

1. News Summary (3 page)

2018년 11월 9일

News	
WTI comment	나흘째 하락..'약세장 진입'
Headline	ExxonMobil 관계자, "Corpus Christi에서 수출 페이스 올릴 것"
News 1.	-
News 2.	-
News 3.	-
News 4.	-

Conclusion	
	아시아로의 PE 수출 증대로 순수화학업종의 타격은 더욱 커질 전망이다
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	60.7	(1.6)	(4.7)	(18.3)	(9.2)	6.1
Dubai	\$/bbl	71.5	1.3	(2.5)	(12.3)	(2.4)	16.1
Gasoline	\$/bbl	73.1	(1.7)	(6.8)	(20.8)	(15.0)	(4.9)
Diesel	\$/bbl	88.9	1.4	(2.7)	(8.4)	1.4	22.4
Complex margin	\$/bbl	6.4	(1.2)	(1.6)	(0.8)	(1.7)	(1.0)
1M lagging	\$/bbl	(3.6)	1.3	(5.1)	(16.6)	(10.4)	(18.9)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	558	(3.5)	(8.0)	(22.0)	(16.1)	(6.0)
Butadiene	\$/t	1,045	0.0	0.0	(16.4)	(39.4)	10.6
HDPE	\$/t	1,210	0.0	(1.6)	(5.5)	(7.6)	(3.2)
MEG	\$/t	740	(1.7)	(4.3)	(17.8)	(21.3)	(18.9)
PX	\$/t	1,134	(0.0)	(4.5)	(13.1)	2.4	28.4
SM	\$/t	1,065	(1.0)	(3.3)	(22.8)	(25.7)	(15.7)
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	3.54	(0.3)	9.5	8.1	15.1	10.6
Natural rubber	\$/t	1,230	0.0	0.0	(6.1)	(6.8)	(13.4)
Cotton	C/lbs	79.0	0.1	(0.0)	2.9	(9.5)	15.7

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	11/05	\$/t	805	(9.6)	(24.4)	(35.2)	(28.8)
Propylene	11/05	\$/t	965	(4.9)	(12.1)	(5.4)	24.5
Benzene	11/05	\$/t	733	(6.4)	(16.0)	(16.0)	(10.4)
Toluene	11/05	\$/t	850	(0.6)	0.0	4.9	20.6
Xylene	11/05	\$/t	890	0.0	0.6	7.9	34.3
PP	11/05	\$/t	1,243	(0.8)	(0.4)	1.6	10.2
PVC	11/05	\$/t	850	0.0	(1.2)	(10.1)	(4.5)
ABS	11/05	\$/t	1,710	(0.6)	(6.6)	(12.1)	(9.5)
SBR	11/05	\$/t	1,520	(1.6)	(8.4)	(13.6)	(3.2)
SM	11/05	\$/t	1,148	(6.9)	(18.5)	(21.7)	(4.0)
BPA	11/05	\$/t	1,765	(4.9)	(8.7)	(0.7)	(5.7)
Caustic	11/05	\$/t	375	(4.1)	(13.6)	1.6	(42.4)
2-EH	11/05	\$/t	1,160	(0.9)	0.0	5.0	16.0
Caprolactam	11/05	\$/t	2,080	0.5	(5.5)	(3.5)	(4.1)
Solar				%	%	%	%
Polysilicon	11/07	\$/kg	9.75	0.0	(5.7)	(13.6)	(41.5)
Module	11/07	\$/W	0.22	0.0	(3.9)	(11.8)	(29.1)

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	81.7	(1.6)	1.3	(5.1)	1.2	(2.1)
Shell	EUR	2,424	(0.3)	(0.0)	(5.7)	(7.0)	(1.5)
Petrochina	CNY	8.23	0.5	0.4	(6.8)	2.1	(3.2)
Gazprom	RUB	157.5	(0.2)	2.6	(8.3)	9.3	19.1
Petrobras	BRL	25.4	(3.6)	(7.2)	(4.7)	25.9	49.6
Refinery							
Phillips66	USD	98.7	(4.3)	(3.7)	(16.5)	(19.8)	4.4
Valero	USD	88.7	(4.2)	(4.1)	(23.7)	(23.5)	8.6
JX	JPY	780.7	6.1	4.8	(9.3)	(4.1)	23.9
Neste Oil	EUR	72.6	0.7	2.3	(1.2)	(1.8)	48.9

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	69.2	(1.2)	1.6	(6.9)	(13.9)	(28.4)
DowDuPont	USD	59.4	(0.7)	2.0	(5.9)	(12.1)	(16.1)
SABIC	SAR	123.0	(0.8)	(2.8)	(0.8)	(3.5)	23.8
Formosa Pla.	TWD	102.0	(0.5)	0.5	(8.5)	(8.9)	10.5
Shin-Etsu	JPY	10,215	1.8	7.9	2.9	(6.4)	(18.4)
Renewable							
Wacker	EUR	92.7	(1.9)	6.6	(9.8)	(28.1)	(32.8)
First Solar	USD	42.67	(3.4)	2.9	(9.7)	(21.6)	(30.9)
GCL-Poly	HKD	0.58	0.0	24.7	13.7	(3.3)	(58.6)
Tesla Motors	USD	351.4	0.9	2.1	40.2	(5.1)	15.4

4. Coverage Summary

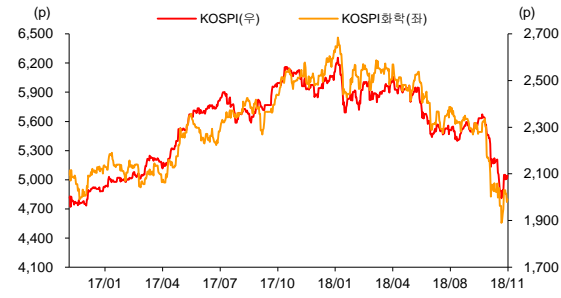
	11/08	1D	1W	1M	3M	6M	12M
KOSPI	2,093	0.7	3.4	(7.2)	(8.3)	(14.4)	(17.8)
KOSPI화학	4,796	0.5	2.1	(7.7)	(15.2)	(20.3)	(21.5)
LG화학	335,000	(1.5)	(1.2)	4.2	(10.7)	(1.3)	(18.1)
롯데케미칼	278,500	0.0	5.1	3.0	(19.2)	(28.4)	(24.8)
한화케미칼	17,800	2.0	8.9	(5.6)	(16.2)	(35.3)	(42.9)
금호석유화학	88,300	(0.2)	1.7	5.1	(14.3)	(18.6)	19.3
KCC	265,000	3.7	2.3	(15.3)	(21.2)	(29.0)	(35.8)
OCI	99,600	2.6	14.0	(10.7)	(7.3)	(33.2)	(21.0)
SKC	34,000	3.5	3.0	(17.5)	(24.9)	(14.8)	(14.6)
SK이노베이션	203,500	(0.2)	0.5	(6.4)	6.0	0.7	(4.9)
S-Oil	120,000	0.8	0.8	(9.8)	2.6	13.2	(6.3)
GS	49,600	(0.7)	3.3	(9.0)	(7.6)	(19.5)	(27.1)
SK가스	73,800	2.1	(0.1)	(12.5)	(13.0)	(18.4)	(22.9)
포스코대우	19,650	2.1	12.9	(7.5)	7.4	(10.9)	(6.9)
LG상사	16,450	2.5	4.8	(20.5)	(29.9)	(36.2)	(46.8)
한국전력	27,450	0.9	2.0	4.2	(13.0)	(23.1)	(28.2)
한국가스공사	52,900	1.0	2.5	(15.2)	(4.0)	(1.5)	23.9

