon	09/04	$/kg	7.66	(1.3)	(3.3)	(6.4)	(31.4)
Module	09/04	$/W	0.20	(0.5)	(2.4)	(6.5)	(18.5)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	71.5	0.8	4.4	0.9	(4.1)	(12.6)
Shell	EUR	2,277	0.8	(0.8)	(4.1)	(9.8)	(6.8)
Petrochina	CNY	6.33	1.1	2.8	2.6	(10.0)	(22.8)
Gazprom	RUB	234.9	0.2	0.5	2.1	1.9	57.8
Petrobras	BRL	26.9	1.5	6.4	2.5	0.6	41.8
Refinery							
Phillips66	USD	102.2	1.2	3.6	1.7	19.5	(10.6)
Valero	USD	79.4	1.6	5.4	0.7	6.2	(31.0)
JX	JPY	464.4	2.2	5.7	2.0	(9.9)	(35.4)
Neste Oil	EUR	28.4	(1.0)	(2.1)	(7.9)	(5.7)	(60.0)

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	62.3	1.8	3.9	6.7	1.2	(19.0)
DowDuPont	USD	70.5	1.9	3.8	2.1	(4.3)	0.7
SABIC	SAR	99.3	(0.9)	(0.9)	(4.5)	(13.7)	(17.4)
Formosa Pla.	TWD	95.2	0.0	1.3	0.0	(13.5)	(14.6)
Shin-Etsu	JPY	11,330	1.4	7.6	5.8	22.8	16.4
Renewable							
Wacker	EUR	72.4	1.3	4.3	7.3	(3.2)	(37.9)
First Solar	USD	62.00	(1.3)	(0.1)	(2.4)	(0.8)	27.8
GCL-Poly	HKD	0.33	1.6	6.6	(13.3)	(33.7)	(42.0)
Tesla Motors	USD	231.8	1.9	2.7	(1.4)	13.3	(11.9)

4. Coverage Summary

	09/09	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,020	0.5	2.6	4.2	(4.4)	(5.5)	(11.5)				* 추정치는 12M fwd 기준임(2020E)	
KOSPI화학	4,448	0.2	2.3	4.6	(6.4)	(13.0)	(19.5)				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	325,000	(1.1)	1.1	2.5	(4.7)	(10.8)	(7.7)	매수	400,000	23.1	13.04	1.50
롯데케미칼	234,500	2.4	6.3	6.1	(9.5)	(19.6)	(22.5)	매수	310,000	32.2	8.68	0.65
한화케미칼	18,150	2.3	5.5	5.5	(15.8)	(19.5)	(8.6)	매수	25,000	37.7	7.52	0.46
금호석유화학	70,800	0.1	0.7	(1.4)	(29.9)	(24.4)	(26.4)	매수	130,000	83.6	7.08	0.78
KCC	222,000	(0.2)	(1.3)	(1.1)	(17.6)	(27.8)	(35.7)	매수	350,000	57.7	27.19	0.39
OCI	66,400	0.8	0.0	(3.1)	(29.4)	(32.7)	(42.3)	매수	120,000	80.7	5.76	0.45
SKC	44,350	(1.2)	(2.4)	3.5	34.6	20.2	(5.6)	매수	45,000	1.5	14.03	1.05
SK이노베이션	165,500	0.6	0.0	3.8	1.5	(13.8)	(14.0)	매수	190,000	14.8	14.60	0.93
S-Oil	97,500	1.5	0.4	10.0	15.2	1.2	(18.1)	매수	100,000	2.6	14.37	1.51
GS	48,550	0.6	1.5	1.5	(4.6)	(5.5)	(6.1)	매수	60,000	23.6	6.44	0.53
SK가스	73,900	(2.8)	(1.6)	(0.9)	(7.5)	(12.5)	(17.4)	매수	100,000	35.3	10.58	0.46
포스코인터내셔널	18,250	(0.5)	(1.6)	4.3	4.6	(0.5)	(2.9)	매수	23,000	26.0	10.60	0.71
LG상사	17,050	0.3	(0.6)	3.6	3.0	0.6	(21.4)	매수	23,000	34.9	8.52	0.47
한국전력	24,950	0.0	(2.0)	(1.0)	(4.8)	(28.0)	(17.5)	매수	32,000	28.3	7.60	0.20
한국가스공사	39,050	(1.0)	(0.9)	(1.8)	(8.1)	(22.2)	(28.3)	매수	55,000	40.8	7.40	0.47

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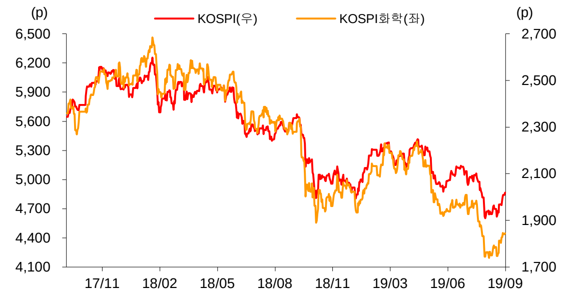
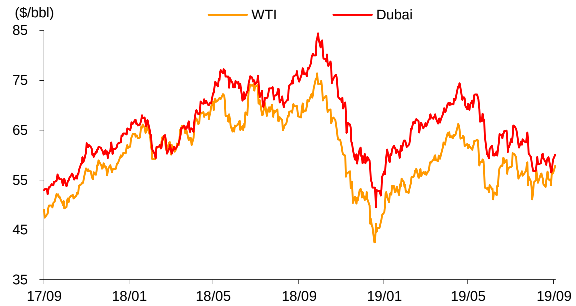
Key Chart

