SK Energy Daily

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1. News Summary (3 page)

2019년 8월 20일

News		Conclusion
WTI comment	국제유가, 상승 지속…WTI 2.4%↑	
Headline	중국 Oriental Energy, Guangdong에 2 PDH 유닛 증설 계획	20-21년 증설 계획으로, 에틸렌, 프로필렌 등 화학제품 가격 하락 전망
News 1.	Pemex's Cangrejera PC Complex 아로마틱 공장 셧다운 지속	생산능력 및 내수수요 동향 감안, 셧다운으로 인한 여파는 미미할 전망
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	56.2	2.4	2.3	1.0	(10.9)	(14.7)
Dubai	$/bbl	58.4	0.3	2.8	(5.1)	(19.1)	(17.0)
Gasoline	$/bbl	68.8	(2.2)	0.0	(6.9)	(14.8)	(17.6)
Diesel	$/bbl	73.9	0.0	2.8	(4.0)	(13.6)	(14.2)
Complex margin	$/bbl	6.5	(0.3)	(0.3)	(3.3)	1.3	(2.2)
1M lagging	$/bbl	1.7	1.2	1.9	(9.8)	(4.4)	(7.0)
Petrochemical			%	%	%	%	%
Naphtha	$/t	462	(0.7)	2.5	(8.6)	(20.5)	(27.4)
Butadiene	$/t	1,115	0.0	0.0	1.4	16.1	(35.0)
HDPE	$/t	960	0.0	(1.0)	(5.9)	(7.7)	(26.2)
MEG	$/t	540	0.0	3.4	(1.1)	2.7	(40.5)
PX	$/t	774	0.4	0.4	(6.3)	(8.0)	(34.4)
SM	$/t	976	0.0	1.2	(3.6)	(1.9)	(31.0)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.20	(1.4)	3.8	(1.3)	(17.8)	(18.9)
Natural rubber	$/t	1,300	0.8	0.0	(7.8)	(12.8)	(1.5)
Cotton	C/lbs	60.1	0.7	1.7	(3.5)	(9.0)	(26.5)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Utility				%	%	%	%
SMP	08/19	원/kwh	85	(0.0)	0.1	0.1	(0.1)
Petrochemical				%	%	%	%
Ethylene	08/19	$/t	850	(0.3)	10.4	(5.8)	(33.3)
Propylene	08/19	$/t	875	0.6	0.6	14.4	(16.5)
Benzene	08/19	$/t	643	(0.8)	(7.6)	4.0	(27.8)
Toluene	08/19	$/t	680	(0.4)	(2.9)	(0.7)	(17.1)
Xylene	08/19	$/t	713	1.1	(0.7)	(1.0)	(15.7)
PP	08/19	$/t	1,048	(0.5)	(1.9)	(9.5)	(15.0)
PVC	08/19	$/t	860	0.0	(2.3)	2.4	(9.5)
ABS	08/19	$/t	1,370	(2.1)	(6.8)	(9.3)	(30.1)
SBR	08/19	$/t	1,290	0.0	(1.9)	(6.2)	(31.2)
SM	08/19	$/t	1,000	0.0	(3.4)	(5.9)	(32.0)
BPA	08/19	$/t	1,538	3.7	10.8	11.4	(17.8)
Caustic	08/19	$/t	275	(5.2)	(11.6)	(19.6)	(34.7)
Solar				%	%	%	%
Polysilicon	08/14	$/kg	7.88	(0.5)	(2.5)	(5.5)	(30.7)
Module	08/14	$/W	0.21	(0.5)	(1.9)	(3.3)	(18.6)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	69.5	1.7	(0.3)	(7.4)	(8.5)	(11.3)
Shell	EUR	2,315	1.8	(2.6)	(8.8)	(8.7)	(6.4)
Petrochina	CNY	6.18	1.3	(0.2)	(5.6)	(13.8)	(22.7)
Gazprom	RUB	226.8	0.9	(1.5)	5.0	14.0	60.8
Petrobras	BRL	24.0	0.5	(6.3)	(12.4)	(2.6)	30.2
Refinery							
Phillips66	USD	98.8	(0.1)	0.5	(3.1)	16.4	(14.4)
Valero	USD	79.7	2.0	3.3	(4.7)	(4.8)	(28.2)
JX	JPY	444.8	3.4	(2.3)	(13.1)	(19.9)	(40.8)
Neste Oil	EUR	30.5	2.1	(0.5)	(0.7)	(4.2)	(58.2)

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	58.0	1.8	0.6	(4.7)	(8.6)	(25.5)
DowDuPont	USD	67.4	2.0	(0.8)	(5.8)	2.9	(0.5)
SABIC	SAR	104.2	1.2	0.2	(8.8)	(5.8)	(15.3)
Formosa Pla.	TWD	92.0	1.0	(2.0)	(8.9)	(15.2)	(15.6)
Shin-Etsu	JPY	10,495	0.0	(2.0)	5.1	9.3	(0.3)
Renewable							
Wacker	EUR	66.7	4.2	3.5	2.0	(9.2)	(44.6)
First Solar	USD	63.07	2.2	3.5	(5.2)	8.0	23.7
GCL-Poly	HKD	0.32	3.3	(14.9)	(29.2)	(37.0)	(40.6)
Tesla Motors	USD	226.8	3.1	(1.0)	(12.1)	7.5	(25.8)

4. Coverage Summary

	08/19	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,940	0.7	(0.1)	(7.4)	(5.9)	(11.7)	(13.7)				* 추정치는 12M fwd 기준임(2020E)	
KOSPI화학	4,255	0.8	0.6	(10.5)	(10.2)	(17.3)	(23.9)				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	321,000	0.3	2.2	(11.2)	(2.6)	(15.5)	(12.2)	매수	400,000	24.6	12.88	1.48
롯데케미칼	228,500	3.2	2.7	(7.5)	(12.6)	(22.9)	(32.0)	매수	310,000	35.7	8.46	0.64
한화케미칼	17,100	3.0	(0.3)	(17.6)	(18.6)	(19.3)	(16.2)	매수	25,000	46.2	7.08	0.43
금호석유화학	72,100	0.6	(1.6)	(17.2)	(21.5)	(15.8)	(29.7)	매수	130,000	80.3	7.20	0.79
KCC	220,000	2.3	(2.0)	(13.7)	(18.2)	(31.3)	(33.9)	매수	350,000	59.1	26.94	0.39
OCI	67,400	3.7	(2.6)	(25.9)	(22.9)	(30.0)	(38.7)	매수	120,000	78.0	5.85	0.45
SKC	41,750	(2.2)	1.8	(4.2)	32.5	1.2	(6.5)	매수	45,000	7.8	13.20	0.99
SK이노베이션	160,000	1.3	1.3	(5.9)	(5.0)	(12.1)	(20.4)	매수	190,000	18.8	14.11	0.90
S-Oil	88,900	0.7	0.2	(1.8)	5.7	(15.7)	(28.9)	매수	100,000	12.5	13.10	1.38
GS	46,750	1.1	(1.6)	(11.3)	(6.7)	(13.1)	(12.9)	매수	60,000	28.3	6.20	0.51
SK가스	72,800	1.8	(1.0)	(7.1)	(8.7)	(10.0)	(15.2)	매수	100,000	37.4	10.42	0.45
포스코인터내셔널	17,700	2.0	2.9	(0.8)	4.4	(6.8)	(2.2)	매수	23,000	29.9	10.28	0.69
LG상사	16,900	3.7	4.0	(10.1)	0.3	(1.2)	(26.5)	매수	23,000	36.1	8.44	0.46
한국전력	25,700	4.0	1.6	(0.6)	2.6	(23.3)	(16.2)	매수	32,000	24.5	7.82	0.21
한국가스공사	38,050	2.4	(2.4)	(12.8)	(9.4)	(29.9)	(30.4)	매수	55,000	44.5	7.21	0.46

