

1. News Summary (3 page)

2018년 9월 11일

News	
WTI comment	엇갈린 수급전망에 혼조...WTI 0.3%↓
Headline	PetroChina, 미중 무역분쟁으로 카타르와 LNG 공급 계약 체결
News 1.	-
News 2.	-
News 3.	-
News 4.	-

Conclusion	
	중국의 화미 가스 의존도가 낮기에 무역분쟁의 우위는 중국에 있음
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	67.5	(0.3)	(3.2)	(0.1)	2.2	40.5
Dubai	\$/bbl	75.8	1.5	(0.5)	7.5	2.0	42.6
Gasoline	\$/bbl	87.6	0.9	(1.2)	5.4	2.7	24.5
Diesel	\$/bbl	91.8	1.2	(1.1)	7.7	4.4	35.4
Complex margin	\$/bbl	7.5	(0.1)	(0.5)	(0.9)	0.9	(1.9)
1M lagging	\$/bbl	10.0	0.3	(1.7)	7.1	3.0	(1.3)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	681	1.6	0.1	7.1	4.9	33.1
Butadiene	\$/t	1,615	(0.3)	(6.1)	(7.2)	(6.4)	9.9
HDPE	\$/t	1,270	0.0	(1.2)	(3.1)	(6.6)	6.3
MEG	\$/t	938	(1.8)	(4.6)	3.2	3.9	(2.8)
PX	\$/t	1,309	0.2	(3.0)	17.8	35.1	57.6
SM	\$/t	1,392	(0.4)	(1.6)	(2.7)	(1.1)	0.2
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.80	1.0	(3.8)	(4.5)	(4.1)	(5.3)
Natural rubber	\$/t	1,300	0.0	0.0	(2.3)	(6.5)	(22.2)
Cotton	C/lbs	83.9	2.2	2.0	1.0	(11.4)	13.9

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	09/10	\$/t	1,138	(4.4)	(10.8)	(6.4)	(7.1)
Propylene	09/10	\$/t	1,030	(0.5)	(0.7)	1.7	18.4
Benzene	09/10	\$/t	870	(1.4)	(0.9)	1.8	5.8
Toluene	09/10	\$/t	830	0.0	0.0	1.8	21.2
Xylene	09/10	\$/t	870	0.0	3.6	3.6	37.0
PP	09/10	\$/t	1,238	0.0	0.4	(3.5)	7.8
PVC	09/10	\$/t	950	0.0	0.5	3.3	0.5
ABS	09/10	\$/t	1,880	0.0	(4.1)	(8.7)	(7.4)
SBR	09/10	\$/t	1,875	0.0	2.5	(1.3)	4.7
SM	09/10	\$/t	1,448	(0.5)	(1.9)	(5.1)	0.5
BPA	09/10	\$/t	1,960	0.6	8.0	4.4	3.8
Caustic	09/10	\$/t	440	10.0	19.2	(20.0)	(7.8)
2-EH	09/10	\$/t	1,130	1.3	0.9	2.7	14.1
Caprolactam	09/10	\$/t	2,130	0.0	(1.2)	0.5	23.8
Solar				%	%	%	%
Polysilicon	09/05	\$/kg	11.2	(0.9)	(1.1)	(14.7)	(33.2)
Module	09/05	\$/W	0.25	(0.8)	(2.4)	(13.9)	(23.2)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	81.7	(0.1)	1.9	2.9	(2.3)	3.7
Shell	EUR	2,427	(0.7)	(4.8)	(4.1)	(6.9)	13.5
Petrochina	CNY	8.18	(0.2)	1.4	1.9	3.4	1.2
Gazprom	RUB	150.8	1.3	1.4	4.1	4.6	25.3
Petrobras	BRL	19.3	1.4	1.4	(1.7)	26.3	30.9
Refinery			%	%	%	%	%
Phillips66	USD	114.0	(0.3)	(3.8)	(7.0)	(2.5)	34.5
Valero	USD	115.3	0.1	(2.2)	(0.1)	(3.7)	65.7
JX	JPY	714.9	(0.6)	(7.7)	(10.9)	0.1	33.6
Neste Oil	EUR	71.4	0.5	(3.9)	(4.7)	0.7	98.2

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	76.5	(0.4)	(3.8)	(3.1)	(11.0)	(9.1)
DowDuPont	USD	70.1	0.1	(0.1)	3.4	0.8	8.0
SABIC	SAR	119.0	(1.0)	(5.3)	(6.2)	(5.0)	19.5
Formosa Pla.	TWD	111.5	0.0	0.5	0.9	2.8	14.9
Shin-Etsu	JPY	9,696	(0.4)	(4.6)	(10.6)	(13.8)	1.1
Renewable			%	%	%	%	%
Wacker	EUR	118.0	1.2	(4.9)	(5.0)	(0.5)	6.2
First Solar	USD	48.16	(0.7)	(7.5)	(8.8)	(8.6)	2.7
GCL-Poly	HKD	0.54	(3.6)	(8.5)	(8.5)	(32.5)	(39.3)
Tesla Motors	USD	285.5	8.5	(5.4)	(19.7)	(10.1)	(16.9)

4. Coverage Summary

	09/10	1D	1W	1M	3M	6M	12M
KOSPI	2,289	0.3	(0.8)	0.3	(7.3)	(6.9)	(2.3)
KOSPI화확	5,493	(0.6)	(2.0)	(2.8)	(10.1)	(10.4)	(3.3)
LG화확	347,000	(1.4)	(5.7)	(7.5)	(8.8)	(14.6)	(6.8)
롯데케미칼	300,000	(0.8)	(3.8)	(12.9)	(21.2)	(30.2)	(25.7)
한화케미칼	19,750	(0.5)	(2.9)	(7.1)	(22.7)	(36.9)	(44.6)
금호석유화학	100,000	4.0	1.4	(2.9)	(1.5)	10.4	27.1
KCC	348,500	1.0	8.9	3.6	(1.4)	(2.1)	(8.0)
OCI	114,000	(0.9)	(5.4)	6.0	(0.4)	(26.7)	12.9
SKC	47,000	0.0	2.4	3.9	11.1	19.3	21.8
SK이노베이션	199,500	3.6	2.6	3.9	(7.2)	(2.4)	7.0
S-Oil	121,500	2.1	0.4	3.8	9.0	(0.4)	0.4
GS	52,500	1.5	(0.6)	(2.2)	(11.9)	(20.2)	(21.3)
SK가스	88,800	(0.8)	5.1	4.7	(6.8)	(6.6)	(16.6)
포스코대우	19,100	1.6	5.2	4.4	(20.9)	(4.5)	(9.0)
LG상사	21,600	(0.5)	2.9	(7.9)	(21.5)	(17.9)	(24.6)
한국전력	30,250	0.0	(0.2)	(4.1)	(13.7)	(6.9)	(26.6)
한국가스공사	56,600	3.9	8.2	2.7	(11.6)	19.8	29.1

투자의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	400,000	15.3	13.71	1.55
매수	400,000	33.3	9.31	0.85
매수	30,000	51.9	8.87	0.48
매수	150,000	50.0	9.32	1.29
매수	400,000	14.8	30.22	0.54
매수	140,000	22.8	8.67	0.83
매수	50,000	6.4	12.82	1.11
매수	230,000	15.3	11.73	1.00
매수	140,000	15.2	13.87	2.03
매수	80,000	52.4	4.86	0.59
매수	130,000	46.4	8.39	0.60
매수	25,000	30.9	10.02	0.75
매수	38,000	75.9	8.00	0.61
매수	45,000	48.8	7.32	0.24
매수	75,000	32.5	8.78	0.73

* 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.