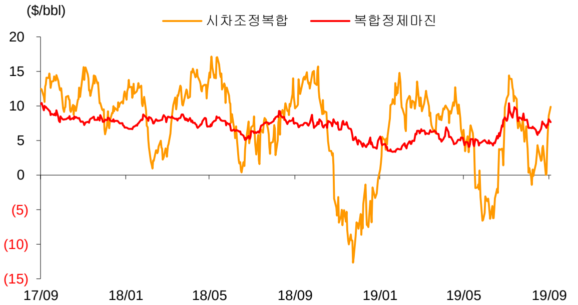
KOSPI/KOSPI화학



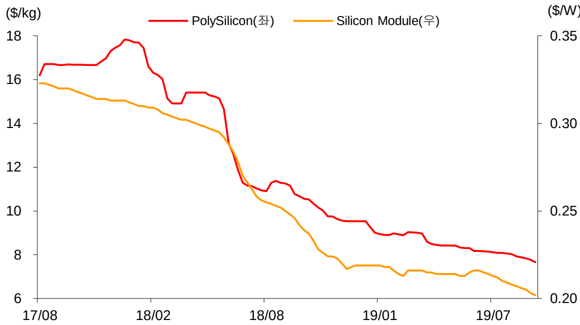
WTI/Dubai



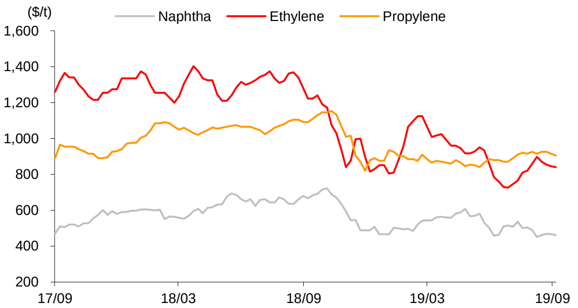
Complex & 1M lagging margin



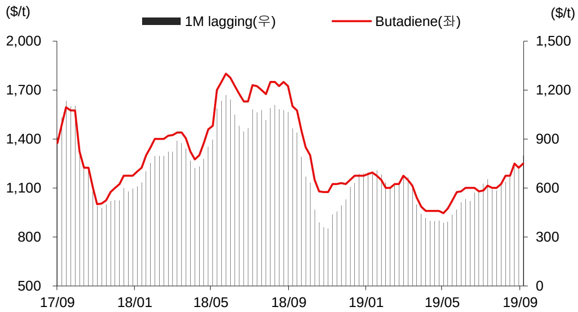
Polysilicon & Module prices



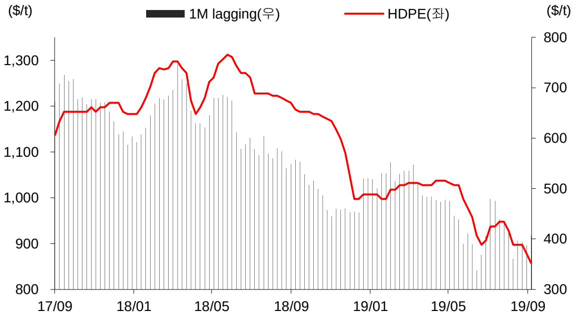
Naphtha/Ethylene/Propylene prices



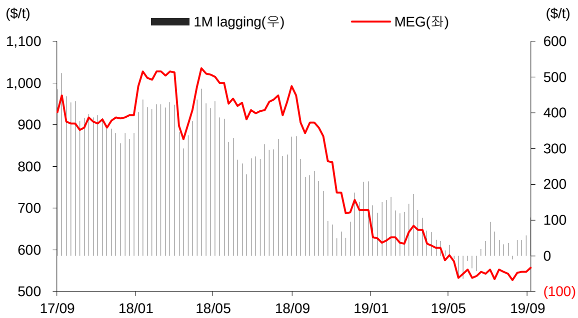
Butadiene price & 1M lagging naphtha spread



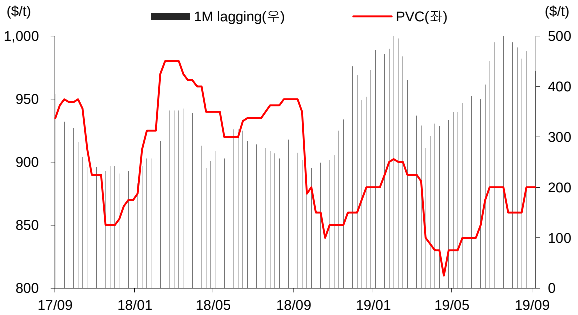
HDPE price & 1M lagging naphtha spread



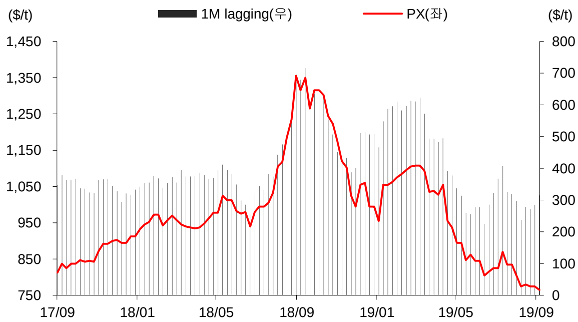
MEG price & 1M lagging naphtha spread



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: Platts)
제목	Valero Corpus Christi 공장, CDU 예기치 못한 중단
결론	월요일에 중단된 CDU는 석유제품 가격에 미반영되어 가격지지요인될것
세부	
	1) Valero Corpus Christi의 CDU는 계획되지 않았던 유지보수에 들어감
	2) EIA에 따르면, 해당 CDU는 290,000b/d capacity를 보유함
	3) 해당 유닛의 중단으로 원재료 중 저황 가솔린 수요가 늘어날 것으로 전망
	4) 저황 가솔린 수요는 최근 몇주간 낮은 크래킹 퍼포먼스로 부진하였음
	5) 월요일에 중단된 CDU는 석유제품 가격에 미반영되어 가격지지요인될것

WTI Comment	(출처: 연합뉴스)
제목	국제유가, 사우디 감산지속 입장 속 강세…WTI 2.4%↑
상승 요인	사우디아라비아 신임 에너지부 장관의 UAE 행사 내 감산 긍정적 발언
하락 요인	

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

Issue 2	
제목	
결론	
세부	
	1)
	2)
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	5)

Issue 3	
제목	
결론	
세부	
	1)
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	4)
	5)

Issue 4	
제목	
결론	
세부	
	1)
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Issue 5	
제목	
결론	
세부	
	1)
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Issue 6	
제목	
결론	
세부	
	1)
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Commodity Price Data