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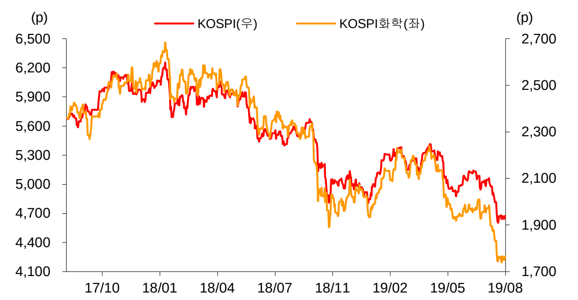
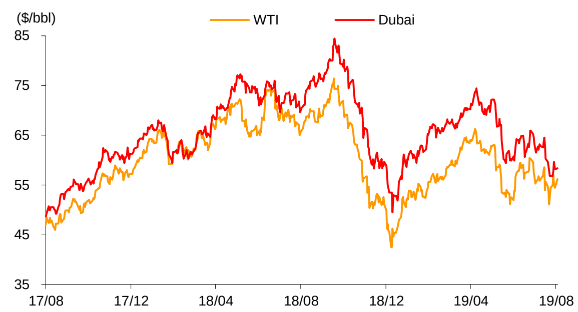
Key Chart

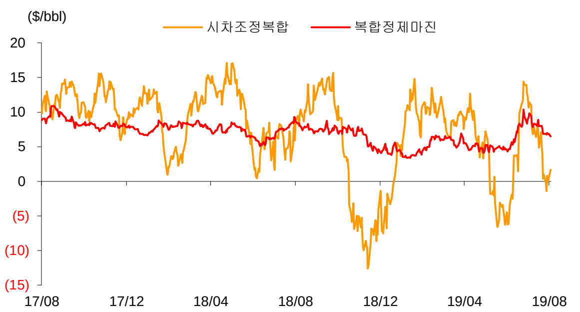
KOSPI/KOSPI화학



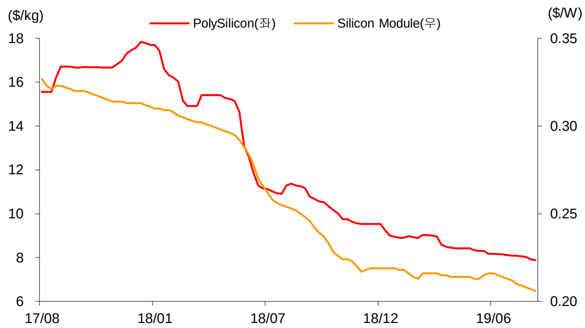
WTI/Dubai



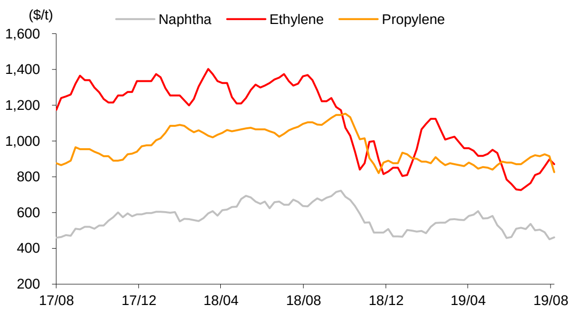
Complex & 1M lagging margin



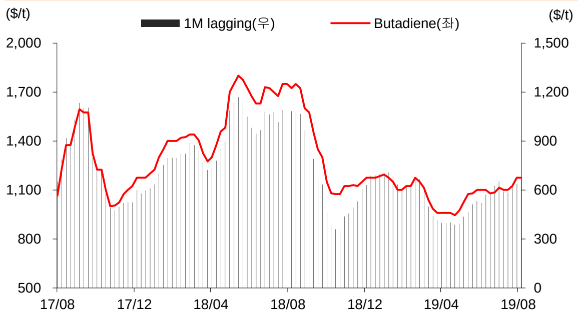
Polysilicon & Module prices



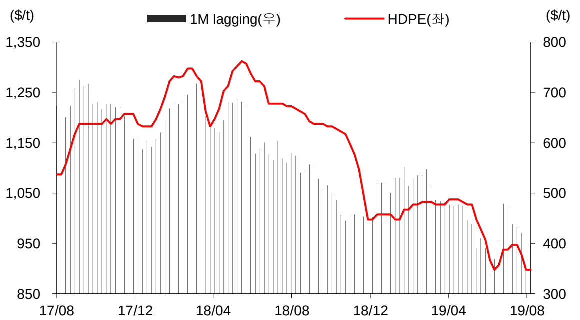
Naphtha/Ethylene/Propylene prices



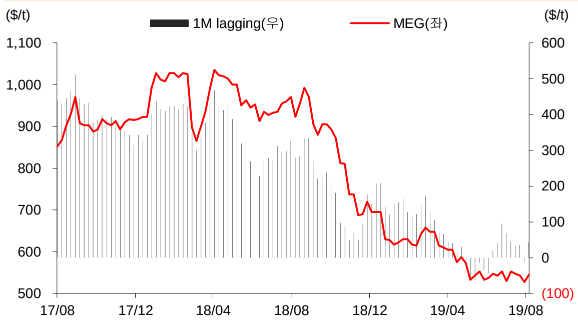
Butadiene price & 1M lagging naphtha spread



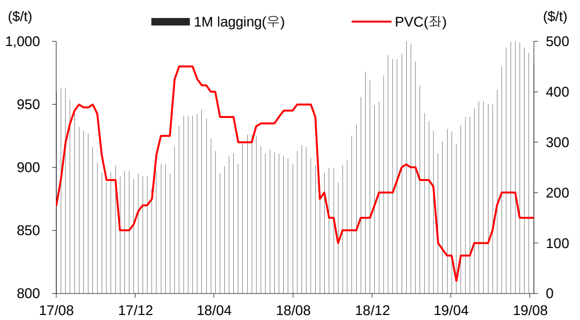
HDPE price & 1M lagging naphtha spread



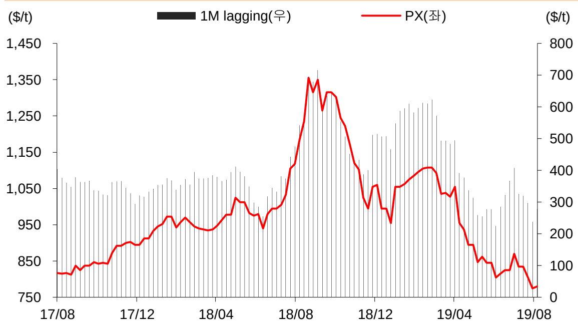
MEG price & 1M lagging naphtha spread



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	중국 Oriental Energy, Guangdong에 2 PDH 유닛 증설 계획
결론	20-21년 증설 계획으로, 에틸렌, 프로필렌 등 화학제품 가격 하락 전망
세부	
	1) 중국 Oriental Energy는 Guangdong에 2개의 PDH 유닛을 증설할 계획
	2) 2 PDH유닛과 3 PP장치 등 Project 첫 단계에 약 140억위안을 투자할 예정
	3) Project 두번째 단계에서는 2 PDH 유닛 포함 약 100억위안을 투자할 계획
	4) Maoming Project와 별도로, Zhejiang에 660,000톤/년 PDH 유닛을 증설중
	5) 20-21년 증설 계획으로, 에틸렌, 프로필렌 등 화학제품 가격 하락 전망

WTI Comment	(출처: 연합뉴스)
제목	국제유가, 상승 지속…WTI 2.4%↑
상승 요인	미 증시 반등 여파와 경기 부양 대책에 대한 기대감
하락 요인	

Issue 1	(출처: Platts)
제목	Pemex's Cangrejera PC Complex 아로마틱 공장 셧다운 지속
결론	생산능력 및 내수수요 동향 감안, 셧다운으로 인한 여파는 미미할 전망
세부	
	1) 전주 정전으로 예기치 못한 셧다운 이후, 금요일까지 공장 중단
	2) 아로마틱 유닛은 점검 필요로 10일간 중단될 예정
	3) 아로마틱 유닛은 BTX 각각 500톤/일 생산가능, 중단 전 가동률은 85%
	4) Pemex, 내수 수요를 맞추기 위한 톨루엔 및 자일렌 카고 수입은 불필요
	5) 생산능력 및 내수수요 동향 감안, 셧다운으로 인한 여파는 미미할 전망