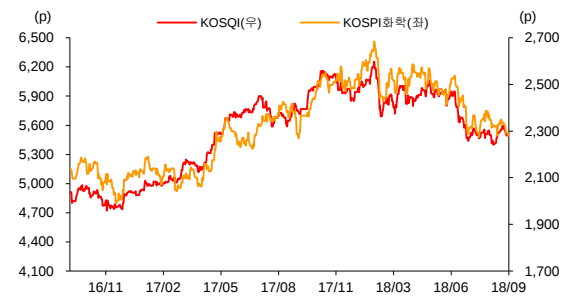
* 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.

* 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.

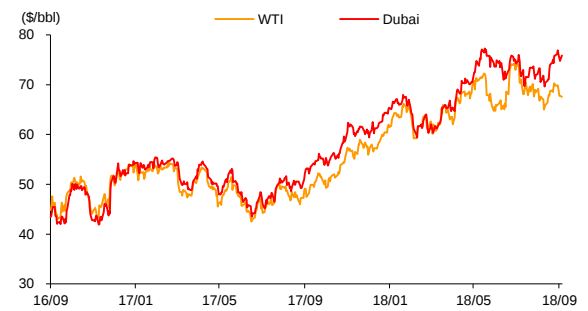
* 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

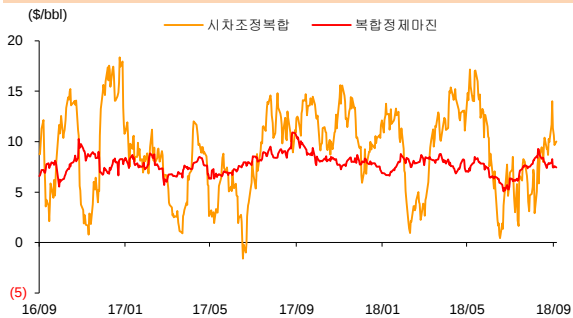
KOSPI/KOSPI화학



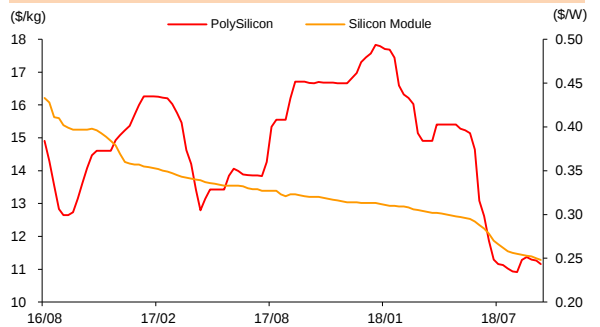
WTI/Dubai



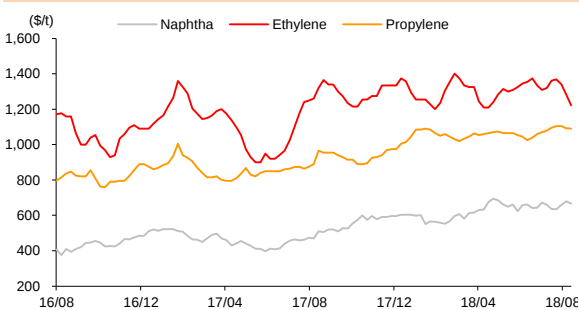
Complex & 1M lagging margin



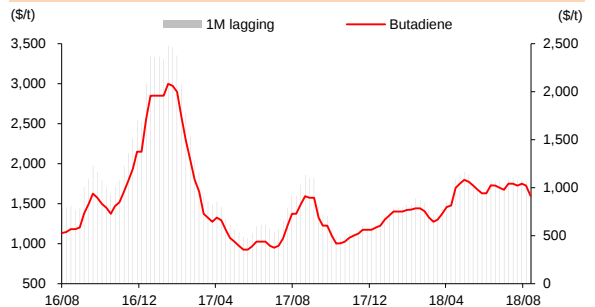
Polysilicon & Module prices



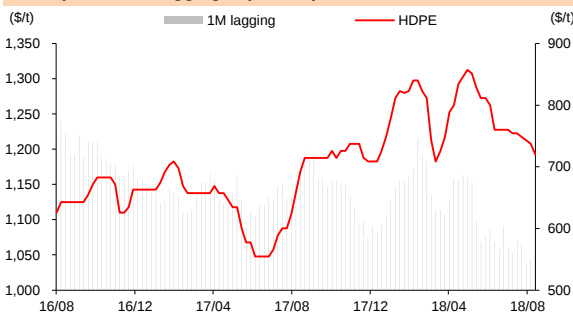
Naphtha/Ethylene/Propylene prices



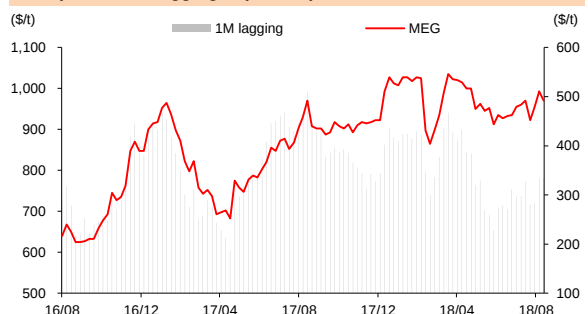
Butadiene price & 1M lagging naphtha spread



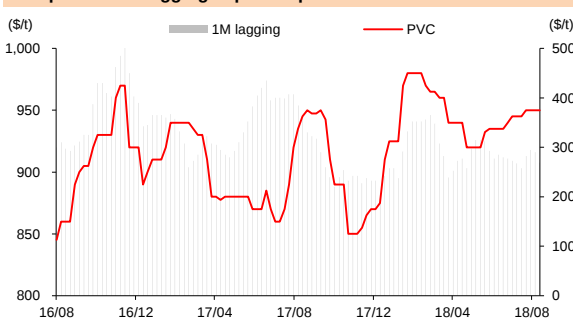
HDPE price & 1M lagging naphtha spread



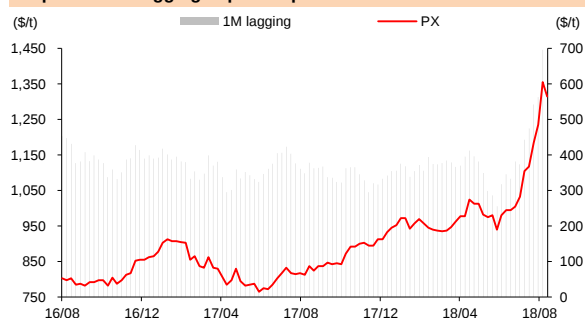
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Ciscem, Petronet, Platts, Pvsights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