Daily Price		09/09	1D	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
F/X	**USD/EUR**	0.905	0.907	0.912	0.893	0.882	0.890	0.866	0.872	0.887	0.848	0.889
	Change, %		(0.2)	(0.7)	1.4	2.6	1.7	4.6	3.8	2.1	6.8	1.8
	USD/JPY	107.2	106.9	106.2	105.7	108.2	111.2	111.0	109.7	112.1	110.4	109.2
	Change, %		0.3	0.9	1.5	(0.9)	(3.5)	(3.4)	(2.3)	(4.4)	(2.9)	(1.8)
	USD/KRW	1,192.9	1,197.0	1,210.8	1,210.1	1,181.4	1,136.2	1,122.8	1,113.9	1,130.9	1,100.3	1,160.2
	Change, %		(0.3)	(1.5)	(1.4)	1.0	5.0	6.2	7.1	5.5	8.4	2.8
Agriculture	**Corn**	340.8	342.5	358.0	410.3	415.8	354.8	354.3	375.0	359.4	368.2	385.6
	Change, %		(0.5)	(4.8)	(16.9)	(18.0)	(3.9)	(3.8)	(9.1)	(5.2)	(7.5)	(11.6)
	Soybean	845.0	845.0	857.0	873.8	856.3	883.8	832.0	882.5	975.9	931.9	880.7
	Change, %		0.0	(1.4)	(3.3)	(1.3)	(4.4)	1.6	(4.2)	(13.4)	(9.3)	(4.1)
	Wheat	474.5	460.3	451.3	499.5	504.5	432.8	486.3	503.3	436.0	495.4	484.9
	Change, %		3.1	5.2	(5.0)	(5.9)	9.6	(2.4)	(5.7)	8.8	(4.2)	(2.1)
	Rice	11.7	11.7	11.7	11.4	11.7	10.6	10.8	10.1	11.1	11.5	11.0
	Change, %		(0.1)	0.1	2.7	(0.4)	10.3	7.7	15.7	5.6	1.2	6.4
	Oats	276.5	276.3	262.3	274.8	296.0	254.3	234.5	275.3	252.3	256.2	281.9
	Change, %		0.1	5.4	0.6	(6.6)	8.8	17.9	0.5	9.6	7.9	(1.9)
MYR/mt	**Palm Oil**	2,116.0	2,116.0	2,168.0	2,141.0	2,003.0	1,971.0	2,213.0	2,004.0	2,787.3	2,250.9	2,048.3
	Change, %		0.0	(2.4)	(1.2)	5.6	7.4	(4.4)	5.6	(24.1)	(6.0)	3.3
	Cocoa	2,235.0	2,216.0	2,161.0	2,195.0	2,478.0	2,199.0	2,288.0	2,416.0	2,005.2	2,308.4	2,328.3
	Change, %		0.9	3.4	1.8	(9.8)	1.6	(2.3)	(7.5)	11.5	(3.2)	(4.0)
	Cotton	59.1	58.7	59.1	59.1	65.6	73.5	82.1	72.2	73.5	82.1	68.8
	Change, %		0.7	0.1	0.1	(9.9)	(19.6)	(28.0)	(18.1)	(19.6)	(28.0)	(14.0)
	Sugar	10.9	11.0	11.1	11.9	12.5	12.2	11.0	12.0	15.8	12.3	12.3
	Change, %		(0.9)	(2.0)	(7.9)	(12.6)	(10.3)	(0.8)	(9.2)	(31.0)	(10.9)	(10.9)
	Coffee	95.0	93.9	93.6	97.3	101.0	95.3	98.8	101.9	133.0	112.7	97.6
	Change, %		1.2	1.5	(2.4)	(5.9)	(0.3)	(3.8)	(6.7)	(28.6)	(15.7)	(2.6)
Energy	**WTI**	57.9	56.5	55.1	54.5	54.0	56.1	67.8	45.4	51.0	64.8	57.0
	Change, %		2.4	5.0	6.1	7.1	3.2	(14.6)	27.4	13.5	(10.7)	1.4
	Brent	62.6	61.5	58.7	58.5	63.3	65.7	76.8	53.8	54.9	71.6	64.9
	Change, %		1.7	6.7	6.9	(1.1)	(4.8)	(18.5)	16.3	14.1	(12.5)	(3.6)
	Natural Gas	2.6	2.5	2.3	2.1	2.3	2.9	2.8	2.9	3.0	3.1	2.6
	Change, %		3.6	13.1	22.0	10.6	(9.8)	(6.9)	(12.1)	(14.5)	(15.8)	0.5
	Ethanol	1.3	1.3	1.3	1.4	1.5	1.3	1.3	1.3	1.5	1.4	1.4
	Change, %		0.5	(2.2)	(9.2)	(11.6)	0.8	1.4	3.6	(12.5)	(4.6)	(5.0)
	RBOB Gasoline	158.5	157.4	161.3	167.4	173.9	180.2	197.0	132.4	162.9	191.7	176.2
	Change, %		0.7	(1.8)	(5.3)	(8.9)	(12.0)	(19.6)	19.7	(2.7)	(17.3)	(10.1)
	Coal	65.6	66.3	65.1	67.9	72.8	95.6	114.6	102.1	88.2	107.1	83.1
	Change, %		(1.1)	0.8	(3.4)	(10.0)	(31.4)	(42.8)	(35.8)	(25.7)	(38.8)	(21.2)
Metal	**Gold**	1,499.1	1,506.7	1,529.4	1,492.3	1,340.8	1,298.4	1,196.2	1,277.1	1,258.6	1,269.3	1,352.2
	Change, %		(0.5)	(2.0)	0.5	11.8	15.5	25.3	17.4	19.1	18.1	10.9
	Silver	18.0	18.2	18.5	17.0	15.0	15.3	14.2	15.5	17.1	15.7	15.7
	Change, %		(0.9)	(2.5)	6.2	20.0	17.4	27.1	16.3	5.5	14.7	15.0
	Copper	5,833.0	5,833.0	5,620.0	5,755.0	5,799.0	6,395.0	5,933.0	5,965.0	6,199.4	6,543.8	6,078.1
	Change, %		0.0	3.8	1.4	0.6	(8.8)	(1.7)	(2.2)	(5.9)	(10.9)	(4.0)
	Nickel	1,284.8	1,262.0	1,273.2	1,114.3	847.6	914.2	888.7	740.9	680.2	897.6	926.3
	Change, %		1.8	0.9	15.3	51.6	40.5	44.6	73.4	88.9	43.1	38.7
	Zinc	2,328.0	2,328.0	2,244.0	2,234.0	2,484.0	2,711.0	2,420.0	2,467.0	2,888.5	2,893.0	2,575.3
	Change, %		0.0	3.7	4.2	(6.3)	(14.1)	(3.8)	(5.6)	(19.4)	(19.5)	(9.6)
	Lead	2,077.5	2,077.5	2,016.5	2,076.8	1,843.0	2,078.5	2,061.0	2,016.0	2,315.7	2,244.6	1,979.3
	Change, %		0.0	3.0	0.0	12.7	(0.0)	0.8	3.1	(10.3)	(7.4)	5.0
	Aluminum	14,385.0	14,400.0	14,285.0	13,905.0	14,030.0	13,670.0	14,575.0	13,550.0	14,556.6	14,252.6	13,839.9
	Change, %		(0.1)	0.7	3.5	2.5	5.2	(1.3)	6.2	(1.2)	0.9	3.9
	Cobalt	35,014.5	35,014.5	33,500.0	28,019.0	28,000.0	33,000.0	61,556.0	55,000.0	55,906.9	72,883.1	32,433.9
	Change, %		0.0	4.5	25.0	25.1	6.1	(43.1)	(36.3)	(37.4)	(52.0)	8.0
	HR Coil	565.0	565.0	560.0	603.0	582.0	705.0	865.0	721.0	620.1	828.8	636.1
	Change, %		0.0	0.9	(6.3)	(2.9)	(19.9)	(34.7)	(21.6)	(8.9)	(31.8)	(11.2)
	Scrap	260.0	270.0	274.0	293.0	280.0	373.0	379.0	379.0	344.7	390.2	324.2
	Change, %		(3.7)	(5.1)	(11.3)	(7.1)	(30.3)	(31.4)	(31.4)	(24.6)	(33.4)	(19.8)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