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

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

Issue 5	
제목	
결론	
세부	
	1)
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Issue 6	
제목	
결론	
세부	
	1)
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	4)
	5)

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Commodity Price Data

Daily Price		08/19	1D	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
F/X	**USD/EUR**	0.903	0.902	0.892	0.891	0.896	0.882	0.874	0.872	0.887	0.848	0.887
	Change, %		0.1	1.2	1.3	0.7	2.4	3.3	3.5	1.8	6.5	1.7
	USD/JPY	106.6	106.4	105.3	107.7	110.1	110.6	110.5	109.7	112.1	110.4	109.5
	Change, %		0.2	1.3	(1.0)	(3.1)	(3.6)	(3.5)	(2.8)	(4.9)	(3.4)	(2.6)
	USD/KRW	1,211.1	1,211.4	1,216.1	1,174.4	1,195.6	1,128.3	1,124.9	1,113.9	1,130.9	1,100.3	1,156.0
	Change, %		(0.0)	(0.4)	3.1	1.3	7.3	7.7	8.7	7.1	10.1	4.8
Agriculture	**Corn**	365.0	371.0	385.3	430.8	383.3	369.8	364.3	375.0	359.4	368.2	388.5
	Change, %		(1.6)	(5.3)	(15.3)	(4.8)	(1.3)	0.2	(2.7)	1.6	(0.9)	(6.1)
	Soybean	854.0	867.3	861.5	901.5	821.8	900.8	881.5	882.5	975.9	931.9	883.3
	Change, %		(1.5)	(0.9)	(5.3)	3.9	(5.2)	(3.1)	(3.2)	(12.5)	(8.4)	(3.3)
	Wheat	465.5	470.8	471.8	502.5	465.0	489.8	560.5	503.3	436.0	495.4	486.8
	Change, %		(1.1)	(1.3)	(7.4)	0.1	(5.0)	(16.9)	(7.5)	6.8	(6.0)	(4.4)
	Rice	11.0	11.2	11.6	11.9	11.1	9.9	10.4	10.1	11.1	11.5	10.9
	Change, %		(1.5)	(4.7)	(7.7)	(0.4)	11.8	6.6	9.3	(0.3)	(4.4)	0.9
	Oats	270.3	280.3	271.8	271.8	294.0	270.0	258.8	275.3	252.3	256.2	283.3
	Change, %		(3.6)	(0.6)	(0.6)	(8.1)	0.1	4.4	(1.8)	7.1	5.5	(4.6)
MYR/mt	**Palm Oil**	2,105.0	2,143.0	2,141.0	1,905.0	2,049.0	2,155.0	2,204.0	2,004.0	2,787.3	2,250.9	2,038.3
	Change, %		(1.8)	(1.7)	10.5	2.7	(2.3)	(4.5)	5.0	(24.5)	(6.5)	3.3
	Cocoa	2,126.0	2,111.0	2,194.0	2,467.0	2,353.0	2,340.0	2,115.0	2,416.0	2,005.2	2,308.4	2,340.3
	Change, %		0.7	(3.1)	(13.8)	(9.6)	(9.1)	0.5	(12.0)	6.0	(7.9)	(9.2)
	Cotton	59.2	60.1	58.0	62.3	66.0	70.4	81.8	72.2	73.5	82.1	69.7
	Change, %		(1.5)	2.0	(4.9)	(10.3)	(15.9)	(27.6)	(18.0)	(19.5)	(27.9)	(15.1)
	Sugar	11.5	11.6	11.6	11.6	11.6	13.4	10.2	12.0	15.8	12.3	12.4
	Change, %		(1.5)	(0.8)	(1.0)	(0.7)	(14.1)	12.7	(4.7)	(27.5)	(6.4)	(7.2)
	Coffee	91.2	92.9	93.8	105.9	87.4	97.2	101.2	101.9	133.0	112.7	97.9
	Change, %		(1.8)	(2.8)	(13.9)	4.4	(6.2)	(9.9)	(10.5)	(31.5)	(19.1)	(6.9)
Energy	**WTI**	56.2	54.9	54.9	55.6	62.8	56.1	65.9	45.4	51.0	64.8	57.2
	Change, %		2.4	2.3	1.0	(10.5)	0.1	(14.8)	23.7	10.2	(13.3)	(1.7)
	Brent	59.7	58.6	58.6	62.5	72.2	66.5	71.8	53.8	54.9	71.6	65.3
	Change, %		1.9	2.0	(4.4)	(17.3)	(10.1)	(16.8)	11.0	8.9	(16.5)	(8.5)
	Natural Gas	2.2	2.2	2.1	2.3	2.6	2.7	2.9	2.9	3.0	3.1	2.6
	Change, %		0.1	4.6	(2.2)	(16.3)	(17.3)	(25.3)	(25.1)	(27.1)	(28.3)	(15.1)
	Ethanol	1.3	1.3	1.3	1.5	1.4	1.3	1.4	1.3	1.5	1.4	1.4
	Change, %		(0.9)	(3.4)	(12.3)	(5.4)	(1.8)	(5.1)	2.1	(13.8)	(6.0)	(6.7)
	RBOB Gasoline	166.4	165.7	166.5	184.1	204.7	156.4	198.1	132.4	162.9	191.7	177.6
	Change, %		0.4	(0.1)	(9.6)	(18.7)	6.4	(16.0)	25.7	2.1	(13.2)	(6.3)
	Coal	66.4	66.3	67.3	74.1	84.1	95.2	118.0	102.1	88.2	107.1	84.7
	Change, %		0.1	(1.4)	(10.5)	(21.1)	(30.3)	(43.8)	(35.0)	(24.8)	(38.1)	(21.7)
Metal	**Gold**	1,495.9	1,513.4	1,511.2	1,425.4	1,277.6	1,341.0	1,185.1	1,277.1	1,258.6	1,269.3	1,336.8
	Change, %		(1.2)	(1.0)	4.9	17.1	11.6	26.2	17.1	18.9	17.9	11.9
	Silver	16.9	17.1	17.1	16.2	14.4	16.0	14.8	15.5	17.1	15.7	15.4
	Change, %		(1.4)	(1.1)	4.1	17.1	5.5	14.0	8.9	(1.2)	7.4	9.3
	Copper	5,774.0	5,744.0	5,742.0	6,065.0	6,056.0	6,319.0	5,926.0	5,965.0	6,199.4	6,543.8	6,111.4
	Change, %		0.5	0.6	(4.8)	(4.7)	(8.6)	(2.6)	(3.2)	(6.9)	(11.8)	(5.5)
	Nickel	1,124.7	1,138.6	1,121.7	1,011.1	845.5	898.6	946.6	740.9	680.2	897.6	901.8
	Change, %		(1.2)	0.3	11.2	33.0	25.2	18.8	51.8	65.3	25.3	24.7
	Zinc	2,262.0	2,261.0	2,278.0	2,425.0	2,600.0	2,657.0	2,389.5	2,467.0	2,888.5	2,893.0	2,602.9
	Change, %		0.0	(0.7)	(6.7)	(13.0)	(14.9)	(5.3)	(8.3)	(21.7)	(21.8)	(13.1)
	Lead	2,051.3	2,038.5	2,074.0	2,050.0	1,819.8	2,012.8	1,980.0	2,016.0	2,315.7	2,244.6	1,972.0
	Change, %		0.6	(1.1)	0.1	12.7	1.9	3.6	1.7	(11.4)	(8.6)	4.0
	Aluminum	14,260.0	14,215.0	13,955.0	13,900.0	14,335.0	13,415.0	14,390.0	13,550.0	14,556.6	14,252.6	13,796.7
	Change, %		0.3	2.2	2.6	(0.5)	6.3	(0.9)	5.2	(2.0)	0.1	3.4
	Cobalt	32,117.5	32,130.0	31,008.0	27,596.0	34,500.0	31,000.0	63,847.0	55,000.0	55,906.9	72,883.1	32,364.3
	Change, %		(0.0)	3.6	16.4	(6.9)	3.6	(49.7)	(41.6)	(42.6)	(55.9)	(0.8)
	HR Coil	582.0	585.0	600.0	539.0	641.0	680.0	902.0	721.0	620.1	828.8	642.1
	Change, %		(0.5)	(3.0)	8.0	(9.2)	(14.4)	(35.5)	(19.3)	(6.1)	(29.8)	(9.4)
	Scrap	294.0	294.0	297.0	288.0	320.0	366.0	380.0	379.0	344.7	390.2	328.7
	Change, %		0.0	(1.0)	2.1	(8.1)	(19.7)	(22.6)	(22.4)	(14.7)	(24.7)	(10.6)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