투자 의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	400,000	19.4	14.70	1.53
매수	360,000	29.3	9.07	12.16
매수	27,000	51.7	8.66	0.43
매수	140,000	58.6	10.11	1.16
매수	400,000	50.9	14.90	0.44
매수	140,000	40.6	11.74	0.68
매수	50,000	47.1	9.41	0.80
매수	240,000	17.9	14.54	1.07
매수	150,000	25.0	15.05	1.98
매수	80,000	61.3	4.71	0.56
매수	120,000	62.6	6.05	0.49
매수	25,000	27.2	11.27	0.73
매수	30,000	82.4	5.94	0.48
매수	40,000	45.7	7.16	0.22
매수	75,000	41.8	9.53	0.69

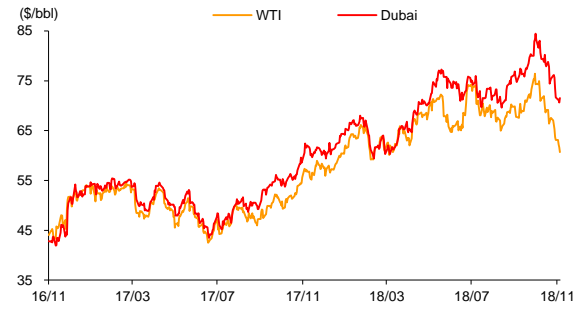
• 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
 • 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
 • 본 보고서는 기관투자가 또는 제 3자에게 사전 제공된 사실이 없습니다.
 • 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

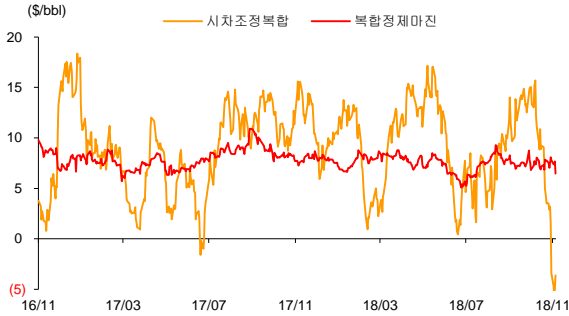
KOSPI/KOSPI화학



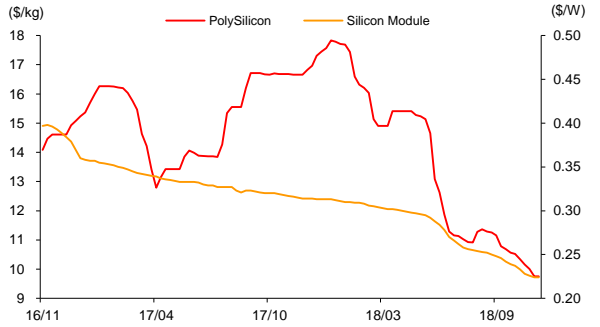
WTI/Dubai



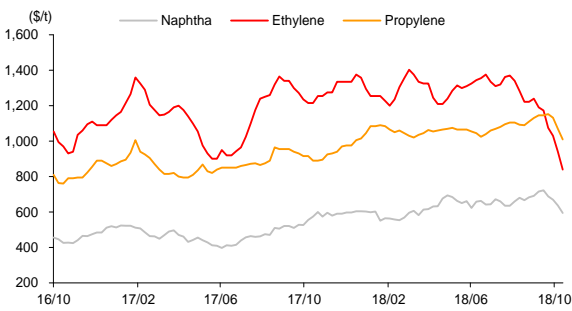
Complex & 1M lagging margin



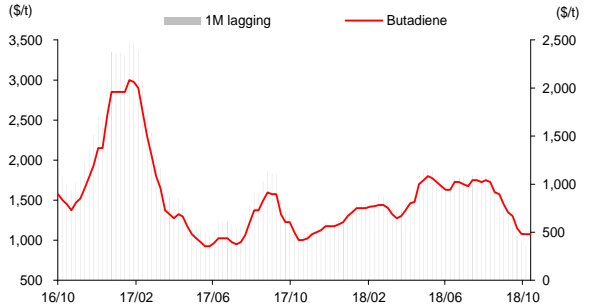
Polysilicon & Module prices



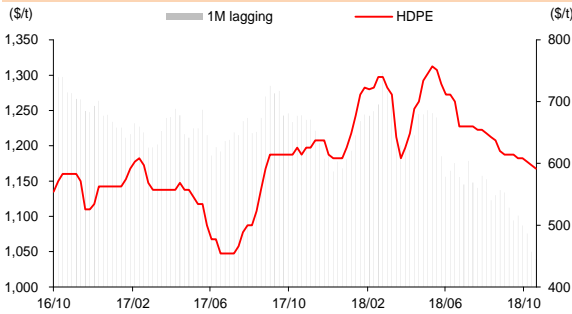
Naphtha/Ethylene/Propylene prices



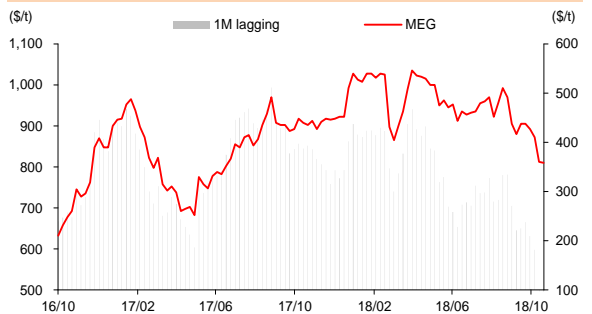
Butadiene price & 1M lagging naphtha spread



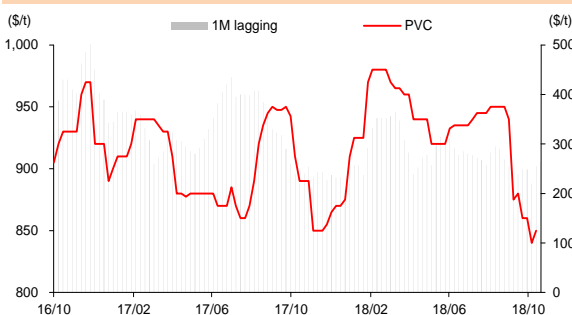
HDPE price & 1M lagging naphtha spread



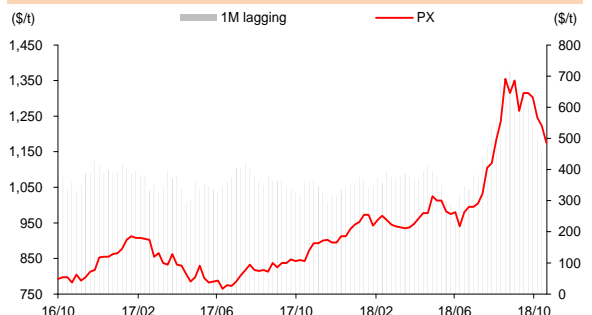
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Cischem, Petronet, Platts, Pvinfosights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