News Comment

Headline	(출처: Bloomberg)
제목	PetroChina, 미중 무역분쟁으로 카타르와 LNG 공급 계약 체결
결론	중국의 對미 가스 의존도가 낮기에 무역분쟁의 우위는 중국에 있음
세부	1) PetroChina가 QatarGas와 연간 340만톤의 LNG 공급 계약을 체결함 2) 22년의 장기 계약이며 첫 카고는 이번달 말에 인도될 예정임 3) 이번 계약은 미중 무역전쟁이 불거진 가운데 PetroChina의 최대 계약임 4) 이를 통해 동절기 중국 가스 수급에서의 변동성을 줄일 수 있을 것임 5) 중국의 對미 가스 의존도가 낮기에 무역분쟁의 우위는 중국에 있음

WTI Comment	(출처: 연합뉴스)
제목	엇갈린 수급전망에 혼조...WTI 0.3%↓
상승	지난주 미국의 오일 시추기가 줄었다는 소식
요인	미국의 대이란 원유제재 우려가 부각
하락	미국의 원유재고가 증가할 것이라는 관측
요인	

Issue 1
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결론
세부
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Issue 2
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Issue 3
제목
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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)

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.863	0.866	0.861	0.876	0.850	0.813	0.831	0.833	0.904	0.887	0.837
	Change, %		(0.4)	0.2	(1.6)	1.5	6.1	3.8	3.5	(4.6)	(2.7)	3.1
	USD/JPY	111.1	111.0	111.1	110.8	109.6	106.8	107.8	112.6	108.8	112.1	109.4
	Change, %		0.1	0.1	0.3	1.4	4.0	3.1	(1.3)	2.2	(0.9)	1.5
	USD/KRW	1,128.5	1,122.8	1,110.4	1,129.0	1,075.9	1,069.8	1,127.4	1,066.7	1,160.5	1,130.9	1,089.2
	Change, %		0.5	1.6	(0.0)	4.9	5.5	0.1	5.8	(2.8)	(0.2)	3.6
Agriculture	Corn	355.5	354.3	351.0	357.8	377.8	383.0	344.3	350.8	358.5	359.4	368.8
	Change, %		0.4	1.3	(0.6)	(5.9)	(7.2)	3.3	1.4	(0.8)	(1.1)	(3.6)
	Soybean	833.5	832.0	833.0	846.0	969.3	1,029.3	956.5	951.8	987.5	975.9	958.4
	Change, %		0.2	0.1	(1.5)	(14.0)	(19.0)	(12.9)	(12.4)	(15.6)	(14.6)	(13.0)
	Wheat	504.0	486.3	518.5	546.8	520.0	489.0	413.8	427.0	436.4	436.0	488.7
	Change, %		3.7	(2.8)	(7.8)	(3.1)	3.1	21.8	18.0	15.5	15.6	3.1
	Rice	10.8	10.8	10.8	10.6	11.2	12.2	12.5	11.7	10.3	11.1	12.0
	Change, %		(0.3)	(0.1)	2.5	(3.3)	(11.1)	(13.2)	(7.4)	4.6	(2.2)	(9.6)
	Oats	238.8	234.5	243.5	256.8	240.8	259.5	233.3	241.0	196.3	252.3	246.1
	Change, %		1.8	(2.0)	(7.0)	(0.8)	(8.0)	2.4	(0.9)	21.6	(5.4)	(3.0)
MYR/mt	Palm Oil	2,213.0	2,213.0	2,209.0	2,206.0	2,378.0	2,398.0	2,771.0	2,444.0	2,653.8	2,787.3	2,360.4
	Change, %		0.0	0.2	0.3	(6.9)	(7.7)	(20.1)	(9.5)	(16.6)	(20.6)	(6.2)
	Cocoa	2,329.0	2,288.0	2,323.0	2,086.0	2,393.0	2,478.0	1,972.0	1,892.0	2,854.0	2,005.2	2,360.9
	Change, %		1.8	0.3	11.6	(2.7)	(6.0)	18.1	23.1	(18.4)	16.1	(1.4)
	Cotton	83.9	82.1	82.3	85.9	94.9	84.5	75.6	78.6	65.6	73.5	84.1
	Change, %		2.2	2.0	(2.2)	(11.6)	(0.7)	11.0	6.7	28.0	14.1	(0.2)
	Sugar	11.2	11.0	10.6	10.5	12.3	12.8	14.1	15.2	18.2	15.8	12.2
	Change, %		1.7	5.7	6.3	(8.6)	(12.8)	(20.5)	(26.1)	(38.3)	(29.2)	(7.8)
	Coffee	97.5	98.8	98.1	107.0	117.3	118.9	129.4	126.2	136.1	133.0	115.1
	Change, %		(1.3)	(0.6)	(8.9)	(16.8)	(18.0)	(24.7)	(22.7)	(28.3)	(26.7)	(15.3)
Energy	WTI	67.5	67.8	69.8	67.6	65.7	62.0	47.5	60.4	43.4	51.0	66.5
	Change, %		(0.3)	(3.2)	(0.1)	2.7	8.9	42.2	11.8	55.7	32.5	1.5
	Brent	77.4	76.8	78.2	72.8	76.5	65.5	53.8	66.9	45.1	54.9	72.2
	Change, %		0.7	(1.0)	6.3	1.2	18.1	43.9	15.7	71.6	41.1	7.2
	Natural Gas	2.8	2.8	2.9	2.9	2.9	2.7	2.9	3.0	2.6	3.0	2.8
	Change, %		1.0	(3.8)	(4.8)	(3.0)	2.6	(3.0)	(5.0)	9.9	(7.2)	(1.3)
	Ethanol	1.3	1.3	1.3	1.3	1.4	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		(0.2)	0.8	(4.4)	(10.9)	(14.6)	(16.0)	(2.3)	(14.8)	(13.8)	(9.2)
	RBOB Gasoline	195.9	197.0	214.4	203.9	211.5	190.4	164.8	179.9	140.0	162.9	201.1
	Change, %		(0.5)	(8.6)	(3.9)	(7.4)	2.9	18.9	8.9	40.0	20.3	(2.6)
	Coal	115.3	114.6	116.3	116.7	113.9	99.4	98.5	100.8	65.5	88.2	107.3
	Change, %		0.7	(0.8)	(1.2)	1.3	16.0	17.1	14.4	76.1	30.7	7.4
Metal	Gold	1,195.9	1,196.2	1,201.0	1,211.7	1,299.4	1,323.3	1,346.5	1,302.6	1,248.5	1,258.6	1,288.9