SK Energy Daily

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Refining Price Data

Daily Price		08/19	1D	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Crude Oil	**WTI**	56.2	54.9	54.9	55.6	63.1	55.6	65.9	46.5	50.9	64.7	57.3
	Change, %		*2.4*	*2.3*	*1.0*	*(10.9)*	*1.1*	*(14.7)*	*20.8*	*10.4*	*(13.1)*	*(1.9)*
	Dubai	58.4	58.2	56.8	61.6	72.2	66.7	70.4	51.9	53.1	69.3	64.7
	Change, %		*0.3*	*2.8*	*(5.1)*	*(19.1)*	*(12.5)*	*(17.0)*	*12.6*	*10.0*	*(15.8)*	*(9.7)*
Crude Oil Product	**Gasoline(휘발유)**	68.8	70.4	68.8	73.9	80.7	68.6	83.5	54.9	68.0	79.8	71.5
	Change, %		*(2.2)*	*0.0*	*(6.9)*	*(14.8)*	*0.4*	*(17.6)*	*25.3*	*1.2*	*(13.8)*	*(3.8)*
	Kerosene(등유)	74.1	74.1	71.8	77.2	85.4	80.6	85.6	64.5	65.2	84.7	77.9
	Change, %		*0.1*	*3.3*	*(4.0)*	*(13.2)*	*(8.0)*	*(13.4)*	*14.8*	*13.6*	*(12.5)*	*(4.8)*
	Diesel(경유)	73.9	73.9	71.9	77.0	85.5	80.7	86.1	61.6	65.6	84.0	77.8
	Change, %		*0.0*	*2.8*	*(4.0)*	*(13.6)*	*(8.5)*	*(14.2)*	*19.9*	*12.6*	*(12.0)*	*(5.0)*
	Bunker-C	51.2	50.1	50.0	66.9	66.8	65.8	67.5	50.3	49.7	65.1	62.8
	Change, %		*2.1*	*2.3*	*(23.5)*	*(23.3)*	*(22.3)*	*(24.2)*	*1.7*	*3.1*	*(21.4)*	*(18.6)*
	Naphtha	50.0	49.8	48.4	54.1	62.6	58.2	69.3	46.9	53.7	67.0	56.5
	Change, %		*0.5*	*3.3*	*(7.6)*	*(20.1)*	*(14.0)*	*(27.8)*	*6.7*	*(7.0)*	*(25.4)*	*(11.6)*
Dubai Spread	**Gasoline(휘발유)**	10.4	12.2	12.0	12.4	8.5	1.8	13.1	3.1	14.9	10.5	6.8
	Change		*(1.8)*	*(1.6)*	*(2.0)*	*1.9*	*8.6*	*(2.7)*	*7.3*	*(4.5)*	*(0.1)*	*3.6*
	Kerosene(등유)	15.7	15.9	14.9	15.7	13.2	13.9	15.2	12.7	12.1	15.3	13.2
	Change		*(0.1)*	*0.8*	*0.1*	*2.5*	*1.9*	*0.5*	*3.0*	*3.6*	*0.4*	*2.5*
	Diesel(경유)	15.5	15.7	15.1	15.4	13.3	14.0	15.7	9.8	12.5	14.6	13.1
	Change		*(0.2)*	*0.4*	*0.1*	*2.1*	*1.5*	*(0.2)*	*5.7*	*3.0*	*0.8*	*2.4*
	Bunker-C	(7.2)	(8.1)	(6.8)	5.3	(5.4)	(0.9)	(2.9)	(1.5)	(3.4)	(4.2)	(1.9)
	Change		*0.9*	*(0.4)*	*(12.5)*	*(1.8)*	*(6.3)*	*(4.4)*	*(5.7)*	*(3.8)*	*(3.0)*	*(5.4)*
	Naphtha	(8.4)	(8.4)	(8.4)	(7.4)	(9.6)	(8.6)	(1.1)	(5.0)	0.6	(2.3)	(8.2)
	Change		*0.0*	*0.0*	*(1.0)*	*1.2*	*0.2*	*(7.3)*	*(3.4)*	*(9.0)*	*(6.1)*	*(0.2)*
Refining Margin	**Simple(단순)**	1.3	1.2	1.6	7.3	0.8	2.5	3.7	1.7	3.2	2.5	2.4
	Change		*0.1*	*(0.2)*	*(6.0)*	*0.6*	*(1.1)*	*(2.4)*	*(0.4)*	*(1.8)*	*(1.2)*	*(1.1)*
	Complex(복합)	6.5	6.8	6.8	9.8	5.2	4.9	8.7	3.8	8.0	7.2	5.7
	Change		*(0.3)*	*(0.3)*	*(3.3)*	*1.3*	*1.6*	*(2.2)*	*2.7*	*(1.5)*	*(0.7)*	*0.8*
	Complex(lagging)	1.7	0.5	(0.2)	11.5	6.1	11.5	8.7	(2.6)	8.9	6.8	6.2
	Change		*1.2*	*1.9*	*(9.8)*	*(4.4)*	*(9.8)*	*(7.0)*	*4.3*	*(7.3)*	*(5.2)*	*(4.5)*

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		08/19	1D	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Electricity	**SMP**	85.3	86.9	85.5	80.3	80.8	106.7	92.7	99.0	81.5	94.5	94.2
	Change, %		*(1.9)*	*(0.0)*	*0.1*	*0.1*	*(0.2)*	*(0.1)*	*(0.1)*	*0.0*	*(0.1)*	*(0.1)*