SK Energy Daily

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Refining Price Data

Daily Price		09/09	1D	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Crude Oil	**WTI**	57.9	56.5	55.1	54.5	53.3	56.8	67.8	46.5	50.9	64.7	57.1
	Change, %		*2.4*	*5.0*	*6.1*	*8.6*	*1.9*	*(14.6)*	*24.3*	*13.7*	*(10.6)*	*1.3*
	Dubai	60.1	59.2	57.6	56.8	61.9	66.8	74.7	51.9	53.1	69.3	64.2
	Change, %		*1.5*	*4.3*	*5.8*	*(2.9)*	*(10.0)*	*(19.6)*	*15.9*	*13.2*	*(13.3)*	*(6.4)*
Crude Oil Product	**Gasoline(휘발유)**	71.4	70.1	68.4	68.8	67.6	73.7	86.9	54.9	68.0	79.8	71.3
	Change, %		*1.8*	*4.3*	*3.7*	*5.6*	*(3.2)*	*(17.9)*	*29.9*	*4.9*	*(10.6)*	*0.0*
	Kerosene(등유)	76.6	75.4	73.6	71.8	73.6	79.9	89.7	64.5	65.2	84.7	77.6
	Change, %		*1.5*	*4.1*	*6.7*	*4.1*	*(4.1)*	*(14.6)*	*18.7*	*17.4*	*(9.5)*	*(1.3)*
	Diesel(경유)	75.7	74.9	73.2	71.9	73.7	81.0	90.8	61.6	65.6	84.0	77.5
	Change, %		*1.1*	*3.5*	*5.3*	*2.8*	*(6.5)*	*(16.6)*	*22.9*	*15.4*	*(9.8)*	*(2.3)*
	Bunker-C	56.7	58.2	52.2	50.0	60.4	66.7	68.2	50.3	49.7	65.1	62.1
	Change, %		*(2.6)*	*8.6*	*13.3*	*(6.2)*	*(15.1)*	*(16.9)*	*12.6*	*14.1*	*(13.0)*	*(8.8)*
	Naphtha	52.3	51.3	48.7	48.4	50.0	59.0	72.6	46.9	53.7	67.0	56.0
	Change, %		*1.9*	*7.3*	*8.0*	*4.7*	*(11.4)*	*(28.0)*	*11.5*	*(2.7)*	*(22.0)*	*(6.6)*
Dubai Spread	**Gasoline(휘발유)**	11.3	10.9	10.8	12.0	5.7	6.9	12.2	3.1	14.9	10.5	7.1
	Change		*0.4*	*0.5*	*(0.7)*	*5.6*	*4.3*	*(0.9)*	*8.2*	*(3.7)*	*0.7*	*4.1*
	Kerosene(등유)	16.5	16.2	15.9	14.9	11.6	13.0	14.9	12.7	12.1	15.3	13.4
	Change		*0.3*	*0.5*	*1.5*	*4.8*	*3.4*	*1.6*	*3.8*	*4.3*	*1.1*	*3.1*
	Diesel(경유)	15.6	15.6	15.5	15.1	11.8	14.1	16.1	9.8	12.5	14.6	13.3
	Change		*(0.1)*	*0.0*	*0.5*	*3.8*	*1.5*	*(0.5)*	*5.8*	*3.1*	*0.9*	*2.3*
	Bunker-C	(3.5)	(1.0)	(5.4)	(6.8)	(1.5)	(0.1)	(6.6)	(1.5)	(3.4)	(4.2)	(2.1)
	Change		*(2.4)*	*2.0*	*3.4*	*(2.0)*	*(3.3)*	*3.1*	*(1.9)*	*(0.0)*	*0.7*	*(1.4)*
	Naphtha	(7.8)	(7.9)	(8.9)	(8.4)	(12.0)	(7.8)	(2.1)	(5.0)	0.6	(2.3)	(8.2)
	Change		*0.1*	*1.1*	*0.6*	*4.1*	*(0.0)*	*(5.7)*	*(2.9)*	*(8.5)*	*(5.5)*	*0.4*
Refining Margin	**Simple(단순)**	3.3	4.4	2.2	1.6	1.8	3.4	1.8	1.7	3.2	2.5	2.4
	Change		*(1.1)*	*1.0*	*1.7*	*1.4*	*(0.2)*	*1.4*	*1.5*	*0.1*	*0.7*	*0.9*
	Complex(복합)	7.7	8.1	7.0	6.8	4.6	6.5	7.6	3.8	8.0	7.2	5.8
	Change		*(0.4)*	*0.7*	*0.8*	*3.0*	*1.2*	*0.1*	*3.9*	*(0.3)*	*0.5*	*1.9*
	Complex(lagging)	9.9	8.6	0.1	1.0	(3.8)	10.4	9.7	(2.6)	8.9	6.8	6.0
	Change		*1.3*	*9.8*	*8.9*	*13.6*	*(0.5)*	*0.2*	*12.5*	*1.0*	*3.1*	*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

Utility SMP Data

Daily Price		09/09	1D	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Electricity	**SMP**	79.5	81.7	84.3	74.7	79.4	102.8	87.6	99.0	81.5	94.5	93.5
	Change, %		*(2.6)*	*(0.1)*	*0.1*	*0.0*	*(0.2)*	*(0.1)*	*(0.2)*	*(0.0)*	*(0.2)*	*(0.1)*