News Comment

Headline	(출처: Platts)
제목	ExxonMobil 관계자, "Corpus Christi에서 수출 페이스 올릴 것"
결론	아시아로의 PE 수출 증대로 순수화학업종의 타격은 더욱 커질 전망이다
세부	<ol style="list-style-type: none"> 1) ExxonMobil 관계자는 resin을 비롯한 화학제품 생산을 늘릴 것이라 밝힘 2) 이들은 대부분 아시아로 수출되며 라틴 아메리카로도 수출될 계획임 3) Corpus Christi는 180만톤의 크래커와 LLDPE 공장 2개와 MEG 공장 보유 4) 이곳은 PE 운반 용이성을 위해 철도도 구축되며 해양 터미널도 구축됨 5) 아시아로의 PE 수출 증대로 순수화학업종의 타격은 더욱 커질 전망이다

Issue 1
제목
결론
세부
1)
2)
3)
4)
5)

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

WTI Comment	(출처: 이데일리)
제목	나흘째 하락.. '약세장 진입'
상승	
요인	
하락	美 원유 재고는 7주 연속 증가
요인	지난 6월 이후 최고 수준인 4억3,200만b 기록
	美 원유 생산은 기록적인 수준인 1,160만b/d로 증가

Issue 2
제목
결론
세부
1)
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Issue 4
제목
결론
세부
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Issue 6
제목
결론
세부
1)
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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.	
F/X	USD/EUR	0.880	0.875	0.877	0.870	0.861	0.843	0.863	0.833	0.904	0.887	0.842	
	Change, %		0.5	0.4	1.1	2.2	4.4	2.0	5.6	(2.6)	(0.7)	4.5	
	USD/JPY	114.1	113.5	112.7	113.2	111.0	109.1	113.9	112.6	108.8	112.1	110.1	
	Change, %		0.5	1.2	0.7	2.8	4.5	0.2	1.3	4.9	1.7	3.6	
	USD/KRW	1,116.7	1,123.2	1,138.3	1,132.4	1,120.0	1,076.6	1,115.5	1,066.7	1,160.5	1,130.9	1,096.2	
	Change, %		(0.6)	(1.9)	(1.4)	(0.3)	3.7	0.1	4.7	(3.8)	(1.3)	1.9	
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	Agriculture	Corn	373.5	372.3	366.8	366.5	371.3	395.5	348.3	350.8	358.5	359.4	367.8
Change, %			0.3	1.8	1.9	0.6	(5.6)	7.3	6.5	4.2	3.9	1.5	
Soybean		867.5	867.8	869.0	869.8	893.8	1,011.3	988.0	951.8	987.5	975.9	938.7	
Change, %			(0.0)	(0.2)	(0.3)	(2.9)	(14.2)	(12.2)	(8.9)	(12.2)	(11.1)	(7.6)	
Wheat		507.8	510.3	508.0	514.0	570.0	517.8	426.8	427.0	436.4	436.0	492.6	
Change, %			(0.5)	(0.0)	(1.2)	(10.9)	(1.9)	19.0	18.9	16.4	16.4	3.1	
Rice		10.6	10.7	10.6	10.9	10.7	12.5	11.1	11.7	10.3	11.1	11.7	
Change, %			(0.8)	(0.2)	(2.4)	(0.3)	(15.2)	(4.7)	(9.1)	2.6	(4.0)	(9.2)	
Oats		286.8	287.3	281.3	282.3	263.8	229.0	269.5	241.0	196.3	252.3	251.6	
Change, %			(0.2)	2.0	1.6	8.7	25.2	6.4	19.0	46.1	13.7	14.0	
MYR/mt		Palm Oil	1,929.0	1,950.0	1,976.0	2,116.0	2,220.0	2,359.0	2,772.0	2,444.0	2,653.8	2,787.3	2,311.1
		Change, %		(1.1)	(2.4)	(8.8)	(13.1)	(18.2)	(30.4)	(21.1)	(27.3)	(30.8)	(16.5)
		Cocoa	2,265.0	2,383.0	2,264.0	2,086.0	2,111.0	2,794.0	2,216.0	1,892.0	2,854.0	2,005.2	2,326.7
		Change, %		(5.0)	0.0	8.6	7.3	(18.9)	2.2	19.7	(20.6)	13.0	(2.7)
	Cotton	79.0	79.0	79.0	77.9	87.4	85.4	68.6	78.6	65.6	73.5	83.0	
	Change, %		0.1	(0.0)	1.4	(9.6)	(7.5)	15.1	0.5	20.5	7.4	(4.9)	
	Sugar	12.8	13.0	13.2	12.9	10.8	11.6	14.8	15.2	18.2	15.8	12.2	
	Change, %		(1.3)	(2.7)	(0.8)	18.8	11.1	(13.5)	(15.3)	(29.3)	(18.8)	5.2	
Coffee	116.7	115.6	117.8	111.9	107.9	116.6	125.8	126.2	136.1	133.0	114.1		
Change, %		0.9	(1.0)	4.3	8.2	0.1	(7.2)	(7.6)	(14.3)	(12.3)	2.2		
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Energy	WTI	60.7	61.7	63.7	74.3	66.9	69.1	56.8	60.4	43.4	51.0	67.1	
	Change, %		(1.6)	(4.7)	(18.3)	(9.4)	(12.1)	6.8	0.4	39.8	19.0	(9.6)	
	Brent	70.9	72.1	72.9	83.9	72.3	74.9	63.5	66.9	45.1	54.9	73.5	
	Change, %		(1.6)	(2.7)	(15.5)	(1.9)	(5.3)	11.7	6.0	57.3	29.3	(3.5)	
	Natural Gas	3.5	3.6	3.2	3.3	2.9	2.7	3.2	3.0	2.6	3.0	2.9	
	Change, %		(0.3)	9.5	8.4	20.1	29.7	11.6	20.0	38.8	17.2	22.2	
	Ethanol	1.3	1.3	1.3	1.3	1.4	1.5	1.4	1.3	1.5	1.5	1.4	
	Change, %		(0.5)	(0.7)	(4.0)	(8.6)	(13.9)	(12.2)	(3.9)	(16.2)	(15.2)	(9.0)	
	RBOB Gasoline	164.4	164.7	171.7	209.4	202.0	211.1	182.1	179.9	140.0	162.9	199.7	
	Change, %		(0.2)	(4.2)	(21.5)	(18.6)	(22.1)	(9.7)	(8.6)	17.5	0.9	(17.6)	
Coal	105.4	105.5	102.9	112.8	115.9	101.0	98.0	100.8	65.5	88.2	107.9		
Change, %		(0.1)	2.4	(6.6)	(9.1)	4.3	7.5	4.5	60.9	19.4	(2.4)		
<hr/>													
Metal	Gold	1,224.0	1,226.5	1,233.5	1,188.2	1,214.0	1,314.6	1,281.4	1,302.6	1,248.5	1,258.6	1,274.5	
	Change, %		(0.2)	(0.8)	3.0	0.8	(6.9)	(4.5)	(6.0)	(2.0)	(2.8)	(4.0)	
	Silver	14.4	14.6	14.7	14.4	15.4	16.5	17.0	16.9	17.1	17.1	15.9	
	Change, %		(0.9)	(2.1)	0.5	(6.4)	(12.4)	(15.3)	(14.8)	(15.6)	(15.4)	(9.2)	
	Copper	6,155.0	6,153.0	6,090.0	6,178.0	6,173.0	6,745.0	6,855.0	7,247.0	4,872.0	6,199.4	6,615.3	
	Change, %		0.0	1.1	(0.4)	(0.3)	(8.7)	(10.2)	(15.1)	26.3	(0.7)	(7.0)	
	Nickel	854.6	848.6	867.0	936.7	960.3	933.0	822.3	809.1	646.4	680.2	917.6	
	Change, %		0.7	(1.4)	(8.8)	(11.0)	(8.4)	3.9	5.6	32.2	25.6	(6.9)	
	Zinc	2,522.5	2,455.0	2,540.0	2,615.0	2,612.0	3,060.0	3,192.0	3,319.0	2,097.5	2,888.5	2,953.0	
	Change, %		2.7	(0.7)	(3.5)	(3.4)	(17.6)	(21.0)	(24.0)	20.3	(12.7)	(14.6)	
	Lead	1,990.8	1,913.0	1,941.3	1,951.8	2,123.0	2,285.8	2,505.0	2,482.8	1,868.3	2,315.7	2,290.3	
	Change, %		4.1	2.5	2.0	(6.2)	(12.9)	(20.5)	(19.8)	6.6	(14.0)	(13.1)	
	Aluminum	13,925.0	13,860.0	13,860.0	14,335.0	14,335.0	14,625.0	15,705.0	15,020.0	12,373.5	14,556.6	14,351.4	
	Change, %		0.5	0.5	(2.9)	(2.9)	(4.8)	(11.3)	(7.3)	12.5	(4.3)	(3.0)	
	Cobalt	55,000.0	55,000.0	58,094.0	62,492.0	61,500.0	88,500.0	60,040.0	75,205.0	25,480.1	55,906.9	75,876.4	
	Change, %		0.0	(5.3)	(12.0)	(10.6)	(37.9)	(8.4)	(26.9)	115.9	(1.6)	(27.5)	
	HR Coil	816.0	817.0	825.0	828.0	895.0	870.0	610.0	662.0	519.3	620.1	838.5	
Change, %		(0.1)	(1.1)	(1.4)	(8.8)	(6.2)	33.8	23.3	57.1	31.6	(2.7)		
Scrap	398.0	403.0	399.0	396.0	392.0	381.0	325.0	367.0	275.7	344.7	389.7		
Change, %		(1.2)	(0.3)	0.5	1.5	4.5	22.5	8.4	44.4	15.4	2.1		