	Change, %		(0.0)	(0.4)	(1.3)	(8.0)	(9.6)	(11.2)	(8.2)	(4.2)	(5.0)	(7.2)
	Silver	14.2	14.2	14.5	15.3	16.8	16.6	18.0	16.9	17.1	17.1	16.2
	Change, %		0.0	(2.3)	(7.4)	(15.6)	(14.6)	(21.1)	(16.4)	(17.1)	(17.0)	(12.7)
	Copper	5,910.0	5,933.0	5,967.0	6,190.0	7,312.0	6,962.0	6,693.0	7,247.0	4,872.0	6,199.4	6,713.3
	Change, %		(0.4)	(1.0)	(4.5)	(19.2)	(15.1)	(11.7)	(18.4)	21.3	(4.7)	(12.0)
	Nickel	900.8	888.7	919.9	952.5	1,043.1	896.7	734.0	809.1	646.4	680.2	920.7
	Change, %		1.4	(2.1)	(5.4)	(13.6)	0.5	22.7	11.3	39.4	32.4	(2.2)
	Zinc	2,381.0	2,420.0	2,463.0	2,547.0	3,202.0	3,277.0	3,031.0	3,319.0	2,097.5	2,888.5	3,044.1
	Change, %		(1.6)	(3.3)	(6.5)	(25.6)	(27.3)	(21.4)	(28.3)	13.5	(17.6)	(21.8)
	Lead	2,009.8	2,061.0	2,109.0	2,083.5	2,452.8	2,376.8	2,237.3	2,482.8	1,868.3	2,315.7	2,358.0
	Change, %		(2.5)	(4.7)	(3.5)	(18.1)	(15.4)	(10.2)	(19.1)	7.6	(13.2)	(14.8)
	Aluminum	14,605.0	14,575.0	14,775.0	14,520.0	14,760.0	14,035.0	15,910.0	15,020.0	12,373.5	14,556.6	14,371.7
	Change, %		0.2	(1.2)	0.6	(1.1)	4.1	(8.2)	(2.8)	18.0	0.3	1.6
	Cobalt	61,556.0	61,556.0	64,306.0	61,650.0	82,750.0	84,020.0	60,850.0	75,205.0	25,480.1	55,906.9	79,496.8
	Change, %		0.0	(4.3)	(0.2)	(25.6)	(26.7)	1.2	(18.1)	141.6	10.1	(22.6)
	HR Coil	867.0	865.0	865.0	901.0	909.0	820.0	638.0	662.0	519.3	620.1	838.6
	Change, %		0.2	0.2	(3.8)	(4.6)	5.7	35.9	31.0	67.0	39.8	3.4
	Scrap	373.0	379.0	376.0	392.0	397.0	400.0	380.0	367.0	275.7	344.7	388.3
	Change, %		(1.6)	(0.8)	(4.8)	(6.0)	(6.8)	(1.8)	1.6	35.3	8.2	(3.9)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		09/10	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	67.5	67.8	69.8	67.6	66.1	61.4	48.1	53.7	43.4	50.9	66.5
	Change, %		(0.3)	(3.2)	(0.1)	2.2	10.1	40.5	25.7	55.8	32.7	1.6
	Dubai	75.8	74.7	76.2	70.6	74.4	61.7	53.2	53.8	41.3	53.1	69.5
	Change, %		1.5	(0.5)	7.5	2.0	22.9	42.6	40.9	83.6	42.8	9.1
Crude Oil	Gasoline(휘발유)	87.6	86.9	88.7	83.2	85.4	75.4	70.4	69.8	56.3	68.0	82.0
Product	Change, %		0.9	(1.2)	5.4	2.7	16.2	24.5	25.5	55.8	28.9	6.9
	Kerosene(등유)	90.7	89.7	91.3	85.4	88.0	77.6	66.6	66.4	52.9	65.2	84.8
	Change, %		1.1	(0.7)	6.2	3.1	16.9	36.2	36.5	71.5	39.0	6.9
	Diesel(경유)	91.8	90.8	92.9	85.3	88.0	76.6	67.9	65.5	52.1	65.6	84.1
	Change, %		1.2	(1.1)	7.7	4.4	19.8	35.4	40.2	76.2	40.0	9.3
	Bunker-C	69.2	68.2	69.6	68.7	69.5	57.1	49.3	52.1	35.5	49.7	64.1
	Change, %		1.5	(0.6)	0.8	(0.5)	21.1	40.3	32.9	94.8	39.3	7.9
	Naphtha	73.9	72.6	74.4	69.2	71.1	61.6	53.7	53.5	42.6	53.7	68.6
	Change, %		1.8	(0.6)	6.8	4.1	20.1	37.6	38.3	73.6	37.6	7.8
Dubai	Gasoline(휘발유)	11.8	12.2	12.5	12.6	11.0	13.7	17.2	16.0	14.9	14.9	12.5
Spread	Change		(0.3)	(0.7)	(0.8)	0.8	(1.9)	(5.4)	(4.2)	(3.1)	(3.1)	(0.7)
	Kerosene(등유)	14.9	14.9	15.1	14.8	13.6	15.9	13.4	12.6	11.6	12.1	15.3
	Change		(0.1)	(0.2)	0.0	1.2	(1.0)	1.4	2.3	3.3	2.7	(0.5)
	Diesel(경유)	16.0	16.1	16.7	14.8	13.6	14.9	14.7	11.7	10.8	12.5	14.5
	Change		(0.0)	(0.7)	1.3	2.4	1.1	1.3	4.3	5.2	3.5	1.5
	Bunker-C	(6.6)	(6.6)	(6.6)	(1.9)	(4.8)	(4.6)	(3.9)	(1.8)	(5.8)	(3.4)	(5.4)
	Change		(0.1)	(0.0)	(4.8)	(1.8)	(2.1)	(2.8)	(4.9)	(0.9)	(3.2)	(1.2)
	Naphtha	(1.9)	(2.1)	(1.8)	(1.3)	(3.3)	(0.1)	0.5	(0.4)	1.3	0.6	(0.9)
	Change		0.2	(0.1)	(0.6)	1.4	(1.8)	(2.4)	(1.5)	(3.2)	(2.5)	(0.9)
Refining	Simple(단순)	1.7	1.8	2.0	3.9	1.7	3.2	3.9	3.8	1.9	3.2	2.3
Margin	Change		(0.1)	(0.3)	(2.1)	0.0	(1.5)	(2.1)	(2.1)	(0.2)	(1.4)	(0.5)
	Complex(복합)	7.5	7.6	7.9	8.3	6.6	8.3	9.4	8.3	7.0	8.0	7.5
	Change		(0.1)	(0.5)	(0.9)	0.9	(0.9)	(1.9)	(0.8)	0.5	(0.5)	(0.0)
	Complex(lagging)	10.0	9.7	11.7	2.9	7.0	6.0	11.3	18.0	8.5	8.9	9.0
	Change		0.3	(1.7)	7.1	3.0	4.0	(1.3)	(8.0)	1.5	1.1	1.0