자료 : EPSIS, SK증권

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Petrochemical Price Data

Daily Price			08/19	08/16	08/15	08/14	08/13	08/12	08/09	08/08	08/07	08/06
Spot Price	**Naphtha**	CFR Japan	462.4	465.6	457.1	478.6	457.4	451.0	451.0	451.0	463.9	472.6
	Ethylene	CFR SE Asia	840.0	855.0	860.0	860.0	840.0	820.0	820.0	820.0	820.0	820.0
	Propylene	FOB Korea	925.0	915.0	915.0	915.0	915.0	915.0	915.0	915.0	925.0	925.0
	Butadiene	FOB Korea	1,115.0	1,115.0	1,115.0	1,115.0	1,115.0	1,115.0	1,115.0	1,115.0	1,105.0	1,105.0
	HDPE	CFR FE Asia	960.0	960.0	960.0	960.0	970.0	970.0	970.0	970.0	975.0	975.0
	LDPE	CFR FE Asia	970.0	970.0	970.0	970.0	985.0	985.0	985.0	985.0	985.0	985.0
	LLDPE	CFR FE Asia	875.0	875.0	875.0	875.0	885.0	885.0	885.0	885.0	885.0	885.0
	MEG	CFR China	540.0	540.0	531.0	530.0	528.0	522.0	522.0	522.0	520.0	515.0
	PP	CFR FE Asia	1,010.0	1,010.0	1,010.0	1,010.0	1,010.0	1,010.0	1,010.0	1,010.0	1,010.0	1,010.0
	PX	CFR China	773.7	770.7	777.0	784.7	774.7	770.5	770.5	770.5	771.0	775.3
	PTA	CFR China	685.0	685.0	685.0	685.0	685.0	688.0	688.0	688.0	688.0	688.0
	Benzene	FOB Korea	661.3	652.0	642.3	644.3	626.3	627.3	627.3	627.3	635.3	638.3
	Toluene	FOB Korea	663.0	651.0	646.0	636.0	634.0	639.0	639.0	639.0	649.0	650.0
	Xylene	FOB Korea	697.0	697.0	699.0	693.0	683.0	676.0	676.0	676.0	675.0	678.0
	SM	FOB Korea	976.0	976.0	977.0	971.0	967.0	964.0	964.0	964.0	975.0	981.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2017avg.	2018avg.	2019acc.
Spot Price	**Naphtha**	CFR Japan	461.5	450.5	501.0	580.0	520.0	634.5	489.9	493.5	614.2	521.0
	Change, %			*2.4*	*(7.9)*	*(20.4)*	*(11.3)*	*(27.3)*	*(5.8)*	*(6.5)*	*(24.9)*	*(11.4)*
	Ethylene	CFR SE Asia	850.0	852.5	770.0	902.5	1,050.0	1,275.0	808.1	1,090.9	1,145.9	858.2
	Change, %			*(0.3)*	*10.4*	*(5.8)*	*(19.0)*	*(33.3)*	*5.2*	*(22.1)*	*(25.8)*	*(1.0)*
	Propylene	CFR SE Asia	875.0	870.0	870.0	765.0	827.5	1,047.5	873.1	823.6	987.0	882.4
	Change, %			*0.6*	*0.6*	*14.4*	*5.7*	*(16.5)*	*0.2*	*6.2*	*(11.3)*	*(0.8)*
	Butadiene	CFR SE Asia	1,175.0	1,175.0	1,125.0	975.0	1,075.0	1,675.0	1,126.3	1,481.1	1,391.5	1,047.9
	Change, %			*0.0*	*4.4*	*20.5*	*9.3*	*(29.9)*	*4.3*	*(20.7)*	*(15.6)*	*12.1*
	Benzene	CFR SE Asia	642.5	647.5	695.0	617.5	590.0	890.0	548.8	838.8	827.8	616.3
	Change, %			*(0.8)*	*(7.6)*	*4.0*	*8.9*	*(27.8)*	*17.1*	*(23.4)*	*(22.4)*	*4.3*
	Toluene	CFR SE Asia	680.0	682.5	700.0	685.0	625.0	820.0	601.3	689.5	773.5	667.9
	Change, %			*(0.4)*	*(2.9)*	*(0.7)*	*8.8*	*(17.1)*	*13.1*	*(1.4)*	*(12.1)*	*1.8*
	Xylene	CFR SE Asia	712.5	705.0	717.5	720.0	685.0	845.0	678.8	668.8	802.5	700.1
	Change, %			*1.1*	*(0.7)*	*(1.0)*	*4.0*	*(15.7)*	*5.0*	*6.5*	*(11.2)*	*1.8*
Spread	**Ethylene**	-Naphtha	388.5	402.0	269.0	322.5	530.0	640.5	318.3	597.4	531.7	337.2
	Change, %			*(3.4)*	*44.4*	*20.5*	*(26.7)*	*(39.3)*	*22.1*	*(35.0)*	*(26.9)*	*15.2*
	Propylene	-Naphtha	413.5	419.5	369.0	185.0	307.5	413.0	383.3	330.1	372.8	361.3
	Change, %			*(1.4)*	*12.1*	*123.5*	*34.5*	*0.1*	*7.9*	*25.3*	*10.9*	*14.4*
	Butadiene	-Naphtha	713.5	724.5	624.0	395.0	555.0	1,040.5	636.4	987.6	777.3	526.9
	Change, %			*(1.5)*	*14.3*	*80.6*	*28.6*	*(31.4)*	*12.1*	*(27.8)*	*(8.2)*	*35.4*
	Benzene	-Naphtha	181.0	197.0	194.0	37.5	70.0	255.5	58.9	345.3	213.6	95.2
	Change, %			*(8.1)*	*(6.7)*	*382.7*	*158.6*	*(29.2)*	*207.4*	*(47.6)*	*(15.3)*	*90.1*
	Toluene	-Naphtha	218.5	232.0	199.0	105.0	105.0	185.5	111.4	196.0	159.3	146.9
	Change, %			*(5.8)*	*9.8*	*108.1*	*108.1*	*17.8*	*96.2*	*11.5*	*37.2*	*48.7*
	Xylene	-Naphtha	251.0	254.5	216.5	140.0	165.0	210.5	188.9	175.3	188.3	179.1
	Change, %			*(1.4)*	*15.9*	*79.3*	*52.1*	*19.2*	*32.9*	*43.2*	*33.3*	*40.1*