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		11/08	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Crude Oil	WTI	60.7	61.7	63.7	74.3	66.8	71.4	57.2	53.7	43.4	50.9	67.1	
	Change, %		(1.6)	(4.7)	(18.3)	(9.2)	(15.0)	6.1	12.9	39.9	19.2	(9.6)	
	Dubai	71.5	70.6	73.4	81.6	73.3	74.7	61.6	53.8	41.3	53.1	71.1	
	Change, %		1.3	(2.5)	(12.3)	(2.4)	(4.3)	16.1	32.9	73.2	34.8	0.6	
Crude Oil Product	Gasoline(휘발유)	73.1	74.4	78.4	92.2	86.0	87.1	76.8	69.8	56.3	68.0	82.9	
	Change, %		(1.7)	(6.8)	(20.8)	(15.0)	(16.1)	(4.9)	4.6	29.9	7.5	(11.9)	
	Kerosene(등유)	89.7	88.0	91.3	96.3	88.1	90.0	74.4	66.4	52.9	65.2	86.4	
	Change, %		1.9	(1.8)	(6.9)	1.7	(0.4)	20.5	35.0	69.5	37.4	3.7	
	Diesel(경유)	88.9	87.7	91.4	97.1	87.7	89.5	72.6	65.5	52.1	65.6	86.0	
	Change, %		1.4	(2.7)	(8.4)	1.4	(0.7)	22.4	35.7	70.6	35.5	3.4	
	Bunker-C	74.7	74.2	75.3	77.3	70.9	67.2	57.4	52.1	35.5	49.7	66.2	
	Change, %		0.6	(0.9)	(3.4)	5.3	11.2	30.0	43.4	110.2	50.4	12.8	
	Naphtha	53.9	62.2	65.9	78.0	72.4	74.9	64.8	53.5	42.6	53.7	69.5	
	Change, %		(13.3)	(18.2)	(30.8)	(25.5)	(28.0)	(16.8)	0.9	26.6	0.3	(22.4)	
	Dubai Spread	Gasoline(휘발유)	1.5	3.7	5.1	10.6	12.7	12.4	15.2	16.0	14.9	14.9	11.8
		Change		(2.2)	(3.5)	(9.1)	(11.2)	(10.8)	(13.7)	(14.5)	(13.4)	(13.4)	(10.3)
Kerosene(등유)		18.1	17.4	17.9	14.7	14.8	15.3	12.8	12.6	11.6	12.1	15.3	
Change			0.8	0.2	3.4	3.3	2.9	5.3	5.5	6.5	6.0	2.8	
Diesel(경유)		17.4	17.0	18.0	15.5	14.4	14.8	11.0	11.7	10.8	12.5	14.9	
Change			0.3	(0.6)	1.9	3.0	2.6	6.4	5.7	6.6	4.9	2.5	
Bunker-C		3.1	3.6	1.9	(4.3)	(2.4)	(7.6)	(4.2)	(1.8)	(5.8)	(3.4)	(5.0)	
Change		(0.5)	1.2	7.4	5.5	10.7	7.3	4.9	8.9	6.6	8.1		
Naphtha		(17.6)	(8.5)	(7.4)	(3.7)	(0.9)	0.2	3.2	(0.4)	1.3	0.6	(1.6)	
	Change		(9.1)	(10.2)	(14.0)	(16.7)	(17.8)	(20.8)	(17.3)	(18.9)	(18.3)	(16.0)	
Refining Margin	Simple(단순)	5.0	5.8	5.4	2.3	3.5	1.2	2.5	3.8	1.9	3.2	2.4	
	Change		(0.8)	(0.5)	2.7	1.4	3.7	2.5	1.2	3.0	1.8	2.6	
Complex(복합)		6.4	7.7	8.1	7.2	8.1	7.1	7.4	8.3	7.0	8.0	7.5	
	Change		(1.2)	(1.6)	(0.8)	(1.7)	(0.7)	(1.0)	(1.8)	(0.5)	(1.5)	(1.0)	
Complex(lagging)		(3.6)	(4.9)	1.4	13.0	6.7	17.1	15.3	18.0	8.5	8.9	9.0	
	Change		1.3	(5.1)	(16.6)	(10.4)	(20.8)	(18.9)	(21.6)	(12.1)	(12.6)	(12.7)	