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

Petrochemical Price Data

Daily Price			09/10	09/07	09/06	09/05	09/04	09/03	08/31	08/30	08/29	08/28
Spot Price	Naphtha	CFR Japan	681.0	670.1	672.4	681.0	695.0	680.1	680.1	679.6	666.5	667.0
	Ethylene	CFR SE Asia	1,215.0	1,215.0	1,225.0	1,230.0	1,230.0	1,230.0	1,230.0	1,240.0	1,270.0	1,270.0
	Propylene	FOB Korea	1,090.0	1,090.0	1,085.0	1,085.0	1,085.0	1,085.0	1,090.0	1,090.0	1,090.0	1,090.0
	Butadiene	FOB Korea	1,615.0	1,620.0	1,690.0	1,690.0	1,690.0	1,720.0	1,730.0	1,740.0	1,740.0	1,740.0
	HDPE	CFR FE Asia	1,270.0	1,270.0	1,275.0	1,275.0	1,280.0	1,285.0	1,290.0	1,290.0	1,290.0	1,290.0
	LDPE	CFR FE Asia	1,110.0	1,110.0	1,110.0	1,110.0	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0	1,120.0
	LLDPE	CFR FE Asia	1,090.0	1,090.0	1,095.0	1,095.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0	1,100.0
	MEG	CFR China	938.0	955.0	981.0	993.0	981.0	983.0	977.0	952.0	940.0	940.0
	PP	CFR FE Asia	1,220.0	1,215.0	1,215.0	1,215.0	1,205.0	1,205.0	1,210.0	1,210.0	1,220.0	1,210.0
	PX	CFR China	1,308.7	1,306.3	1,312.3	1,315.3	1,334.3	1,348.7	1,351.7	1,352.0	1,317.7	1,303.3
	PTA	CFR China	1,070.0	1,070.0	1,065.0	1,065.0	1,065.0	1,065.0	1,065.0	1,050.0	1,050.0	1,050.0
	Benzene	FOB Korea	844.3	854.0	867.7	868.7	869.7	875.0	877.7	881.7	881.0	882.7
	Toluene	FOB Korea	818.0	818.0	821.0	821.0	826.0	821.0	819.5	814.5	804.5	804.5
	Xylene	FOB Korea	889.0	890.0	904.0	908.0	908.0	908.0	911.5	930.5	930.5	945.5
	SM	FOB Korea	1,392.0	1,397.0	1,415.0	1,415.0	1,417.0	1,414.0	1,422.0	1,412.0	1,412.0	1,405.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	Naphtha	CFR Japan	667.0	680.0	635.5	649.5	676.0	510.0	484.5	399.5	493.5	625.3
	Change, %			(1.9)	5.0	2.7	(1.3)	30.8	37.7	67.0	35.2	6.7
	Ethylene	CFR SE Asia	1,137.5	1,190.0	1,275.0	1,215.0	1,155.0	1,225.0	990.0	1,040.9	1,090.9	1,236.7
	Change, %			(4.4)	(10.8)	(6.4)	(1.5)	(7.1)	14.9	9.3	4.3	(8.0)
	Propylene	CFR SE Asia	1,030.0	1,035.0	1,037.5	1,012.5	1,015.0	870.0	815.0	705.7	823.6	1,061.3
	Change, %			(0.5)	(0.7)	1.7	1.5	18.4	26.4	46.0	25.1	(2.9)
	Butadiene	CFR SE Asia	1,550.0	1,675.0	1,700.0	1,675.0	1,650.0	1,450.0	2,100.0	1,116.8	1,481.1	1,489.9
	Change, %			(7.5)	(8.8)	(7.5)	(6.1)	6.9	(26.2)	38.8	4.7	4.0
	Benzene	CFR SE Asia	870.0	882.5	877.5	855.0	857.5	822.5	822.5	646.7	838.8	868.4
	Change, %			(1.4)	(0.9)	1.8	1.5	5.8	5.8	34.5	3.7	0.2
Spread	Toluene	CFR SE Asia	830.0	830.0	830.0	815.0	815.0	685.0	690.0	630.5	689.5	778.6
	Change, %			0.0	0.0	1.8	1.8	21.2	20.3	31.6	20.4	6.6
	Xylene	CFR SE Asia	870.0	870.0	840.0	840.0	807.5	635.0	675.0	627.7	668.8	795.9
	Change, %			0.0	3.6	3.6	7.7	37.0	28.9	38.6	30.1	9.3
Spread	Ethylene	-Naphtha	470.5	510.0	639.5	565.5	479.0	715.0	505.5	641.4	597.4	611.4
	Change, %			(7.7)	(26.4)	(16.8)	(1.8)	(34.2)	(6.9)	(26.6)	(21.2)	(23.0)
	Propylene	-Naphtha	363.0	355.0	402.0	363.0	339.0	360.0	330.5	306.2	330.1	435.9
	Change, %			2.3	(9.7)	0.0	7.1	0.8	9.8	18.6	10.0	(16.7)
	Butadiene	-Naphtha	883.0	995.0	1,064.5	1,025.5	974.0	940.0	1,615.5	717.3	987.6	864.5
	Change, %			(11.3)	(17.1)	(13.9)	(9.3)	(6.1)	(45.3)	23.1	(10.6)	2.1
	Benzene	-Naphtha	203.0	202.5	242.0	205.5	181.5	312.5	338.0	247.2	345.3	243.1
	Change, %			0.2	(16.1)	(1.2)	11.8	(35.0)	(39.9)	(17.9)	(41.2)	(16.5)
	Toluene	-Naphtha	163.0	150.0	194.5	165.5	139.0	175.0	205.5	231.0	196.0	153.3
	Change, %			8.7	(16.2)	(1.5)	17.3	(6.9)	(20.7)	(29.4)	(16.8)	6.3
Spread	Xylene	-Naphtha	203.0	190.0	204.5	190.5	131.5	125.0	190.5	228.2	175.3	170.6
	Change, %			6.8	(0.7)	6.6	54.4	62.4	6.6	(11.1)	15.8	19.0