자료 : EPSIS, SK증권

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Petrochemical Price Data

Daily Price			09/09	09/06	09/05	09/04	09/03	09/02	08/30	08/29	08/28	08/27
Spot Price	**Naphtha**	CFR Japan	473.3	473.3	472.6	446.6	455.6	455.6	468.1	468.0	465.0	455.0
	Ethylene	CFR SE Asia	800.0	800.0	810.0	830.0	830.0	830.0	830.0	830.0	830.0	830.0
	Propylene	FOB Korea	915.0	915.0	915.0	920.0	920.0	920.0	920.0	920.0	920.0	920.0
	Butadiene	FOB Korea	1,260.0	1,260.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0
	HDPE	CFR FE Asia	890.0	890.0	900.0	900.0	900.0	905.0	910.0	935.0	935.0	945.0
	LDPE	CFR FE Asia	880.0	880.0	880.0	880.0	880.0	900.0	915.0	925.0	925.0	940.0
	LLDPE	CFR FE Asia	820.0	820.0	820.0	820.0	830.0	830.0	830.0	855.0	855.0	860.0
	MEG	CFR China	559.0	552.0	547.0	537.0	540.0	544.0	542.0	544.0	545.0	542.0
	PP	CFR FE Asia	960.0	960.0	960.0	960.0	985.0	985.0	985.0	1,000.0	1,000.0	1,000.0
	PX	CFR China	768.0	760.8	762.7	758.7	758.3	759.3	767.3	764.0	765.0	762.7
	PTA	CFR China	660.0	660.0	660.0	653.0	655.0	655.0	655.0	655.0	655.0	655.0
	Benzene	FOB Korea	706.7	702.0	687.0	670.7	670.3	671.3	681.7	678.7	681.7	680.7
	Toluene	FOB Korea	667.0	667.0	665.0	660.0	657.0	654.0	654.0	651.5	650.5	649.5
	Xylene	FOB Korea	695.0	700.0	700.0	694.0	699.0	690.0	691.0	695.0	694.5	692.5
	SM	FOB Korea	1,026.0	1,046.0	1,023.0	1,008.0	999.0	996.0	972.5	975.5	971.5	976.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Spot Price	**Naphtha**	CFR Japan	461.5	466.5	450.5	458.0	543.5	667.0	489.9	493.5	614.2	516.5
	Change, %			*(1.1)*	*2.4*	*0.8*	*(15.1)*	*(30.8)*	*(5.8)*	*(6.5)*	*(24.9)*	*(10.7)*
	Ethylene	CFR SE Asia	835.0	840.0	852.5	735.0	955.0	1,137.5	808.1	1,090.9	1,145.9	856.9
	Change, %			*(0.6)*	*(2.1)*	*13.6*	*(12.6)*	*(26.6)*	*3.3*	*(23.5)*	*(27.1)*	*(2.6)*
	Propylene	CFR SE Asia	850.0	860.0	870.0	807.5	800.0	1,030.0	873.1	823.6	987.0	887.7
	Change, %			*(1.2)*	*(2.3)*	*5.3*	*6.3*	*(17.5)*	*(2.6)*	*3.2*	*(13.9)*	*(4.2)*
	Butadiene	CFR SE Asia	1,250.0	1,225.0	1,175.0	1,050.0	1,100.0	1,550.0	1,126.3	1,481.1	1,391.5	1,063.6
	Change, %			*2.0*	*6.4*	*19.0*	*13.6*	*(19.4)*	*11.0*	*(15.6)*	*(10.2)*	*17.5*
	Benzene	CFR SE Asia	695.0	682.5	647.5	610.0	617.5	870.0	548.8	838.8	827.8	621.9
	Change, %			*1.8*	*7.3*	*13.9*	*12.6*	*(20.1)*	*26.7*	*(17.1)*	*(16.0)*	*11.8*
	Toluene	CFR SE Asia	700.0	690.0	682.5	640.0	675.0	830.0	601.3	689.5	773.5	670.1
	Change, %			*1.4*	*2.6*	*9.4*	*3.7*	*(15.7)*	*16.4*	*1.5*	*(9.5)*	*4.5*
	Xylene	CFR SE Asia	715.0	715.0	705.0	675.0	700.0	870.0	678.8	668.8	802.5	701.3
	Change, %			*0.0*	*1.4*	*5.9*	*2.1*	*(17.8)*	*5.3*	*6.9*	*(10.9)*	*2.0*
Spread	**Ethylene**	-Naphtha	373.5	373.5	402.0	277.0	411.5	470.5	318.3	597.4	531.7	340.4
	Change, %			*0.0*	*(7.1)*	*34.8*	*(9.2)*	*(20.6)*	*17.4*	*(37.5)*	*(29.8)*	*9.7*
	Propylene	-Naphtha	388.5	393.5	419.5	349.5	256.5	363.0	383.3	330.1	372.8	371.2
	Change, %			*(1.3)*	*(7.4)*	*11.2*	*51.5*	*7.0*	*1.4*	*17.7*	*4.2*	*4.7*
	Butadiene	-Naphtha	788.5	758.5	724.5	592.0	556.5	883.0	636.4	987.6	777.3	547.1
	Change, %			*4.0*	*8.8*	*33.2*	*41.7*	*(10.7)*	*23.9*	*(20.2)*	*1.4*	*44.1*
	Benzene	-Naphtha	233.5	216.0	197.0	152.0	74.0	203.0	58.9	345.3	213.6	105.4
	Change, %			*8.1*	*18.5*	*53.6*	*215.5*	*15.0*	*296.6*	*(32.4)*	*9.3*	*121.6*
	Toluene	-Naphtha	238.5	223.5	232.0	182.0	131.5	163.0	111.4	196.0	159.3	153.6
	Change, %			*6.7*	*2.8*	*31.0*	*81.4*	*46.3*	*114.1*	*21.7*	*49.8*	*55.3*
	Xylene	-Naphtha	253.5	248.5	254.5	217.0	156.5	203.0	188.9	175.3	188.3	184.8
	Change, %			*2.0*	*(0.4)*	*16.8*	*62.0*	*24.9*	*34.2*	*44.6*	*34.6*	*37.2*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Spot Price	HDPE	CFR SE Asia	857.5	877.5	897.5	957.5	1,032.5	1,192.5	1,002.5	1,142.5	1,211.4	980.2