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	897.5	897.5	947.5	1,027.5	1,027.5	1,217.5	1,002.5	1,142.5	1,211.4	989.3
	Change, %			*0.0*	*(5.3)*	*(12.7)*	*(12.7)*	*(26.3)*	*(10.5)*	*(21.4)*	*(25.9)*	*(9.3)*
	MEG	CFR SE Asia	545.0	527.5	552.5	532.5	617.5	922.5	624.4	850.6	918.4	589.3
	Change, %			*3.3*	*(1.4)*	*2.3*	*(11.7)*	*(40.9)*	*(12.7)*	*(35.9)*	*(40.7)*	*(7.5)*
	PVC	CFR SE Asia	860.0	860.0	880.0	840.0	900.0	950.0	887.5	899.9	920.1	863.6
	Change, %			*0.0*	*(2.3)*	*2.4*	*(4.4)*	*(9.5)*	*(3.1)*	*(4.4)*	*(6.5)*	*(0.4)*
	PP	CFR SE Asia	1,047.5	1,052.5	1,067.5	1,157.5	1,097.5	1,232.5	1,076.3	1,099.6	1,236.5	1,097.5
	Change, %			*(0.5)*	*(1.9)*	*(9.5)*	*(4.6)*	*(15.0)*	*(2.7)*	*(4.7)*	*(15.3)*	*(4.6)*
	2-EH	CFR Korea	940.0	940.0	950.0	1,030.0	1,045.0	1,130.0	1,040.0	970.0	1,117.0	1,015.6
	Change, %			*0.0*	*(1.1)*	*(8.7)*	*(10.0)*	*(16.8)*	*(9.6)*	*(3.1)*	*(15.8)*	*(7.4)*
	ABS	CFR SE Asia	1,370.0	1,400.0	1,470.0	1,510.0	1,530.0	1,960.0	1,495.0	1,844.7	1,902.0	1,500.7
	Change, %			*(2.1)*	*(6.8)*	*(9.3)*	*(10.5)*	*(30.1)*	*(8.4)*	*(25.7)*	*(28.0)*	*(8.7)*
	SBR	CFR SE Asia	1,290.0	1,290.0	1,315.0	1,375.0	1,395.0	1,875.0	1,481.3	1,980.5	1,701.4	1,394.3
	Change, %			*0.0*	*(1.9)*	*(6.2)*	*(7.5)*	*(31.2)*	*(12.9)*	*(34.9)*	*(24.2)*	*(7.5)*
	SM	CFR SE Asia	1,000.0	1,000.0	1,035.0	1,062.5	1,055.0	1,470.0	997.5	1,253.8	1,343.7	1,047.8
	Change, %			*0.0*	*(3.4)*	*(5.9)*	*(5.2)*	*(32.0)*	*0.3*	*(20.2)*	*(25.6)*	*(4.6)*
	Caustic	FOB NEA	275.0	290.0	311.0	342.0	299.0	421.0	288.0	491.2	483.2	330.3
	Change, %			*(5.2)*	*(11.6)*	*(19.6)*	*(8.0)*	*(34.7)*	*(4.5)*	*(44.0)*	*(43.1)*	*(16.7)*
	PX	CFR SE Asia	780.0	775.0	835.0	847.5	1,095.0	1,185.0	1,031.9	844.4	1,056.0	947.0
	Change, %			*0.6*	*(6.6)*	*(8.0)*	*(28.8)*	*(34.2)*	*(24.4)*	*(7.6)*	*(26.1)*	*(17.6)*
	PO	CFR China	1,537.5	1,482.5	1,387.5	1,380.0	1,557.5	1,870.0	1,571.9	1,601.2	1,829.5	1,488.0
	Change, %			*3.7*	*10.8*	*11.4*	*(1.3)*	*(17.8)*	*(2.2)*	*(4.0)*	*(16.0)*	*3.3*
	Caprolactam	CFR SE Asia	1,460.0	1,460.0	1,460.0	1,665.0	1,630.0	2,155.0	1,663.8	1,936.4	2,092.4	1,609.9
	Change, %			*0.0*	*0.0*	*(12.3)*	*(10.4)*	*(32.3)*	*(12.2)*	*(24.6)*	*(30.2)*	*(9.3)*
	PTA	CFR SE Asia	690.0	695.0	755.0	815.0	860.0	972.5	817.5	667.8	869.4	804.7
	Change, %			*(0.7)*	*(8.6)*	*(15.3)*	*(19.8)*	*(29.0)*	*(15.6)*	*3.3*	*(20.6)*	*(14.3)*
Spread	**HDPE**		436.0	447.0	446.5	447.5	507.5	583.0	512.6	649.0	597.2	468.2
	Change, %			*(2.5)*	*(2.4)*	*(2.6)*	*(14.1)*	*(25.2)*	*(14.9)*	*(32.8)*	*(27.0)*	*(6.9)*
	MEG		83.5	77.0	51.5	(47.5)	97.5	288.0	134.5	357.1	304.2	68.2
	Change, %			*8.4*	*62.1*	*(275.8)*	*(14.4)*	*(71.0)*	*(37.9)*	*(76.6)*	*(72.6)*	*22.4*
	PVC		398.5	409.5	379.0	260.0	380.0	315.5	397.6	406.4	305.9	342.6
	Change, %			*(2.7)*	*5.1*	*53.3*	*4.9*	*26.3*	*0.2*	*(2.0)*	*30.3*	*16.3*
	PP		586.0	602.0	566.5	577.5	577.5	598.0	586.4	606.1	622.3	576.5
	Change, %			*(2.7)*	*3.4*	*1.5*	*1.5*	*(2.0)*	*(0.1)*	*(3.3)*	*(5.8)*	*1.7*
	2-EH		478.5	489.5	449.0	450.0	525.0	495.5	550.1	476.5	502.8	494.5
	Change, %			*(2.2)*	*6.6*	*6.3*	*(8.9)*	*(3.4)*	*(13.0)*	*0.4*	*(4.8)*	*(3.2)*
	ABS		908.5	949.5	969.0	930.0	1,010.0	1,325.5	1,005.1	1,351.2	1,287.8	979.7
	Change, %			*(4.3)*	*(6.2)*	*(2.3)*	*(10.0)*	*(31.5)*	*(9.6)*	*(32.8)*	*(29.5)*	*(7.3)*
	SBR	BD spread	115.0	115.0	190.0	400.0	320.0	200.0	355.0	499.4	310.0	346.3
	Change, %			*0.0*	*(39.5)*	*(71.3)*	*(64.1)*	*(42.5)*	*(67.6)*	*(77.0)*	*(62.9)*	*(66.8)*
	SM		538.5	549.5	534.0	482.5	535.0	835.5	507.6	760.3	729.5	526.8
	Change, %			*(2.0)*	*0.8*	*11.6*	*0.7*	*(35.5)*	*6.1*	*(29.2)*	*(26.2)*	*2.2*
	Caustic											
	Change, %											
	PX		318.5	324.5	334.0	267.5	575.0	550.5	542.0	351.0	441.8	425.9
	Change, %			*(1.8)*	*(4.6)*	*19.1*	*(44.6)*	*(42.1)*	*(41.2)*	*(9.2)*	*(27.9)*	*(25.2)*
	PO	propylene sprea	662.5	612.5	517.5	615.0	730.0	822.5	698.8	777.6	842.5	605.7
	Change, %			*8.2*	*28.0*	*7.7*	*(9.2)*	*(19.5)*	*(5.2)*	*(14.8)*	*(21.4)*	*9.4*
	Caprolactam	benzene spreac	817.5	812.5	765.0	1,047.5	1,040.0	1,265.0	1,115.0	1,097.6	1,264.6	993.6
	Change, %			*0.6*	*6.9*	*(22.0)*	*(21.4)*	*(35.4)*	*(26.7)*	*(25.5)*	*(35.4)*	*(17.7)*
	PTA	px spread	144.0	152.5	170.5	221.8	93.5	143.0	95.2	76.7	130.2	141.8
	Change, %			*(5.6)*	*(15.5)*	*(35.1)*	*54.0*	*0.7*	*51.3*	*87.7*	*10.6*	*1.5*