자료 : Ciscem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,192.5	1,207.5	1,222.5	1,287.5	1,292.5	1,167.5	1,142.5	1,134.6	1,142.5	1,248.0
	Change, %			(1.2)	(2.5)	(7.4)	(7.7)	2.1	4.4	5.1	4.4	(4.4)
	MEG	CFR SE Asia	970.0	992.5	970.0	945.0	1,000.0	970.0	847.5	660.8	850.6	972.8
	Change, %			(2.3)	0.0	2.6	(3.0)	0.0	14.5	46.8	14.0	(0.3)
	PVC	CFR SE Asia	950.0	950.0	945.0	920.0	940.0	945.0	920.0	823.4	899.9	943.3
	Change, %			0.0	0.5	3.3	1.1	0.5	3.3	15.4	5.6	0.7
	PP	CFR SE Asia	1,237.5	1,237.5	1,232.5	1,282.5	1,262.5	1,147.5	1,032.5	978.4	1,099.6	1,255.2
	Change, %			0.0	0.4	(3.5)	(2.0)	7.8	19.9	26.5	12.5	(1.4)
	2-EH	CFR Korea	1,130.0	1,115.0	1,120.0	1,100.0	1,165.0	990.0	865.0	772.4	970.0	1,116.8
	Change, %			1.3	0.9	2.7	(3.0)	14.1	30.6	46.3	16.5	1.2
	ABS	CFR SE Asia	1,880.0	1,880.0	1,960.0	2,060.0	2,050.0	2,030.0	1,635.0	1,347.1	1,844.7	2,004.6
	Change, %			0.0	(4.1)	(8.7)	(8.3)	(7.4)	15.0	39.6	1.9	(6.2)
	SBR	CFR SE Asia	1,875.0	1,875.0	1,830.0	1,900.0	1,800.0	1,790.0	2,000.0	1,483.0	1,980.5	1,769.7
	Change, %			0.0	2.5	(1.3)	4.2	4.7	(6.3)	26.4	(5.3)	5.9
	SM	CFR SE Asia	1,447.5	1,455.0	1,475.0	1,525.0	1,407.5	1,440.0	1,205.0	1,064.6	1,253.8	1,409.9
	Change, %			(0.5)	(1.9)	(5.1)	2.8	0.5	20.1	36.0	15.5	2.7
	Caustic	FOB NEA	440.0	400.0	369.0	550.0	598.0	477.0	422.5	316.6	491.2	531.0
	Change, %			10.0	19.2	(20.0)	(26.4)	(7.8)	4.1	39.0	(10.4)	(17.1)
	PX	CFR SE Asia	1,315.0	1,355.0	1,117.5	975.0	1,025.0	837.5	855.0	790.4	844.4	1,011.4
	Change, %			(3.0)	17.7	34.9	28.3	57.0	53.8	66.4	55.7	30.0
	PO	CFR China	1,960.0	1,947.5	1,815.0	1,877.5	1,880.0	1,887.5	1,562.5	1,396.8	1,601.2	1,871.2
	Change, %			0.6	8.0	4.4	4.3	3.8	25.4	40.3	22.4	4.7
	Caprolactam	CFR SE Asia	2,130.0	2,130.0	2,155.0	2,120.0	2,100.0	1,720.0	1,850.0	1,344.9	1,936.4	2,127.4
	Change, %			0.0	(1.2)	0.5	1.4	23.8	15.1	58.4	10.0	0.1
	PTA	CFR SE Asia	1,080.0	1,075.0	920.0	860.0	825.0	667.5	642.5	613.7	667.8	839.1
	Change, %			0.5	17.4	25.6	30.9	61.8	68.1	76.0	61.7	28.7
Spread	HDPE		525.5	527.5	587.0	638.0	616.5	657.5	658.0	735.1	649.0	622.7
	Change, %			(0.4)	(10.5)	(17.6)	(14.8)	(20.1)	(20.1)	(28.5)	(19.0)	(15.6)
	MEG		303.0	312.5	334.5	295.5	324.0	460.0	363.0	261.3	357.1	347.5
	Change, %			(3.0)	(9.4)	2.5	(6.5)	(34.1)	(16.5)	16.0	(15.1)	(12.8)
	PVC		283.0	270.0	309.5	270.5	264.0	435.0	435.5	423.9	406.4	317.9
	Change, %			4.8	(8.6)	4.6	7.2	(34.9)	(35.0)	(33.2)	(30.4)	(11.0)
	PP		570.5	557.5	597.0	633.0	586.5	637.5	548.0	578.9	606.1	629.9
	Change, %			2.3	(4.4)	(9.9)	(2.7)	(10.5)	4.1	(1.5)	(5.9)	(9.4)
	2-EH		463.0	435.0	484.5	450.5	489.0	480.0	380.5	372.9	476.5	491.5
	Change, %			6.4	(4.4)	2.8	(5.3)	(3.5)	21.7	24.2	(2.8)	(5.8)
	ABS		1,213.0	1,200.0	1,324.5	1,410.5	1,374.0	1,520.0	1,150.5	947.6	1,351.2	1,379.3
	Change, %			1.1	(8.4)	(14.0)	(11.7)	(20.2)	5.4	28.0	(10.2)	(12.1)
	SBR	BD spread	325.0	200.0	130.0	225.0	150.0	340.0	(100.0)	366.2	499.4	279.9
	Change, %			62.5	150.0	44.4	116.7	(4.4)	(425.0)	(11.2)	(34.9)	16.1
	SM		780.5	775.0	839.5	875.5	731.5	930.0	720.5	665.1	760.3	784.6
	Change, %			0.7	(7.0)	(10.9)	6.7	(16.1)	8.3	17.4	2.7	(0.5)
	Caustic											
	Change, %											
	PX		648.0	675.0	482.0	325.5	349.0	327.5	370.5	390.9	351.0	386.1
	Change, %			(4.0)	34.4	99.1	85.7	97.9	74.9	65.8	84.6	67.8
	PO	propylene spread	930.0	912.5	777.5	865.0	865.0	1,017.5	747.5	691.1	777.6	809.9
	Change, %			1.9	19.6	7.5	7.5	(8.6)	24.4	34.6	19.6	14.8
	Caprolactam	benzene spread	1,260.0	1,247.5	1,277.5	1,265.0	1,242.5	897.5	1,027.5	698.2	1,097.6	1,259.0
	Change, %			1.0	(1.4)	(0.4)	1.4	40.4	22.6	80.5	14.8	0.1
	PTA	px spread	159.5	126.5	137.8	177.5	107.5	81.3	44.0	60.4	76.7	131.1
	Change, %			26.1	15.8	(10.1)	48.4	96.3	262.5	164.0	108.0	21.6