	Change, %			(2.3)	(4.5)	(10.4)	(16.9)	(28.1)	(14.5)	(24.9)	(29.2)	(12.5)
	MEG	CFR SE Asia	557.5	547.5	527.5	532.5	657.5	970.0	624.4	850.6	918.4	586.1
	Change, %			1.8	5.7	4.7	(15.2)	(42.5)	(10.7)	(34.5)	(39.3)	(4.9)
	PVC	CFR SE Asia	880.0	880.0	860.0	840.0	890.0	950.0	887.5	899.9	920.1	864.9
	Change, %			0.0	2.3	4.8	(1.1)	(7.4)	(0.8)	(2.2)	(4.4)	1.7
	PP	CFR SE Asia	1,002.5	1,017.5	1,052.5	1,077.5	1,117.5	1,237.5	1,076.3	1,099.6	1,236.5	1,091.4
	Change, %			(1.5)	(4.8)	(7.0)	(10.3)	(19.0)	(6.9)	(8.8)	(18.9)	(8.1)
	2-EH	CFR Korea	900.0	910.0	940.0	990.0	1,060.0	1,130.0	1,040.0	970.0	1,117.0	1,007.3
	Change, %			(1.1)	(4.3)	(9.1)	(15.1)	(20.4)	(13.5)	(7.2)	(19.4)	(10.7)
	ABS	CFR SE Asia	1,370.0	1,370.0	1,400.0	1,410.0	1,555.0	1,880.0	1,495.0	1,844.7	1,902.0	1,490.1
	Change, %			0.0	(2.1)	(2.8)	(11.9)	(27.1)	(8.4)	(25.7)	(28.0)	(8.1)
	SBR	CFR SE Asia	1,400.0	1,400.0	1,290.0	1,395.0	1,500.0	1,875.0	1,481.3	1,980.5	1,701.4	1,391.8
	Change, %			0.0	8.5	0.4	(6.7)	(25.3)	(5.5)	(29.3)	(17.7)	0.6
	SM	CFR SE Asia	1,040.0	1,000.0	1,000.0	1,040.0	1,070.0	1,447.5	997.5	1,253.8	1,343.7	1,045.0
	Change, %			4.0	4.0	0.0	(2.8)	(28.2)	4.3	(17.0)	(22.6)	(0.5)
	Caustic	FOB NEA	271.0	271.0	290.0	349.0	356.0	440.0	288.0	491.2	483.2	325.5
	Change, %			0.0	(6.6)	(22.3)	(23.9)	(38.4)	(5.9)	(44.8)	(43.9)	(16.7)
	PX	CFR SE Asia	765.0	775.0	775.0	845.0	1,107.5	1,315.0	1,031.9	844.4	1,056.0	932.8
	Change, %			(1.3)	(1.3)	(9.5)	(30.9)	(41.8)	(25.9)	(9.4)	(27.6)	(18.0)
	PO	CFR China	1,442.5	1,465.0	1,482.5	1,397.5	1,440.0	1,960.0	1,571.9	1,601.2	1,829.5	1,488.3
	Change, %			(1.5)	(2.7)	3.2	0.2	(26.4)	(8.2)	(9.9)	(21.2)	(3.1)
	Caprolactam	CFR SE Asia	1,380.0	1,430.0	1,460.0	1,490.0	1,710.0	2,130.0	1,663.8	1,936.4	2,092.4	1,594.7
	Change, %			(3.5)	(5.5)	(7.4)	(19.3)	(35.2)	(17.1)	(28.7)	(34.0)	(13.5)
	PTA	CFR SE Asia	662.5	657.5	695.0	717.5	870.0	1,080.0	817.5	667.8	869.4	793.2
	Change, %			0.8	(4.7)	(7.7)	(23.9)	(38.7)	(19.0)	(0.8)	(23.8)	(16.5)
Spread	HDPE		396.0	411.0	447.0	499.5	489.0	525.5	512.6	649.0	597.2	463.7
	Change, %			(3.6)	(11.4)	(20.7)	(19.0)	(24.6)	(22.8)	(39.0)	(33.7)	(14.6)
	MEG		96.0	81.0	77.0	74.5	114.0	303.0	134.5	357.1	304.2	69.6
	Change, %			18.5	24.7	28.9	(15.8)	(68.3)	(28.6)	(73.1)	(68.4)	37.9
	PVC		418.5	413.5	409.5	382.0	346.5	283.0	397.6	406.4	305.9	348.4
	Change, %			1.2	2.2	9.6	20.8	47.9	5.2	3.0	36.8	20.1
	PP		541.0	551.0	602.0	619.5	574.0	570.5	586.4	606.1	622.3	574.9
	Change, %			(1.8)	(10.1)	(12.7)	(5.7)	(5.2)	(7.7)	(10.7)	(13.1)	(5.9)
	2-EH		438.5	443.5	489.5	532.0	516.5	463.0	550.1	476.5	502.8	490.8
	Change, %			(1.1)	(10.4)	(17.6)	(15.1)	(5.3)	(20.3)	(8.0)	(12.8)	(10.7)
	ABS		908.5	903.5	949.5	952.0	1,011.5	1,213.0	1,005.1	1,351.2	1,287.8	973.6
	Change, %			0.6	(4.3)	(4.6)	(10.2)	(25.1)	(9.6)	(32.8)	(29.5)	(6.7)
	SBR	BD spread	150.0	175.0	115.0	345.0	400.0	325.0	355.0	499.4	310.0	328.1
	Change, %			(14.3)	30.4	(56.5)	(62.5)	(53.8)	(57.7)	(70.0)	(51.6)	(54.3)
	SM		578.5	533.5	549.5	582.0	526.5	780.5	507.6	760.3	729.5	528.5
	Change, %			8.4	5.3	(0.6)	9.9	(25.9)	14.0	(23.9)	(20.7)	9.5
	Caustic											
	Change, %											
	PX		303.5	308.5	324.5	387.0	564.0	648.0	542.0	351.0	441.8	416.2
	Change, %			(1.6)	(6.5)	(21.6)	(46.2)	(53.2)	(44.0)	(13.5)	(31.3)	(27.1)
	PO	propylene sprea	592.5	605.0	612.5	590.0	640.0	930.0	698.8	777.6	842.5	600.6
	Change, %			(2.1)	(3.3)	0.4	(7.4)	(36.3)	(15.2)	(23.8)	(29.7)	(1.3)
	Caprolactam	benzene spread	685.0	747.5	812.5	880.0	1,092.5	1,260.0	1,115.0	1,097.6	1,264.6	972.8
	Change, %			(8.4)	(15.7)	(22.2)	(37.3)	(45.6)	(38.6)	(37.6)	(45.8)	(29.6)
	PTA	px spread	127.0	115.0	152.5	126.0	94.8	159.5	95.2	76.7	130.2	140.3
	Change, %			10.4	(16.7)	0.8	34.0	(20.4)	33.4	65.6	(2.5)	(9.5)