자료 : Petronet, SK증권

참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음

참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

Petrochemical Price Data

Daily Price			11/08	11/07	11/06	11/05	11/02	11/01	10/31	10/30	10/29	10/26	
Spot Price	Naphtha	CFR Japan	557.5	578.0	584.3	584.3	592.5	606.0	639.5	641.3	637.8	631.0	
	Ethylene	CFR SE Asia	835.0	835.0	835.0	835.0	835.0	835.0	845.0	845.0	910.0	910.0	
	Propylene	FOB Korea	1,020.0	1,020.0	1,020.0	1,020.0	1,020.0	1,040.0	1,055.0	1,055.0	1,070.0	1,090.0	
	Butadiene	FOB Korea	1,045.0	1,045.0	1,045.0	1,045.0	1,045.0	1,045.0	1,045.0	1,045.0	1,045.0	1,045.0	
	HDPE	CFR FE Asia	1,210.0	1,210.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,240.0	1,250.0	
	LDPE	CFR FE Asia	1,040.0	1,040.0	1,060.0	1,060.0	1,080.0	1,090.0	1,090.0	1,090.0	1,090.0	1,100.0	1,100.0
	LLDPE	CFR FE Asia	1,040.0	1,040.0	1,060.0	1,060.0	1,070.0	1,080.0	1,080.0	1,080.0	1,080.0	1,090.0	1,090.0
	MEG	CFR China	740.0	753.0	790.0	790.0	795.0	773.0	810.0	812.0	800.0	798.0	
	PP	CFR FE Asia	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,210.0	1,210.0	1,220.0	1,220.0	
	PX	CFR China	1,133.7	1,134.0	1,165.7	1,165.7	1,166.7	1,187.3	1,213.5	1,216.5	1,221.3	1,214.0	
	PTA	CFR China	920.0	920.0	920.0	920.0	920.0	920.0	931.0	955.0	960.0	960.0	
	Benzene	FOB Korea	695.3	691.3	716.0	716.0	723.0	740.0	754.7	753.7	760.7	765.7	
	Toluene	FOB Korea	720.0	749.0	784.0	784.0	799.0	809.0	823.0	830.0	845.0	845.0	
	Xylene	FOB Korea	854.0	854.0	865.0	865.0	874.0	880.0	897.0	902.0	903.0	898.0	
	SM	FOB Korea	1,065.0	1,076.0	1,106.0	1,106.0	1,106.0	1,101.0	1,141.5	1,154.5	1,155.0	1,170.0	

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	Naphtha	CFR Japan	594.0	637.0	722.5	659.0	662.0	574.0	484.5	399.5	493.5	634.4
	<i>Change, %</i>			(6.8)	(17.8)	(9.9)	(10.3)	3.5	22.6	48.7	20.4	(6.4)
	Ethylene	CFR SE Asia	805.0	890.0	1,065.0	1,242.5	1,290.0	1,130.0	990.0	1,040.9	1,090.9	1,197.2
	<i>Change, %</i>			(9.6)	(24.4)	(35.2)	(37.6)	(28.8)	(18.7)	(22.7)	(26.2)	(32.8)
	Propylene	CFR SE Asia	965.0	1,015.0	1,097.5	1,020.0	965.0	775.0	815.0	705.7	823.6	1,070.5
	<i>Change, %</i>			(4.9)	(12.1)	(5.4)	0.0	24.5	18.4	36.8	17.2	(9.9)
	Butadiene	CFR SE Asia	1,025.0	1,025.0	1,250.0	1,700.0	1,680.0	950.0	2,100.0	1,116.8	1,481.1	1,438.4
	<i>Change, %</i>			0.0	(18.0)	(39.7)	(39.0)	7.9	(51.2)	(8.2)	(30.8)	(28.7)
	Benzene	CFR SE Asia	732.5	782.5	872.5	872.5	820.0	817.5	822.5	646.7	838.8	860.2
	<i>Change, %</i>			(6.4)	(16.0)	(16.0)	(10.7)	(10.4)	(10.9)	13.3	(12.7)	(14.8)
	Toluene	CFR SE Asia	850.0	855.0	850.0	810.0	795.0	705.0	690.0	630.5	689.5	791.6
	<i>Change, %</i>			(0.6)	0.0	4.9	6.9	20.6	23.2	34.8	23.3	7.4
	Xylene	CFR SE Asia	890.0	890.0	885.0	825.0	815.0	662.5	675.0	627.7	668.8	812.7
	<i>Change, %</i>			0.0	0.6	7.9	9.2	34.3	31.9	41.8	33.1	9.5

Spread	Ethylene	-Naphtha	211.0	253.0	342.5	583.5	628.0	556.0	505.5	641.4	597.4	562.8
	<i>Change, %</i>			(16.6)	(38.4)	(63.8)	(66.4)	(62.1)	(58.3)	(67.1)	(64.7)	(62.5)
	Propylene	-Naphtha	371.0	378.0	375.0	361.0	303.0	201.0	330.5	306.2	330.1	436.1
	<i>Change, %</i>			(1.9)	(1.1)	2.8	22.4	84.6	12.3	21.2	12.4	(14.9)
	Butadiene	-Naphtha	431.0	388.0	527.5	1,041.0	1,018.0	376.0	1,615.5	717.3	987.6	804.0
	<i>Change, %</i>			11.1	(18.3)	(58.6)	(57.7)	14.6	(73.3)	(39.9)	(56.4)	(46.4)
	Benzene	-Naphtha	138.5	145.5	150.0	213.5	158.0	243.5	338.0	247.2	345.3	225.9
	<i>Change, %</i>			(4.8)	(7.7)	(35.1)	(12.3)	(43.1)	(59.0)	(44.0)	(59.9)	(38.7)
	Toluene	-Naphtha	256.0	218.0	127.5	151.0	133.0	131.0	205.5	231.0	196.0	157.2
	<i>Change, %</i>			17.4	100.8	69.5	92.5	95.4	24.6	10.8	30.6	62.8
Xylene	-Naphtha	296.0	253.0	162.5	166.0	153.0	88.5	190.5	228.2	175.3	178.3	
<i>Change, %</i>			17.0	82.2	78.3	93.5	234.5	55.4	29.7	68.8	66.0	