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	08/19	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	67.4	2.0	(0.8)	(5.8)	2.9	(13.2)	(0.5)	(11.4)	50,268	18.3	15.8	1.2	1.2	11.6	10.9
Corteva	USD	1,292.6	1.1	3.2	11.6	-	-	-	-	22,891	26.0	19.7	0.9	0.9	12.2	10.0
Eastman	USD	66.5	1.6	1.3	(15.4)	(6.6)	(19.7)	(31.9)	(9.0)	9,116	8.6	7.7	1.5	1.4	7.3	7.0
BASF	EUR	58.0	1.8	0.6	(4.7)	(8.6)	(12.1)	(25.5)	(4.0)	59,069	14.8	12.7	1.4	1.3	8.8	7.7
Akzo Nobel	EUR	81.2	0.5	(1.2)	(1.6)	6.1	4.5	2.2	21.2	19,258	26.2	19.6	2.7	2.6	13.3	11.7
Arkema	EUR	76.9	3.5	0.8	(5.9)	(4.8)	(8.3)	(27.0)	2.6	6,540	9.2	8.7	1.1	1.0	5.5	5.3
Lanxess	EUR	51.7	2.4	(1.0)	(6.2)	5.0	6.6	(23.0)	28.6	5,016	12.8	11.8	1.6	1.5	6.3	5.9
Sumitomo Chemical	JPY	466	1.1	0.4	(4.3)	(7.5)	(16.8)	(24.1)	(12.6)	7,241	7.8	7.3	0.7	0.7	5.4	5.3
Mitsubishi Chemical	JPY	730	1.4	0.5	(1.8)	(0.1)	(11.8)	(23.7)	(12.3)	10,321	6.8	6.4	0.7	0.7	6.7	6.4
Shin-Etsu Chemical	JPY	10,495	0.0	(2.0)	5.1	9.3	10.2	(0.3)	22.9	42,123	14.0	13.1	1.6	1.5	6.2	5.8
Asahi Kasei	JPY	957	0.9	2.4	(15.0)	(16.9)	(21.9)	(38.4)	(15.3)	12,604	9.0	8.8	0.9	0.8	5.3	5.2
JSR	JPY	1,702	2.3	(0.9)	3.2	10.2	(9.0)	(19.7)	2.8	3,612	12.4	10.6	0.9	0.8	6.4	5.7
Nitto Denko	JPY	4,915	2.5	(0.4)	(5.4)	(1.5)	(18.8)	(41.2)	(11.3)	7,324	13.7	13.0	1.1	1.0	4.2	4.1
SABIC	SAR	104.2	1.2	0.2	(8.8)	(5.8)	(15.3)	(15.3)	(10.3)	83,344	20.6	18.5	1.8	1.7	8.8	8.4
Yansab	SAR	56.1	(0.4)	(0.4)	(5.7)	(12.3)	(19.5)	(22.5)	(11.0)	8,413	18.1	16.7	1.9	1.9	10.1	10.3
Formosa Plastics	TWD	92.0	1.0	(2.0)	(8.9)	(15.2)	(10.2)	(15.6)	(8.9)	18,671	12.9	11.7	1.6	1.5	16.8	15.5
Formosa Fiber	TWD	86.2	0.0	0.1	(10.7)	(18.7)	(17.5)	(26.9)	(17.9)	16,107	12.6	12.7	1.4	1.3	11.0	11.3
Nan Ya Plastics	TWD	67.0	(0.3)	(0.9)	(6.8)	(12.4)	(10.8)	(19.6)	(11.3)	16,940	14.8	14.0	1.4	1.4	15.5	15.1
Sinopec Shanghai	CNY	4.46	1.6	0.0	(8.4)	(9.9)	(15.5)	(13.7)	(10.6)	5,705	12.1	12.3	1.6	1.5	5.6	5.7
Sinopec Yizheng(Fibe	CNY	2.22	2.3	2.8	(7.5)	(11.9)	15.6	16.2	21.3	4,825	41.1	28.5	5.6	4.6	10.4	9.3
Reliance	INR	1,293	1.1	11.2	3.5	2.0	6.3	7.4	15.3	114,546	17.0	14.0	1.9	1.7	11.1	9.1
Industries Qatar	QAR	10.4	0.1	(0.4)	(6.1)	(5.4)	(20.5)	(91.3)	(22.5)	17,125	20.8	18.2	2.3	2.2	119.2	102.8
PTT Chemical	THB	54.3	3.3	2.4	(12.1)	(14.6)	(21.7)	(33.6)	(23.9)	7,928	10.4	8.6	0.8	0.8	7.1	6.2
Petronas	MYR	7.3	1.8	(1.5)	(6.8)	(17.3)	(18.2)	(20.4)	(21.6)	13,954	15.6	13.9	1.8	1.7	8.5	7.6
LG화학	KRW	321,000	0.3	2.2	(11.2)	(3.9)	(17.7)	(12.2)	(7.5)	18,696	24.0	14.5	1.4	1.3	8.6	6.3
롯데케미칼	KRW	228,500	3.2	2.7	(7.5)	(13.3)	(28.9)	(32.0)	(17.5)	6,462	6.8	5.7	0.6	0.5	4.5	3.9
한화케미칼	KRW	17,100	3.0	(0.3)	(17.6)	(19.3)	(21.6)	(16.2)	(15.3)	2,278	7.7	5.7	0.4	0.4	8.3	7.3
금호석유	KRW	72,100	0.6	(1.6)	(17.2)	(21.8)	(19.8)	(29.7)	(17.4)	1,812	5.7	5.6	0.9	0.8	4.2	4.3
SKC	KRW	41,750	(2.2)	1.8	(4.2)	30.5	5.4	(6.5)	16.6	1,293	15.2	10.4	1.0	0.9	9.6	8.2
국도화학	KRW	43,800	(0.9)	(3.5)	(6.5)	(7.5)	(10.6)	(25.4)	(4.1)	210	-	-	-	-	-	-
효성	KRW	85,000	2.8	2.3	9.1	8.1	20.6	104.6	70.0	1,478	10.5	11.1	0.7	0.7	11.4	12.7
Average			**1.3**	**0.6**	**(6.4)**	**(5.4)**	**(10.3)**	**(16.9)**	**(2.5)**							
Refinery																
Valero	USD	79.7	2.0	3.3	(4.7)	(4.8)	(6.0)	(28.2)	6.3	33,028	14.8	8.1	1.6	1.4	7.6	5.4
Conoco Phillips	USD	53.9	4.8	1.5	(10.6)	(13.1)	(22.4)	(22.7)	(13.5)	59,881	12.8	12.7	1.8	1.7	4.6	4.6
Formosa Petrochemic	TWD	98.1	(0.7)	(1.9)	(7.9)	(13.2)	(14.7)	(18.9)	(10.0)	29,792	19.2	15.7	2.7	2.6	12.0	10.1
Marathon Petroleum	USD	47.8	3.4	3.1	(13.5)	(8.0)	(26.5)	(38.0)	(19.0)	31,474	10.5	6.1	0.9	0.8	7.4	5.5
Devon Energy	USD	23.3	3.2	(1.0)	(11.7)	(24.0)	(17.8)	(42.7)	3.2	9,406	16.0	11.7	1.3	1.2	3.9	3.8
Hollyfrontier	USD	45.9	3.4	(1.7)	(5.5)	6.8	(20.3)	(33.2)	(10.3)	7,551	9.3	8.7	1.2	1.2	5.7	5.6
Phillips 66	USD	98.8	(0.1)	0.5	(3.1)	16.4	2.1	(14.4)	14.6	44,298	12.4	9.4	1.7	1.5	8.0	6.8
Murphy Oil	USD	19.9	4.8	1.8	(7.8)	(25.4)	(32.3)	(32.5)	(15.0)	3,227	19.0	13.7	0.7	0.7	5.0	4.1
JX Holdings	JPY	444.8	3.4	(2.3)	(13.1)	(19.9)	(23.2)	(40.8)	(22.9)	13,904	4.9	5.0	0.5	0.5	5.3	5.3
Idemitsu	JPY	2,735.0	4.7	0.4	(10.9)	(18.0)	(35.9)	(47.2)	(24.2)	7,751	5.6	5.1	0.6	0.6	6.2	5.6
Nesteoil	EUR	30.5	2.1	(0.5)	(0.7)	(4.2)	6.1	(58.2)	35.7	26,010	18.4	16.4	4.5	4.0	11.8	10.8
Ashland	USD	73.5	1.0	0.2	(3.4)	1.2	(7.2)	(13.4)	3.6	4,448	26.6	20.8	1.4	1.3	13.0	11.9
Fuchs Petrolub	EUR	31.7	2.3	(1.2)	(8.9)	(13.0)	(22.8)	(35.0)	(11.8)	4,805	19.8	18.1	2.8	2.6	11.3	10.4
SK이노베이션	KRW	160,000	1.3	1.3	(5.9)	(4.8)	(14.9)	(20.4)	(10.9)	12,206	13.0	8.5	0.8	0.8	7.4	5.8
S-Oil	KRW	88,900	0.7	0.2	(1.8)	5.2	(17.3)	(28.9)	(9.0)	8,258	20.5	8.7	1.5	1.4	11.6	7.4
GS	KRW	46,750	1.1	(1.6)	(11.3)	(7.1)	(13.1)	(12.9)	(9.4)	3,584	5.7	5.0	0.5	0.5	6.0	5.5
Average			**2.3**	**0.1**	**(7.5)**	**(7.9)**	**(16.6)**	**(30.5)**	**(5.8)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