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	09/09	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 19E	PER 20E	PBR 19E	PBR 20E	EV/EBITDA 19E	EV/EBITDA 20E
Petrochemical																
DuPont	USD	70.5	1.9	3.8	2.1	(4.3)	(9.4)	0.7	(7.3)	52,564	19.0	16.0	1.0	1.0	12.0	11.0
Corteva	USD	1,222.2	1.3	(1.9)	(9.1)	9.3	-	-	-	21,528	24.0	18.0	1.0	1.0	12.0	9.0
Eastman	USD	70.5	3.5	7.8	4.5	(1.2)	(10.8)	(27.4)	(3.6)	9,653	9.0	8.0	2.0	1.0	8.0	7.0
BASF	EUR	62.3	1.8	3.9	6.7	1.2	(6.7)	(19.0)	3.1	63,246	16.0	14.0	1.0	1.0	9.0	8.0
Akzo Nobel	EUR	81.3	(0.7)	(0.6)	(1.0)	2.7	4.3	(1.1)	2.7	18,941	26.0	20.0	3.0	3.0	13.0	12.0
Arkema	EUR	83.2	1.4	4.6	7.0	9.5	(2.3)	(19.9)	11.0	7,049	10.0	9.0	1.0	1.0	6.0	6.0
Lanxess	EUR	57.7	1.7	6.9	7.3	24.6	23.9	(12.2)	43.5	5,579	14.0	13.0	2.0	2.0	7.0	6.0
Sumitomo Chemical	JPY	485	0.6	4.5	4.5	1.0	(6.7)	(19.3)	(9.0)	7,500	8.0	8.0	1.0	1.0	6.0	5.0
Mitsubishi Chemical	JPY	787	1.1	7.1	8.4	8.2	(1.6)	(17.2)	(5.4)	11,078	7.0	7.0	1.0	1.0	7.0	7.0
Shin-Etsu Chemical	JPY	11,330	1.4	7.6	5.8	22.8	27.2	16.4	32.7	45,257	15.0	14.0	2.0	2.0	7.0	6.0
Asahi Kasei	JPY	988	0.4	2.7	5.7	(13.6)	(18.6)	(36.9)	(12.5)	12,948	10.0	9.0	1.0	1.0	6.0	5.0
JSR	JPY	1,758	(0.6)	1.2	2.4	9.9	1.7	(13.0)	6.2	3,713	13.0	11.0	1.0	1.0	7.0	6.0
Nitto Denko	JPY	5,173	(1.0)	5.6	4.8	3.2	(8.8)	(36.0)	(6.7)	7,672	15.0	14.0	1.0	1.0	5.0	4.0
SABIC	SAR	99.3	(0.9)	(0.9)	(4.5)	(13.7)	(18.3)	(17.4)	(14.5)	79,408	22.0	19.0	2.0	2.0	9.0	8.0
Yansab	SAR	53.5	0.6	(0.6)	(5.0)	(16.8)	(23.6)	(24.8)	(15.1)	8,022	19.0	17.0	2.0	2.0	10.0	10.0
Formosa Plastics	TWD	95.2	0.0	1.3	0.0	(13.5)	(8.5)	(14.6)	(5.7)	19,416	14.0	12.0	2.0	2.0	18.0	16.0
Formosa Fiber	TWD	88.4	(0.9)	1.0	(0.2)	(17.8)	(18.5)	(26.3)	(15.8)	16,600	14.0	14.0	1.0	1.0	12.0	12.0
Nan Ya Plastics	TWD	69.1	(0.1)	0.9	1.5	(12.0)	(8.6)	(17.1)	(8.5)	17,557	16.0	15.0	1.0	1.0	17.0	17.0
Sinopec Shanghai	CNY	4.32	0.5	1.9	(1.8)	(16.1)	(20.1)	(22.9)	(13.4)	5,489	16.0	16.0	2.0	2.0	6.0	7.0
Sinopec Yizheng(Fibe	CNY	2.37	1.3	1.7	10.2	(2.9)	6.8	20.9	29.5	5,096	38.0	28.0	6.0	5.0	10.0	9.0
Reliance	INR	1,222	(0.0)	(2.1)	5.2	(7.0)	(3.5)	(4.4)	9.0	108,025	16.0	13.0	2.0	2.0	11.0	9.0
Industries Qatar	QAR	11.1	0.7	0.3	6.6	(1.1)	(7.3)	(91.1)	(17.0)	18,312	20.0	18.0	2.0	2.0	141.0	112.0
PTT Chemical	THB	52.5	(0.5)	0.0	(0.9)	(15.0)	(23.1)	(33.1)	(26.3)	7,725	11.0	9.0	1.0	1.0	7.0	6.0
Petronas	MYR	7.0	0.0	1.0	(5.3)	(16.7)	(24.3)	(25.8)	(24.7)	13,396	15.0	14.0	2.0	2.0	8.0	7.0
LG화학	KRW	325,000	(1.1)	1.1	2.5	(1.7)	(10.8)	(7.7)	(6.3)	19,242	25.0	15.0	1.0	1.0	9.0	6.0
롯데케미칼	KRW	234,500	2.4	6.3	6.1	(8.4)	(19.6)	(22.5)	(15.3)	6,741	7.0	6.0	1.0	1.0	5.0	4.0
한화케미칼	KRW	18,150	2.3	5.5	5.5	(15.0)	(19.5)	(8.6)	(10.1)	2,458	8.0	6.0	0.0	0.0	9.0	8.0
금호석유	KRW	70,800	0.1	0.7	(1.4)	(24.6)	(24.4)	(26.4)	(18.9)	1,809	6.0	6.0	1.0	1.0	4.0	4.0
SKC	KRW	44,350	(1.2)	(2.4)	3.5	41.7	20.2	(5.6)	23.9	1,396	17.0	11.0	1.0	1.0	10.0	8.0
국도화학	KRW	43,200	(1.6)	(2.6)	(5.4)	(7.3)	(16.1)	(22.4)	(5.4)	211	-	-	-	-	-	-
효성	KRW	86,300	(1.6)	(0.9)	2.9	14.9	13.7	95.7	72.6	1,525	11.0	11.0	1.0	1.0	12.0	13.0
Average			**0.4**	**2.1**	**2.6**	**(2.3)**	**(7.1)**	**(14.6)**	**(0.3)**							
Refinery																
Valero	USD	79.4	1.6	5.4	0.7	6.2	(0.5)	(31.0)	5.9	32,895	15.0	8.0	2.0	1.0	8.0	5.0
Conoco Phillips	USD	55.0	2.5	5.3	1.8	(6.8)	(16.0)	(21.7)	(11.8)	61,024	13.0	13.0	2.0	2.0	5.0	5.0
Formosa Petrochemic	TWD	97.6	(0.1)	1.3	(2.9)	(15.1)	(15.9)	(21.0)	(10.5)	29,787	20.0	16.0	3.0	3.0	13.0	10.0
Marathon Petroleum	USD	53.6	2.1	8.9	10.7	14.0	(6.8)	(35.1)	(9.2)	35,273	12.0	7.0	1.0	1.0	8.0	6.0
Devon Energy	USD	24.6	5.5	12.0	2.4	(4.1)	(7.8)	(39.1)	9.3	9,955	18.0	13.0	2.0	1.0	4.0	4.0
Hollyfrontier	USD	50.4	3.7	13.7	3.9	25.8	3.3	(28.8)	(1.3)	8,300	10.0	10.0	1.0	1.0	6.0	6.0
Phillips 66	USD	102.2	1.2	3.6	1.7	19.5	8.3	(10.6)	18.6	45,828	13.0	10.0	2.0	2.0	8.0	7.0
Murphy Oil	USD	20.6	6.3	13.0	1.2	(14.0)	(29.0)	(30.7)	(11.9)	3,342	21.0	16.0	1.0	1.0	5.0	4.0
JX Holdings	JPY	464.4	2.2	5.7	2.0	(9.9)	(13.3)	(35.4)	(19.5)	14,447	7.0	6.0	1.0	1.0	6.0	6.0
Idemitsu	JPY	2,924.0	0.2	3.1	7.3	(3.3)	(24.2)	(46.8)	(19.0)	8,247	7.0	6.0	1.0	1.0	7.0	6.0
Nesteoil	EUR	28.4	(1.0)	(2.1)	(7.9)	(5.7)	(4.8)	(60.0)	26.4	24,153	17.0	15.0	4.0	4.0	11.0	10.0
Ashland	USD	74.6	0.8	1.8	(0.2)	(4.1)	(3.7)	(11.1)	5.1	4,513	27.0	21.0	1.0	1.0	13.0	12.0
Fuchs Petrolub	EUR	33.9	3.3	6.7	5.3	(3.7)	(14.0)	(30.1)	(5.8)	5,106	22.0	20.0	3.0	3.0	12.0	11.0
SK이노베이션	KRW	165,500	0.6	0.0	3.8	3.1	(13.8)	(14.0)	(7.8)	12,835	14.0	9.0	1.0	1.0	8.0	6.0
S-Oil	KRW	97,500	1.5	0.4	10.0	19.3	1.2	(18.1)	(0.2)	9,206	24.0	10.0	2.0	1.0	13.0	8.0
GS	KRW	48,550	0.6	1.5	1.5	(4.1)	(5.5)	(6.1)	(5.9)	3,783	6.0	5.0	1.0	0.0	6.0	6.0
Average			**1.9**	**5.0**	**2.6**	**1.1**	**(8.9)**	**(27.5)**	**(2.4)**							