자료 : Cischem, 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	1,167.5	1,172.5	1,182.5	1,222.5	1,227.5	1,187.5	1,142.5	1,134.6	1,142.5	1,235.7
	Change, %			(0.4)	(1.3)	(4.5)	(4.9)	(1.7)	2.2	2.9	2.2	(5.5)
	MEG	CFR SE Asia	810.0	812.5	905.0	960.0	927.5	902.5	847.5	660.8	850.6	954.7
	Change, %			(0.3)	(10.5)	(15.6)	(12.7)	(10.2)	(4.4)	22.6	(4.8)	(15.2)
	PVC	CFR SE Asia	850.0	850.0	860.0	945.0	935.0	890.0	920.0	823.4	899.9	929.8
	Change, %			0.0	(1.2)	(10.1)	(9.1)	(4.5)	(7.6)	3.2	(5.5)	(8.6)
	PP	CFR SE Asia	1,242.5	1,252.5	1,247.5	1,222.5	1,262.5	1,127.5	1,032.5	978.4	1,099.6	1,254.1
	Change, %			(0.8)	(0.4)	1.6	(1.6)	10.2	20.3	27.0	13.0	(0.9)
	2-EH	CFR Korea	1,160.0	1,170.0	1,160.0	1,105.0	1,100.0	1,000.0	865.0	772.4	970.0	1,124.1
	Change, %			(0.9)	0.0	5.0	5.5	16.0	34.1	50.2	19.6	3.2
	ABS	CFR SE Asia	1,710.0	1,720.0	1,830.0	1,945.0	1,960.0	1,890.0	1,635.0	1,347.1	1,844.7	1,967.0
	Change, %			(0.6)	(6.6)	(12.1)	(12.8)	(9.5)	4.6	26.9	(7.3)	(13.1)
	SBR	CFR SE Asia	1,520.0	1,545.0	1,660.0	1,760.0	1,770.0	1,570.0	2,000.0	1,483.0	1,980.5	1,742.6
	Change, %			(1.6)	(8.4)	(13.6)	(14.1)	(3.2)	(24.0)	2.5	(23.3)	(12.8)
	SM	CFR SE Asia	1,147.5	1,232.5	1,407.5	1,465.0	1,367.5	1,195.0	1,205.0	1,064.6	1,253.8	1,397.3
	Change, %			(6.9)	(18.5)	(21.7)	(16.1)	(4.0)	(4.8)	7.8	(8.5)	(17.9)
	Caustic	FOB NEA	375.0	391.0	434.0	369.0	475.0	651.0	422.5	316.6	491.2	510.0
	Change, %			(4.1)	(13.6)	1.6	(21.1)	(42.4)	(11.2)	18.5	(23.7)	(26.5)
	PX	CFR SE Asia	1,175.0	1,222.5	1,315.0	1,105.0	995.0	872.5	855.0	790.4	844.4	1,059.1
	Change, %			(3.9)	(10.6)	6.3	18.1	34.7	37.4	48.7	39.1	10.9
PO	CFR China	1,765.0	1,855.0	1,932.5	1,777.5	1,735.0	1,872.5	1,562.5	1,396.8	1,601.2	1,873.6	
Change, %			(4.9)	(8.7)	(0.7)	1.7	(5.7)	13.0	26.4	10.2	(5.8)	
Caprolactam	CFR SE Asia	2,080.0	2,070.0	2,200.0	2,155.0	2,140.0	2,170.0	1,850.0	1,344.9	1,936.4	2,132.4	
Change, %			0.5	(5.5)	(3.5)	(2.8)	(4.1)	12.4	54.7	7.4	(2.5)	
PTA	CFR SE Asia	930.0	975.0	1,030.0	882.5	865.0	670.0	642.5	613.7	667.8	871.0	
Change, %			(4.6)	(9.7)	5.4	7.5	38.8	44.7	51.5	39.3	6.8	
Spread	HDPE		573.5	535.5	460.0	563.5	565.5	613.5	658.0	735.1	649.0	601.4
	Change, %			7.1	24.7	1.8	1.4	(6.5)	(12.8)	(22.0)	(11.6)	(4.6)
	MEG		216.0	175.5	182.5	301.0	265.5	328.5	363.0	261.3	357.1	320.3
	Change, %			23.1	18.4	(28.2)	(18.6)	(34.2)	(40.5)	(17.3)	(39.5)	(32.6)
	PVC		256.0	213.0	137.5	286.0	273.0	316.0	435.5	423.9	406.4	295.5
	Change, %			20.2	86.2	(10.5)	(6.2)	(19.0)	(41.2)	(39.6)	(37.0)	(13.4)
	PP		648.5	615.5	525.0	563.5	600.5	553.5	548.0	578.9	606.1	619.7
	Change, %			5.4	23.5	15.1	8.0	17.2	18.3	12.0	7.0	4.6
	2-EH		566.0	533.0	437.5	446.0	438.0	426.0	380.5	372.9	476.5	489.7
	Change, %			6.2	29.4	26.9	29.2	32.9	48.8	51.8	18.8	15.6
	ABS		1,116.0	1,083.0	1,107.5	1,286.0	1,298.0	1,316.0	1,150.5	947.6	1,351.2	1,332.7
	Change, %			3.0	0.8	(13.2)	(14.0)	(15.2)	(3.0)	17.8	(17.4)	(16.3)
	SBR	BD spread	495.0	520.0	410.0	60.0	90.0	620.0	(100.0)	366.2	499.4	304.2
	Change, %			(4.8)	20.7	725.0	450.0	(20.2)	(595.0)	35.2	(0.9)	62.7
	SM		553.5	595.5	685.0	806.0	705.5	621.0	720.5	665.1	760.3	762.9
	Change, %			(7.1)	(19.2)	(31.3)	(21.5)	(10.9)	(23.2)	(16.8)	(27.2)	(27.4)
	Caustic											
	Change, %											
	PX		581.0	585.5	592.5	446.0	333.0	298.5	370.5	390.9	351.0	424.7
	Change, %			(0.8)	(1.9)	30.3	74.5	94.6	56.8	48.6	65.5	36.8
PO	propylene sprea	800.0	840.0	835.0	757.5	770.0	1,097.5	747.5	691.1	777.6	803.1	
Change, %			(4.8)	(4.2)	5.6	3.9	(27.1)	7.0	15.7	2.9	(0.4)	
Caprolactam	benzene sprea	1,347.5	1,287.5	1,327.5	1,282.5	1,320.0	1,352.5	1,027.5	698.2	1,097.6	1,272.2	
Change, %			4.7	1.5	5.1	2.1	(0.4)	31.1	93.0	22.8	5.9	
PTA	px spread	107.5	119.3	109.5	109.0	168.5	59.3	44.0	60.4	76.7	129.7	
Change, %			(9.9)	(1.8)	(1.4)	(36.2)	81.4	144.3	77.9	40.2	(17.1)	