자료 : Ciscchem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	09/10	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	70.1	0.1	(0.1)	3.4	0.8	(3.0)	8.0	(1.6)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	96.9	(0.2)	(0.1)	(3.0)	(11.1)	(11.3)	14.3	4.6	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	76.5	(0.4)	(3.8)	(3.1)	(11.0)	(10.1)	(9.1)	(16.6)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	80.7	(1.8)	(0.1)	(0.6)	6.2	0.1	3.3	10.5	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	104.5	0.5	(3.0)	(1.0)	1.1	(4.0)	11.0	2.9	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	65.8	0.2	(2.5)	(4.8)	(4.9)	(4.6)	4.6	(0.7)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	603	0.3	(2.3)	(4.3)	(8.6)	(2.3)	(7.8)	(25.6)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	958	0.7	(2.4)	(2.6)	(4.1)	(7.8)	(5.7)	(22.5)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	9,696	(0.4)	(4.6)	(10.6)	(13.8)	(11.7)	1.1	(15.3)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,574	0.5	(3.0)	0.4	3.7	16.0	23.3	8.3	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,005	(0.7)	(5.6)	(6.5)	(1.1)	(19.8)	(4.3)	(9.6)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,006	(1.0)	(5.2)	(5.1)	(10.9)	(7.1)	(14.5)	(20.0)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	119.0	(1.0)	(5.3)	(6.2)	(5.0)	10.0	19.5	17.3	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	71.2	0.1	(1.8)	(3.8)	(3.1)	4.2	25.2	20.7	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	111.5	0.0	0.5	0.9	2.8	9.9	14.9	13.0	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	118.5	(1.3)	(1.3)	(0.4)	2.2	12.3	23.6	15.0	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	83.4	0.0	(1.4)	(1.4)	(2.5)	5.2	10.5	7.1	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.63	0.5	1.8	5.0	(1.2)	(4.9)	(11.5)	(11.1)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fiber)	CNY	1.92	(2.0)	(2.5)	(2.0)	(6.3)	(17.2)	(40.0)	(28.1)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,256	(1.8)	2.2	4.3	27.6	37.5	53.7	38.0	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	126.7	2.2	3.0	2.2	16.2	34.8	43.2	30.6	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	79.0	0.6	(3.4)	(3.7)	(11.7)	(16.8)	2.3	(7.1)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	9.4	0.0	(0.8)	2.4	12.4	18.2	26.6	22.5	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	347,000	(1.4)	(5.7)	(7.5)	(7.6)	(14.6)	(6.8)	(14.3)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	300,000	(0.8)	(3.8)	(12.9)	(21.3)	(30.2)	(25.7)	(18.5)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	19,750	(0.5)	(2.9)	(7.1)	(22.7)	(36.9)	(44.6)	(37.5)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	100,000	4.0	1.4	(2.9)	0.7	10.4	27.1	0.5	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	47,000	0.0	2.4	3.9	15.9	19.3	21.8	0.0	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	55,400	(0.5)	(4.5)	(5.1)	(16.2)	(6.4)	9.7	(12.2)	359	#N/A	N/A	#N/A	N/A	#N/A	N/A
효성	KRW	6,670	2.1	1.5	5.4	(10.8)	(30.3)	1.1	(12.0)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			(0.1)	(1.8)	(2.2)	(2.8)	(2.0)	5.8	(2.1)							
Refinery																
Valero	USD	115.3	0.1	(2.2)	(0.1)	(3.7)	22.2	65.7	25.4	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	71.2	1.3	(3.1)	(1.1)	2.5	29.2	60.0	29.6	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemical	TWD	124.5	0.8	0.0	3.3	0.4	9.7	16.4	7.8	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	153.2	(0.0)	0.3	2.0	5.9	50.0	50.9	34.0	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	82.4	(0.1)	0.2	1.9	4.4	17.4	54.3	24.9	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	40.5	0.1	(5.6)	(5.4)	(3.9)	23.8	28.7	(2.1)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	71.2	0.5	(4.5)	3.1	(7.8)	53.0	119.7	39.0	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	114.0	(0.3)	(3.8)	(7.0)	(2.5)	18.8	34.5	12.7	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	29.8	0.1	(3.5)	(4.2)	(11.8)	17.5	26.8	(4.2)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	714.9	(0.6)	(7.7)	(10.9)	0.1	10.8	33.6	(1.7)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	5,530.0	0.5	(0.4)	5.9	49.3	36.4	98.7	22.2	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	71.4	0.5	(3.9)	(4.7)	0.7	19.9	98.2	33.8	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	83.6	(0.4)	(0.8)	(2.2)	4.4	15.1	35.5	17.3	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	48.8	0.5	(3.4)	(1.2)	8.0	2.0	1.0	10.2	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	199,500	3.6	2.6	3.9	(5.0)	(2.4)	7.0	(2.4)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	121,500	2.1	0.4	3.8	9.0	(0.4)	0.4	3.8	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	52,500	1.5	(0.6)	(2.2)	(10.4)	(20.2)	(21.3)	(15.6)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			0.6	(2.1)	(0.9)	2.3	17.8	41.8	13.8							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	09/10	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