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

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Global peers

	Currency	09/09	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 19E	PER 20E	PBR 19E	PBR 20E	EV/EBITDA 19E	EV/EBITDA 20E
E&P/Shale																
Exxon Mobil	USD	71	0.8	4.4	0.9	(4.1)	(9.5)	(12.6)	4.8	302,482	22.0	15.0	2.0	2.0	9.0	7.0
BP	GBP	505	0.8	0.2	0.4	(8.5)	(5.5)	(6.0)	1.8	126,931	12.0	10.0	1.0	1.0	5.0	5.0
Shell	EUR	2,277	0.8	(0.8)	(4.1)	(9.8)	(2.1)	(6.8)	(1.3)	224,445	12.0	10.0	1.0	1.0	5.0	5.0
Chevron	USD	119	1.0	1.4	(2.5)	(1.7)	(1.8)	4.2	9.7	226,652	17.0	14.0	1.0	1.0	6.0	6.0
Total	EUR	46	1.2	2.3	6.5	(3.1)	(8.0)	(10.9)	0.3	136,641	10.0	9.0	1.0	1.0	5.0	4.0
Sinopec	CNY	5	0.8	3.4	4.2	(5.3)	(11.3)	(22.3)	2.8	84,867	10.0	10.0	1.0	1.0	5.0	4.0
Petrochina	CNY	6	1.1	2.8	2.6	(10.0)	(17.4)	(22.8)	(12.2)	155,003	20.0	18.0	1.0	1.0	5.0	5.0
CNOOC	CNY	13	(0.4)	(0.9)	31.0	40.4	34.5	20.7	48.9	68,464	9.0	8.0	1.0	1.0	3.0	3.0
Gazprom	RUB	235	0.2	0.5	2.1	1.9	54.6	57.8	53.0	84,822	4.0	4.0	0.0	0.0	3.0	3.0
Rosneft	RUB	424	0.2	2.9	4.8	1.0	5.4	(3.6)	(2.0)	68,541	7.0	5.0	1.0	1.0	4.0	4.0
Anadarko	USD	73	0.0	0.0	0.0	3.9	73.0	14.5	66.0	36,564	43.0	45.0	-	-	7.0	7.0
Petrobras	BRL	27	1.5	6.4	2.5	0.6	1.0	41.8	18.7	91,000	10.0	9.0	1.0	1.0	5.0	5.0
Lukoil	USD	5,500	(0.5)	0.5	4.0	7.1	(3.1)	19.0	10.1	59,996	6.0	6.0	1.0	1.0	3.0	3.0
Kinder	USD	20	0.0	0.7	0.2	(3.4)	3.4	14.5	32.7	46,204	21.0	19.0	1.0	1.0	11.0	11.0
Equinor ASA	NOK	165	1.2	6.1	10.4	(3.1)	(12.7)	(21.0)	(10.0)	61,930	11.0	10.0	1.0	1.0	3.0	3.0
BHP	AUD	36	(0.5)	(1.2)	(3.1)	(4.5)	(2.0)	15.4	5.6	118,947	11.0	13.0	3.0	2.0	5.0	6.0
PTT E&P	THB	124	0.0	1.6	0.0	(0.8)	2.5	(10.8)	9.3	16,067	11.0	11.0	1.0	1.0	3.0	3.0
Petronas gas	MYR	16	0.0	(0.1)	(0.1)	(12.1)	(9.5)	(13.5)	(16.4)	7,602	17.0	18.0	2.0	2.0	9.0	9.0
Chesapeake	USD	2	19.6	31.3	31.3	0.0	(30.8)	(53.1)	(10.0)	3,089	-	-	1.0	1.0	6.0	5.0
Noble Energy	USD	24	4.6	5.2	7.2	14.8	10.9	(18.3)	26.7	11,363	-	43.0	1.0	1.0	8.0	6.0
Average			**1.6**	**3.3**	**4.9**	**0.2**	**3.6**	**(0.7)**	**11.9**							
PV																
WACKER	EUR	72.4	1.3	4.3	7.3	(3.2)	(14.0)	(37.9)	(8.5)	4,174	23.0	17.0	1.0	1.0	6.0	5.0
GCL-Poly	HKD	0.3	1.6	6.6	(13.3)	(33.7)	(48.4)	(42.0)	(31.6)	823	-	9.0	0.0	0.0	8.0	7.0
SunPower	USD	12.3	(3.7)	(1.9)	(14.2)	47.2	99.7	92.8	147.1	1,750	-	69.0	-	-	24.0	14.0
Canadian Solar	USD	21.4	(5.8)	(8.5)	(2.1)	0.4	(7.2)	46.1	49.3	1,273	7.0	7.0	1.0	1.0	7.0	5.0
LONGI Green Energy	CNY	28.0	(0.3)	(2.6)	13.3	27.6	36.6	157.1	98.3	14,815	22.0	17.0	4.0	3.0	16.0	12.0
First Solar	USD	62.0	(1.3)	(0.1)	(2.4)	(0.8)	21.2	27.8	46.0	6,534	25.0	17.0	1.0	1.0	10.0	7.0
OCI	KRW	66,400	0.8	0.0	(3.1)	(28.6)	(32.7)	(42.3)	(37.9)	1,328	-	13.0	0.0	0.0	10.0	5.0
Average			**(1.1)**	**(0.3)**	**(2.1)**	**1.3**	**7.9**	**28.8**	**37.5**							
Gas Company																
Towngas China	HKD	6.1	11.2	13.5	7.1	7.1	0.0	(15.6)	4.3	2,219	12.0	11.0	1.0	1.0	11.0	10.0
Kulun	HKD	6.9	(0.6)	1.6	3.9	(2.4)	(21.6)	(18.5)	(17.3)	7,578	8.0	7.0	1.0	1.0	5.0	5.0
Beijing Enterprise	HKD	37.6	(0.7)	0.4	0.1	(4.1)	(18.4)	(3.8)	(9.5)	6,046	6.0	5.0	1.0	1.0	12.0	12.0
ENN Energy	HKD	79.4	(0.7)	(4.0)	(3.4)	9.5	2.9	6.6	14.3	11,396	16.0	14.0	3.0	3.0	10.0	9.0
China Resources Gas	HKD	38.2	4.8	(2.9)	(5.9)	1.6	20.3	2.8	23.1	10,824	17.0	15.0	3.0	3.0	9.0	8.0
China Gas Holdings	HKD	30.2	0.2	(5.6)	(4.0)	16.6	14.0	25.9	8.1	20,072	16.0	13.0	4.0	3.0	13.0	11.0
Shenzen Gas	HKD	15.1	(0.5)	0.8	7.5	7.2	(3.8)	4.3	0.1	4,152	10.0	9.0	1.0	1.0	10.0	10.0
Shaan Xi	CNY	7.3	0.7	2.5	2.1	(8.3)	(9.3)	(0.5)	(1.9)	1,132	19.0	16.0	1.0	1.0	-	-
Suntien	HKD	2.1	1.0	2.4	12.8	2.4	(7.0)	(0.9)	5.0	1,005	5.0	4.0	1.0	1.0	7.0	7.0
China Oil & Gas	HKD	0.3	0.4	(3.8)	(21.9)	(38.3)	(55.4)	(58.3)	(52.8)	186	-	-	-	-	-	-
Average			**1.6**	**0.5**	**(0.2)**	**(0.9)**	**(7.8)**	**(5.8)**	**(2.7)**							
EV																
LG화학	KRW	325,000	(1.1)	1.1	2.5	(1.7)	(10.8)	(7.7)	(6.3)	19,242	25.0	15.0	1.0	1.0	9.0	6.0
삼성SDI	KRW	241,000	(1.2)	(2.0)	(2.6)	4.8	9.3	0.8	10.0	13,899	21.0	15.0	1.0	1.0	12.0	9.0
Panasonic	JPY	852.2	0.2	4.7	2.1	(2.0)	(13.0)	(33.1)	(14.0)	19,530	10.0	10.0	1.0	1.0	5.0	5.0
GS Yuasa	JPY	1805.0	(0.3)	1.7	(4.9)	(13.3)	(14.2)	(31.0)	(19.7)	1,395	11.0	11.0	1.0	1.0	5.0	5.0
NEC	JPY	4545.0	(1.8)	1.7	(4.1)	12.2	19.1	51.2	39.2	11,059	16.0	14.0	1.0	1.0	7.0	7.0
CATL	CNY	77.0	7.2	5.5	7.0	15.0	(9.4)	21.6	4.3	23,725	39.0	32.0	5.0	4.0	23.0	19.0
GuoXuan	CNY	13.2	2.5	4.8	14.6	5.0	(25.1)	(1.1)	13.8	2,100	20.0	17.0	2.0	2.0	16.0	13.0
Wanxiang	CNY	5.6	1.4	3.7	8.3	(1.9)	(20.8)	(5.2)	9.8	2,172	22.0	20.0	-	-	-	-
BYD Auto	CNY	51.6	2.2	3.7	1.2	4.5	0.9	20.5	1.1	18,028	47.0	41.0	2.0	2.0	13.0	12.0
Tesla Motors	USD	231.8	1.9	2.7	(1.4)	13.3	(18.4)	(11.9)	(30.4)	41,520	-	63.0	6.0	6.0	25.0	16.0
Geely	CNY	13.4	5.2	11.1	21.1	4.5	(5.0)	(11.7)	(2.8)	15,607	13.0	10.0	2.0	2.0	7.0	6.0
NIO	CNY	3.1	5.4	9.8	0.3	13.8	(55.5)	-	(50.7)	3,305	-	-	28.0	-	-	-
Average			**1.8**	**4.0**	**3.7**	**4.5**	**(11.9)**	**(0.7)**	**(3.8)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임