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	11/08	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	59.4	(0.7)	2.0	(5.9)	(12.1)	(7.5)	(16.1)	(16.5)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	83.7	(0.6)	2.4	(8.3)	(17.5)	(20.7)	(7.6)	(9.7)	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	69.2	(1.2)	1.6	(6.9)	(13.9)	(19.3)	(28.4)	(24.6)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	74.8	0.5	(0.7)	(4.7)	(7.3)	(1.4)	(5.7)	2.5	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	94.8	(1.0)	1.3	(10.8)	(11.8)	(11.2)	(13.5)	(6.6)	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	56.2	(0.7)	1.2	(10.5)	(20.6)	(15.9)	(19.1)	(15.2)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	610	1.5	6.5	(4.7)	(4.7)	(4.4)	(28.2)	(24.7)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	935	0.5	3.3	(12.3)	(5.9)	(8.9)	(23.1)	(24.4)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,215	1.8	7.9	2.9	(6.4)	(7.9)	(18.4)	(10.8)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,240	0.5	(8.2)	(27.5)	(21.6)	(17.8)	(17.8)	(14.7)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	1,765	(0.5)	1.3	(14.6)	(18.1)	(15.1)	(21.6)	(20.4)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	6,075	(0.2)	0.2	(29.8)	(30.0)	(28.3)	(46.7)	(39.3)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	123.0	(0.8)	(2.8)	(0.8)	(3.5)	7.8	23.8	21.3	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	68.3	(0.3)	(1.0)	(0.4)	(7.1)	(4.9)	21.3	15.8	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	102.0	(0.5)	0.5	(8.5)	(8.9)	(3.3)	10.5	3.3	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	110.0	(0.5)	0.0	(9.5)	(9.1)	(0.9)	18.3	6.8	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	77.3	(0.1)	0.4	(5.8)	(9.1)	(6.8)	3.1	(0.8)	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.25	0.8	0.0	(8.1)	(2.8)	(10.6)	(20.1)	(17.1)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	1.97	1.5	2.1	(5.3)	0.5	(3.4)	(36.2)	(26.2)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,111	0.0	5.2	0.1	(8.8)	14.8	25.1	22.1	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	140.0	0.0	0.0	9.0	10.2	26.2	48.9	44.3	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	80.0	1.9	4.2	2.2	(4.8)	(14.9)	(0.3)	(5.9)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	9.7	0.0	3.6	3.7	7.3	15.2	29.9	26.0	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	335,000	(1.5)	(1.2)	4.2	(10.9)	1.4	(18.1)	(17.3)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	278,500	0.0	5.1	3.0	(21.0)	(27.8)	(24.4)	(24.3)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	17,800	2.0	8.9	(5.6)	(14.8)	(34.9)	(43.2)	(43.7)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	88,300	(0.2)	1.7	5.1	(14.3)	(16.3)	19.8	(11.3)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	34,000	3.5	3.0	(17.5)	(23.2)	(13.6)	(14.2)	(27.7)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	47,350	2.7	4.0	(8.1)	(19.5)	(28.3)	(19.5)	(25.0)	359	#N/A	N/A	#N/A	N/A	#N/A	N/A
효성	KRW	4,915	6.5	11.2	(16.1)	(22.6)	(34.5)	(36.4)	(35.2)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			0.5	2.1	(6.4)	(11.1)	(9.8)	(8.6)	(10.0)							
Refinery																
Valero	USD	88.7	(4.2)	(4.1)	(23.7)	(23.5)	(21.6)	8.6	(3.5)	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	66.9	(4.5)	(3.8)	(14.5)	(6.3)	(1.2)	25.0	21.9	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	119.5	(0.4)	(2.0)	(10.2)	(1.2)	(1.6)	12.2	3.5	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	153.5	0.0	0.0	0.0	1.3	11.6	38.1	34.2	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	67.7	(3.0)	(4.8)	(19.3)	(17.1)	(10.1)	7.1	2.6	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	32.7	(3.4)	(0.4)	(15.6)	(23.3)	(16.1)	(18.7)	(21.0)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	65.7	(3.5)	(2.3)	(2.8)	(5.3)	(2.0)	55.3	28.3	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	98.7	(4.3)	(3.7)	(16.5)	(19.8)	(15.1)	4.4	(2.5)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	30.8	(3.4)	(2.4)	(9.3)	(5.4)	3.6	5.9	(0.9)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	780.7	6.1	4.8	(9.3)	(4.1)	10.4	23.9	7.4	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	5,220.0	7.9	4.4	(17.3)	1.0	31.5	49.6	15.4	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	72.6	0.7	2.3	(1.2)	(1.8)	10.7	48.9	36.2	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	83.8	(0.2)	11.0	1.8	(2.4)	14.4	28.5	17.7	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	41.2	(1.4)	(0.5)	(12.0)	(16.2)	(9.9)	(13.6)	(6.8)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	203,500	(0.2)	0.5	(6.4)	8.0	1.8	(6.0)	(0.5)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	120,000	0.8	0.8	(9.8)	3.0	13.2	(5.5)	2.6	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	49,600	(0.7)	3.3	(9.0)	(6.8)	(17.7)	(25.7)	(20.3)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			(0.8)	0.2	(10.3)	(7.1)	0.1	14.0	6.7							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	11/08	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	(1.6)	1.3	(5.1)	1.2	4.6	(2.1)	(2.3)	345,944	17.2	14.1	1.8	1.7	7.7	6.5