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Global peers

	Currency	08/19	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	69	1.7	(0.3)	(7.4)	(8.5)	(11.2)	(11.3)	1.8	293,850	21.4	14.5	1.5	1.6	8.3	6.6
BP	GBP	500	2.0	(0.1)	(3.4)	(10.1)	(6.8)	(8.8)	0.8	123,707	11.5	8.8	1.2	1.1	4.7	4.4
Shell	EUR	2,315	1.8	(2.6)	(8.8)	(8.7)	(4.0)	(6.4)	0.3	225,167	11.4	9.4	1.2	1.1	5.3	4.9
Chevron	USD	117	1.3	(3.5)	(6.2)	(2.7)	(1.7)	(0.4)	7.8	222,703	16.6	14.0	1.4	1.4	6.3	5.9
Total	EUR	44	2.1	2.1	(8.4)	(10.2)	(10.8)	(15.7)	(4.4)	130,626	9.8	8.5	1.0	1.0	4.7	4.3
Sinopec	CNY	5	1.4	1.0	(4.7)	(6.8)	(14.3)	(20.4)	(0.2)	83,491	9.7	9.2	0.8	0.8	4.4	4.2
Petrochina	CNY	6	1.3	(0.2)	(5.6)	(13.8)	(18.3)	(22.7)	(14.0)	152,277	18.8	16.8	0.9	0.9	5.0	4.9
CNOOC	CNY	10	2.0	(1.3)	(5.7)	5.4	7.0	(3.9)	13.9	65,210	8.3	8.0	1.1	1.0	3.4	3.3
Gazprom	RUB	227	0.9	(1.5)	5.0	14.0	47.2	60.8	47.8	80,258	3.5	3.7	0.4	0.3	3.7	3.6
Rosneft	RUB	404	(0.2)	0.4	(3.9)	(2.2)	0.3	(5.1)	(6.6)	64,002	6.3	5.0	0.9	0.8	3.9	3.7
Anadarko	USD	73	0.0	0.0	(0.8)	0.2	60.1	17.3	66.0	36,564	42.9	44.9	-	-	7.5	7.0
Petrobras	BRL	24	0.5	(6.3)	(12.4)	(2.6)	(12.2)	30.2	6.0	82,467	9.2	7.6	1.0	0.9	5.1	4.6
Lukoil	USD	5,240	4.8	(1.5)	0.8	(0.4)	(3.7)	19.8	4.9	58,746	6.0	5.7	0.9	0.8	3.6	3.5
Kinder	USD	20	1.4	0.3	(0.4)	1.0	6.6	13.7	32.7	46,204	20.6	19.0	1.4	1.4	10.9	10.4
Equinor ASA	NOK	149	0.9	(0.5)	(8.3)	(19.2)	(24.7)	(29.9)	(19.1)	55,350	9.9	8.3	1.2	1.1	2.7	2.3
BHP	AUD	36	0.2	(2.1)	(11.7)	(5.7)	(2.1)	10.7	10.5	117,970	10.7	12.6	2.4	2.3	5.1	5.7
PTT E&P	THB	124	(1.6)	(0.4)	(8.5)	(4.3)	0.0	(8.2)	8.8	15,891	11.2	11.0	1.2	1.1	3.4	3.2
Petronas gas	MYR	16	(0.1)	(0.6)	(5.8)	(3.9)	(11.7)	(12.5)	(16.8)	7,576	17.0	17.5	2.4	2.3	9.0	9.1
Chesapeake	USD	2	15.1	14.3	(1.2)	(33.6)	(40.3)	(62.9)	(23.8)	2,615	-	-	0.8	0.9	5.4	5.1
Noble Energy	USD	22	4.4	2.0	6.0	(5.8)	(5.2)	(21.9)	19.7	10,742	-	42.9	1.1	1.1	7.6	5.5
Average			**2.0**	**(0.0)**	**(4.6)**	**(5.9)**	**(2.3)**	**(3.9)**	**6.8**							
PV																
WACKER	EUR	66.7	4.2	3.5	2.0	(9.2)	(27.7)	(44.6)	(15.7)	3,857	21.0	15.4	1.1	1.1	5.5	5.1
GCL-Poly	HKD	0.3	3.3	(14.9)	(29.2)	(37.0)	(55.0)	(40.6)	(33.7)	797	-	8.1	0.2	0.2	8.2	7.3
SunPower	USD	13.2	2.7	0.2	20.4	65.4	111.3	99.2	166.2	1,886	-	400.9	-	-	25.6	14.6
Canadian Solar	USD	24.4	4.1	14.5	16.3	39.1	9.2	85.8	69.9	1,448	8.1	7.6	1.0	0.9	7.1	5.6
LONGI Green Energy	CNY	24.8	1.5	(1.6)	3.2	2.7	21.9	147.3	75.5	12,726	21.2	16.7	3.9	3.2	14.4	11.0
First Solar	USD	63.1	2.2	3.5	(5.2)	8.0	21.1	23.7	48.6	6,647	25.9	17.2	1.2	1.1	10.1	7.3
OCI	KRW	67,400	3.7	(2.6)	(25.9)	(22.8)	(32.6)	(38.7)	(37.0)	1,326	-	12.7	0.5	0.5	9.2	5.1
Average			**3.1**	**0.4**	**(2.6)**	**6.6**	**6.9**	**33.2**	**39.1**							
Gas Company																
Towngas China	HKD	5.5	1.1	(3.2)	(11.1)	(4.4)	(12.4)	(22.7)	(3.7)	1,994	10.3	9.6	0.9	0.8	10.6	9.4
Kulun	HKD	6.7	3.6	1.4	(8.9)	(9.9)	(24.5)	(1.6)	(19.6)	7,361	7.9	7.1	1.0	1.0	4.7	4.4
Beijing Enterprise	HKD	37.2	1.0	0.1	(5.2)	(4.3)	(17.4)	7.1	(10.5)	5,975	5.7	5.2	0.6	0.6	10.9	10.5
ENN Energy	HKD	79.2	(5.2)	(3.8)	2.0	14.1	2.0	9.7	14.0	11,352	16.2	14.0	3.2	2.7	10.1	8.7
China Resources Gas	HKD	38.9	(0.6)	(2.5)	2.2	8.4	17.3	15.4	25.5	11,026	17.0	15.3	3.1	2.7	9.4	8.5
China Gas Holdings	HKD	31.3	(1.1)	(1.3)	0.2	32.7	22.5	22.8	12.0	20,784	16.8	14.0	3.8	3.2	13.7	11.4
Shenzen Gas	HKD	15.1	7.7	9.0	(1.2)	(2.5)	(0.2)	12.2	4.5	4,137	9.5	8.5	1.1	1.0	8.3	8.0
Shaan Xi	CNY	7.2	2.3	1.0	(8.1)	(7.2)	(5.5)	0.4	(2.0)	1,142	18.6	15.7	1.4	1.3	-	-
Suntien	HKD	2.0	2.6	3.2	(8.9)	(6.7)	(6.7)	(6.3)	(3.5)	923	4.4	4.0	0.6	0.5	6.8	6.1
China Oil & Gas	HKD	0.3	0.0	(1.6)	(16.2)	(22.7)	(41.0)	(48.3)	(41.0)	231	-	-	-	-	-	-
Average			**1.1**	**0.2**	**(5.5)**	**(0.2)**	**(6.6)**	**(1.1)**	**(2.4)**							
EV																
LG화학	KRW	321,000	0.3	2.2	(11.2)	(3.9)	(17.7)	(12.2)	(7.5)	18,696	24.0	14.5	1.4	1.3	8.6	6.3
삼성SDI	KRW	253,000	0.2	1.4	4.5	17.7	2.2	18.5	15.5	14,354	22.6	15.7	1.4	1.3	12.4	9.6
Panasonic	JPY	806.9	0.2	(3.3)	(12.1)	(10.3)	(22.0)	(41.1)	(18.5)	18,579	9.6	9.0	0.9	0.9	5.0	4.8
GS Yuasa	JPY	1830.0	(0.2)	(3.6)	(10.7)	(5.3)	(19.1)	(27.2)	(18.6)	1,421	11.6	10.7	0.8	0.8	5.4	5.2
NEC	JPY	4645.0	1.0	(2.0)	6.4	18.5	24.0	57.4	42.3	11,356	16.8	14.1	1.3	1.2	7.5	7.2
CATL	CNY	76.2	4.1	3.9	5.1	5.5	(7.4)	11.8	3.3	23,716	37.6	31.2	4.4	3.9	17.6	14.1
GuoXuan	CNY	12.2	3.2	5.2	(4.8)	(8.7)	(20.2)	(3.5)	5.8	1,972	17.0	15.1	1.5	1.4	12.1	10.5
Wanxiang	CNY	5.4	2.8	3.2	(8.7)	(11.0)	(6.4)	(10.5)	6.1	2,120	20.9	19.4	-	-	-	-
BYD Auto	CNY	52.1	2.0	1.8	(3.4)	3.7	0.7	22.7	2.2	18,453	39.9	33.3	2.5	2.3	11.0	9.8
Tesla Motors	USD	226.8	3.1	(1.0)	(12.1)	7.5	(25.8)	(25.8)	(31.8)	40,631	-	59.5	6.1	5.4	24.4	15.9
Geely	CNY	11.1	2.0	0.4	(9.3)	(15.3)	(23.3)	(27.5)	(19.9)	12,847	9.8	7.8	1.7	1.5	5.4	4.7
NIO	CNY	3.0	1.7	(1.6)	(11.0)	(32.1)	(58.7)	-	(52.9)	3,158	-	-	26.6	-	-	-
Average			**1.7**	**0.5**	**(5.6)**	**(2.8)**	**(14.5)**	**(3.4)**	**(6.2)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임