E&P/Shale																
Exxon Mobil	USD	82	(0.1)	1.9	2.9	(2.3)	9.6	3.7	(2.3)	345,945	17.6	14.8	1.8	1.7	7.9	6.9
BP	GBP	539	0.3	(2.7)	(3.1)	(7.8)	12.6	20.7	3.0	140,137	12.6	11.4	1.4	1.3	4.9	4.6
Shell	EUR	2,427	(0.7)	(4.8)	(4.1)	(6.9)	7.3	13.5	(2.1)	264,512	11.6	9.9	1.3	1.3	5.5	5.1
Chevron	USD	114	(0.1)	(3.4)	(7.2)	(9.5)	(2.3)	3.3	(8.6)	219,361	14.5	12.8	1.4	1.4	6.0	5.4
Total	EUR	52	(0.2)	(4.2)	(3.8)	(2.3)	11.7	17.9	12.7	160,457	11.1	10.1	1.3	1.2	5.5	5.0
Sinopec	CNY	7	0.6	(1.3)	1.4	3.4	5.2	12.8	9.6	117,754	10.2	9.9	1.1	1.0	3.9	3.8
Petrochina	CNY	8	(0.2)	1.4	1.9	3.4	1.9	1.2	1.1	208,676	25.2	21.0	1.2	1.2	5.4	5.3
CNOOC	CNY	10	(2.2)	(1.6)	(0.2)	(0.8)	(5.2)	(8.3)	(2.4)	77,922	9.6	8.9	1.3	1.2	3.8	3.7
Gazprom	RUB	151	1.3	1.4	4.1	4.6	7.8	25.3	15.5	50,604	3.1	3.1	0.2	0.2	2.4	2.4
Rosneft	RUB	449	2.3	2.4	3.7	17.6	43.5	42.7	54.2	67,543	8.4	6.9	1.0	0.9	4.7	4.4
Anadarko	USD	63	(0.6)	(1.9)	(5.4)	(11.5)	8.9	54.4	17.8	32,353	21.8	15.5	2.6	2.2	6.3	5.5
Petrobras	BRL	19	1.4	1.4	(1.7)	26.3	(14.0)	30.9	19.6	66,392	6.9	5.6	0.7	0.6	4.5	4.1
Lukoil	USD	4,689	1.4	(0.8)	2.4	11.9	23.7	60.3	40.6	56,443	5.6	5.8	0.8	0.8	N/A	N/A
Kinder	USD	18	(0.7)	(0.1)	(2.6)	5.0	8.3	(7.6)	(2.1)	47,497	20.4	17.8	1.2	1.2	10.6	10.4
Equinor ASA	NOK	210	0.4	(2.4)	(2.3)	(3.0)	17.8	42.4	19.9	83,660	12.7	11.6	1.9	1.7	3.3	3.1
BHP	AUD	31	(0.3)	(5.5)	(7.5)	(8.4)	10.2	14.3	5.5	112,935	12.8	13.9	2.1	2.1	5.7	6.0
PTT E&P	THB	138	(1.1)	(3.2)	(0.7)	1.1	21.1	52.8	37.5	16,633	13.3	12.1	1.4	1.3	4.2	3.9
Petronas gas	MYR	19	0.0	(0.2)	(2.3)	3.9	6.7	2.1	6.2	8,846	19.3	19.3	2.8	2.7	10.6	10.6
Chesapeake	USD	4	1.2	(7.9)	(12.4)	(15.2)	31.6	12.1	3.0	3,722	5.2	5.2	#N/A	N/A	6.4	6.3
Noble Energy	USD	29	(0.7)	(2.8)	(5.6)	(15.2)	(7.1)	17.3	(0.9)	13,952	28.0	21.7	1.3	1.3	6.9	6.0
Average		0	0.1	(1.7)	(2.1)	(0.3)	10.0	20.6	11.4							
PV																
WACKER	EUR	118.0	1.2	(4.9)	(5.0)	(0.5)	(14.1)	6.2	(27.3)	7,139	16.8	15.1	1.8	1.7	6.3	6.0
GCL-Poly	HKD	0.5	(3.6)	(8.5)	(8.5)	(32.5)	(56.1)	(39.3)	(61.4)	1,261	8.7	6.6	0.4	0.3	7.1	6.4
SunPower	USD	6.5	1.4	(3.9)	(10.0)	(8.4)	(9.8)	(24.8)	(23.4)	911	#N/A	N/A	#N/A	N/A	16.3	10.2
Canadian Solar	USD	14.7	0.3	2.3	2.9	19.0	(9.3)	(9.9)	(12.9)	861	10.2	10.3	0.8	0.8	6.8	7.6
JA Solar	USD	7.5	0.0	0.0	0.0	6.1	0.8	(3.1)	0.4	356	#N/A	N/A	#N/A	N/A	#N/A	N/A
Yingli	USD	0.3	(10.7)	(10.7)	(24.2)	(84.6)	(85.4)	(89.2)	(85.2)	5	#N/A	N/A	#N/A	N/A	#N/A	N/A
First Solar	USD	48.2	(0.7)	(7.5)	(8.8)	(8.6)	(29.1)	2.7	(28.7)	5,047	29.5	15.8	0.9	0.9	6.4	3.4
한화큐셀	USD	8.5	(0.2)	0.2	1.8	29.4	5.5	14.0	20.4	703	15.1	31.3	#N/A	N/A	8.9	9.1
OCI	KRW	114,000	(0.9)	(5.4)	6.0	(3.0)	(26.7)	12.9	(16.2)	2,403	0.0	12.8	0.0	0.8	0.0	5.6
웅진에너지	KRW	2,765	(3.2)	(6.4)	(14.5)	(48.3)	(61.5)	(70.4)	(66.4)	73	N/A	0.0	0.8	0.0	5.6	0.0
신성솔라에너지	KRW	1,405	1.1	2.2	0.4	(17.1)	(21.7)	(31.3)	(26.6)	215	N/A	0.8	0.0	5.6	0.0	2.3
Average			(1.4)	(3.9)	(5.5)	(13.5)	(27.9)	(21.1)	(29.7)							
Gas Company																
Towngas China	HKD	7.1	(1.5)	(0.3)	(9.2)	(2.6)	14.0	34.9	12.6	2,531	13.7	12.2	1.2	1.1	12.4	11.3
Kulun	HKD	8.4	(0.2)	1.0	9.5	14.9	17.6	11.7	3.2	8,638	11.2	9.8	1.4	1.3	5.7	5.2
Beijing Enterprise	HKD	38.4	(1.7)	2.1	3.2	(10.3)	(12.4)	(10.7)	(17.2)	6,174	6.5	5.9	0.7	0.6	13.1	12.4
ENN Energy	HKD	72.8	(2.3)	(0.3)	(5.6)	(6.7)	18.6	33.9	30.5	10,429	16.4	14.1	3.4	2.9	10.2	8.9
China Resources Gas	HKD	37.2	0.3	4.9	4.6	23.4	42.3	35.5	31.2	10,540	18.2	16.2	3.2	2.8	10.0	9.0
China Gas Holdings	HKD	23.2	(3.1)	(5.3)	(23.7)	(31.1)	(2.3)	7.2	7.4	15,018	14.7	12.6	3.4	2.9	12.1	10.3
Shenzen Gas	HKD	13.9	(4.3)	(8.2)	(1.4)	(17.8)	(10.7)	(2.8)	(6.9)	3,729	9.0	7.5	1.1	1.0	7.0	6.2
Shann Xi	CNY	7.5	2.5	6.6	(5.9)	(6.6)	(0.1)	(13.7)	(11.5)	1,211	18.0	15.8	1.4	1.3	#N/A	N/A
Suntien	HKD	2.1	(2.3)	(7.5)	(10.7)	(21.1)	6.1	16.1	1.0	989	5.5	4.8	0.7	0.6	8.3	7.1
China Oil & Gas	HKD	0.6	(3.3)	0.0	(10.8)	(7.9)	(13.4)	1.8	(31.8)	431	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			(1.6)	(0.7)	(5.0)	(6.6)	6.0	11.4	1.9							
EV																
LG 화학	KRW	347,000	(1.4)	(5.7)	(7.5)	(7.6)	(14.6)	(6.8)	(14.3)	21,650	13.3	11.9	1.5	1.4	6.5	5.8
삼성SDI	KRW	244,000	2.1	0.6	14.3	8.2	24.2	26.8	19.3	14,829	22.5	15.8	1.4	1.3	14.2	11.0
Panasonic	JPY	1264.0	(0.7)	(4.4)	(11.1)	(18.9)	(22.7)	(13.9)	(23.4)	27,901	11.5	10.2	1.6	1.4	4.6	4.3
GS Yuasa	JPY	530.0	1.3	0.0	5.6	1.7	(7.8)	(0.2)	(5.5)	1,972	16.1	14.8	1.2	1.1	7.2	6.6
NEC	JPY	3020.0	0.5	(1.0)	0.2	(1.3)	(5.8)	5.6	(0.7)	7,078	22.3	12.4	0.9	0.8	7.5	5.5
BYD Auto	CNY	41.7	(2.5)	(4.4)	0.1	(16.8)	(36.3)	(16.2)	(35.8)	16,212	27.0	20.1	2.0	1.8	12.2	10.5
Tesla Motors	USD	285.5	8.5	(5.4)	(19.7)	(10.1)	(12.7)	(16.9)	(8.3)	48,704	#N/A	N/A	88.5	8.2	37.4	16.8
Kandi Technologies	USD	4.0	(0.6)	(4.8)	(6.0)	(7.1)	(25.1)	2.6	(41.9)	203	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			0.9	(3.1)	(3.0)	(6.5)	(12.6)	(2.4)	(13.8)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임