BP	GBP	529	(2.8)	(2.3)	(8.3)	(8.3)	(3.9)	0.9	1.2	138,903	11.9	10.7	1.4	1.3	4.7	4.3
Shell	EUR	2,424	(0.3)	(0.0)	(5.7)	(7.0)	(5.0)	(1.5)	(2.3)	264,543	11.7	9.7	1.3	1.3	5.5	5.0
Chevron	USD	119	(1.2)	7.4	(4.4)	(3.6)	(5.7)	2.3	(4.7)	228,070	14.2	12.1	1.5	1.4	5.9	5.2
Total	EUR	51	(0.6)	1.6	(4.8)	(7.3)	(0.7)	5.1	11.7	157,214	10.8	9.5	1.3	1.2	5.3	4.7
Sinopec	CNY	6	0.2	(0.2)	(5.6)	(7.1)	(11.6)	0.5	2.0	108,325	9.5	9.3	1.0	1.0	3.6	3.5
Petrochina	CNY	8	0.5	0.4	(6.8)	2.1	5.0	(3.2)	1.7	208,486	23.6	19.9	1.2	1.2	5.3	5.0
CNOOC	CNY	10	1.0	4.2	(10.2)	(0.6)	(4.4)	(15.6)	(4.5)	80,768	9.7	8.5	1.4	1.3	3.9	3.6
Gazprom	RUB	158	(0.2)	2.6	(8.3)	9.3	8.3	19.1	20.7	55,913	2.8	2.9	0.3	0.3	2.5	2.4
Rosneft	RUB	475	(1.9)	3.3	(0.9)	10.7	20.8	42.6	63.0	75,486	7.2	6.0	1.1	1.0	4.3	4.1
Anadarko	USD	58	(0.2)	5.3	(16.6)	(11.3)	(13.8)	13.0	7.7	29,142	20.3	12.8	2.5	2.2	5.9	4.9
Petrobras	BRL	25	(3.6)	(7.2)	(4.7)	25.9	10.7	49.6	57.5	93,644	8.9	6.8	1.1	0.9	5.2	4.4
Lukoil	USD	5,160	(0.3)	4.5	3.9	14.7	23.4	54.7	54.7	58,125	5.6	5.7	0.9	0.8	N/A	N/A
Kinder	USD	18	0.3	2.3	(3.6)	(2.0)	9.3	(2.4)	(2.8)	47,497	21.2	17.0	1.2	1.2	10.2	10.0
Equinor ASA	NOK	214	(1.3)	(0.6)	(5.4)	(2.1)	2.7	25.1	21.9	85,321	12.3	10.5	2.0	1.7	3.3	2.9
BHP	AUD	33	(0.2)	0.7	(3.4)	(1.8)	4.8	17.0	12.7	123,384	13.1	14.2	2.4	2.3	6.2	6.5
PTT E&P	THB	140	1.4	1.4	(3.4)	(1.4)	6.9	48.1	40.0	16,860	13.2	11.4	1.4	1.3	4.1	3.7
Petronas gas	MYR	19	0.0	2.2	(0.2)	(2.6)	5.3	9.6	7.0	8,885	19.5	19.4	2.8	2.7	10.7	10.6
Chesapeake	USD	4	(4.8)	(0.8)	(24.2)	(24.0)	13.1	(10.8)	(10.6)	3,235	4.4	4.2	#N/A	N/A	4.5	6.3
Noble Energy	USD	27	(4.5)	2.6	(15.8)	(12.6)	(19.6)	(5.4)	(7.7)	12,907	25.6	18.2	1.2	1.2	6.5	5.5
Average		0	(1.0)	1.4	(6.7)	(1.4)	2.5	12.3	13.3							
PV																
WACKER	EUR	92.7	(1.9)	6.6	(9.8)	(28.1)	(40.6)	(32.8)	(42.9)	5,507	14.1	14.2	1.4	1.4	5.2	5.3
GCL-Poly	HKD	0.6	0.0	24.7	13.7	(3.3)	(38.3)	(58.6)	(58.6)	1,358	12.0	8.0	0.4	0.4	7.6	6.8
SunPower	USD	6.3	(2.8)	0.5	(7.9)	(15.3)	(26.1)	(28.2)	(25.7)	883	#N/A	N/A	#N/A	N/A	28.5	17.2
Canadian Solar	USD	14.3	(2.0)	(1.4)	0.5	(2.7)	(8.9)	(24.1)	(15.1)	839	10.3	10.2	0.8	0.8	6.6	7.5
JA Solar	USD	7.5	0.0	0.0	0.0	0.0	4.2	(6.4)	0.4	356	#N/A	N/A	#N/A	N/A	#N/A	N/A
Yingli	USD	0.2	20.1	27.7	(2.2)	(45.3)	(87.2)	(89.4)	(86.4)	4	#N/A	N/A	#N/A	N/A	#N/A	N/A
First Solar	USD	42.7	(3.4)	2.9	(9.7)	(21.6)	(36.6)	(30.9)	(36.8)	4,472	28.7	13.7	0.9	0.8	6.9	3.1
한화큐셀	USD	9.7	0.1	0.1	17.1	17.0	42.4	8.1	38.0	806	17.3	35.9	#N/A	N/A	9.4	9.6
OCI	KRW	99,600	2.6	14.0	(10.7)	(2.4)	(32.9)	(19.4)	(26.8)	2,122	0.0	15.3	0.0	0.7	0.0	5.5
웅진에너지	KRW	1,815	(6.9)	(1.4)	(13.8)	(44.2)	(70.2)	(76.5)	(77.9)	48	N/A	0.0	0.7	0.0	5.5	0.0
신성솔라에너지	KRW	1,145	2.2	1.3	(8.4)	(18.8)	(32.6)	(33.8)	(40.2)	177	N/A	0.7	0.0	5.5	0.0	0.4
Average			0.7	6.8	(2.8)	(15.0)	(29.7)	(35.6)	(33.8)							
Gas Company																
Towngas China	HKD	5.6	0.2	0.2	(1.4)	(28.8)	(19.2)	(13.5)	(10.2)	2,025	10.9	9.8	0.9	0.9	10.8	9.8
Kulun	HKD	9.6	3.1	3.9	9.8	30.6	44.7	33.5	18.4	9,942	12.1	10.7	1.6	1.4	6.0	5.5
Beijing Enterprise	HKD	45.3	3.8	5.8	7.9	21.6	15.6	(0.5)	(2.5)	7,296	7.6	6.9	0.8	0.7	15.0	12.7
ENN Energy	HKD	70.6	4.4	8.8	15.2	(11.0)	(0.9)	21.1	26.5	10,144	16.1	13.8	3.4	2.9	10.1	8.8
China Resources Gas	HKD	30.7	3.4	4.1	1.7	(16.2)	8.5	6.0	8.3	8,723	15.0	13.4	2.7	2.3	8.4	7.6
China Gas Holdings	HKD	26.0	2.6	7.0	19.8	(16.1)	(8.6)	9.9	20.4	16,846	16.7	14.1	3.8	3.2	13.3	11.3
Shenzen Gas	HKD	15.5	(0.3)	4.0	0.7	10.1	(13.0)	4.7	4.0	4,179	9.2	8.2	1.2	1.1	5.5	5.1
Shann Xi	CNY	7.6	(1.0)	2.6	(3.6)	(4.9)	(1.8)	(9.2)	(10.4)	1,212	18.1	16.0	1.5	1.4	#N/A	N/A
Suntien	HKD	2.2	1.9	7.8	14.6	(5.6)	(16.7)	3.8	6.3	1,044	5.8	5.1	0.7	0.7	8.4	7.3
China Oil & Gas	HKD	0.6	1.8	1.8	(1.8)	(12.5)	(3.4)	3.7	(34.1)	418	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			2.0	4.6	6.3	(3.3)	0.5	6.0	2.7							
EV																
LG화학	KRW	335,000	(1.5)	(1.2)	4.2	(10.9)	1.4	(18.1)	(17.3)	21,124	14.6	13.2	1.5	1.3	6.6	5.9
삼성SDI	KRW	229,000	(0.2)	0.2	(4.2)	1.6	24.5	3.6	12.0	14,066	20.5	13.5	1.3	1.2	11.9	8.9
Panasonic	JPY	1180.5	(0.0)	0.1	(11.5)	(18.1)	(26.1)	(33.1)	(28.4)	25,411	10.9	9.6	1.5	1.3	4.4	4.1
GS Yuasa	JPY	2427.0	0.4	3.0	(9.2)	(8.9)	(17.6)	(16.3)	(13.5)	1,762	14.6	13.5	1.1	1.0	6.7	6.2
NEC	JPY	3420.0	(0.3)	5.9	8.6	12.3	13.1	12.7	12.5	7,817	25.6	14.3	1.0	0.9	9.1	6.6
BYD Auto	CNY	49.0	3.7	7.2	5.2	27.9	(5.6)	(27.3)	(24.7)	18,985	36.7	26.4	2.4	2.2	13.0	10.9
Tesla Motors	USD	351.4	0.9	2.1	40.2	(5.1)	16.4	15.4	12.9	60,347	#N/A	N/A	60.8	10.4	9.7	32.7
Kandi Technologies	USD	5.3	2.5	9.6	(3.7)	28.3	1.2	(28.4)	(22.6)	271	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			0.7	3.4	3.7	3.4	0.9	(11.4)	(8.7)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임