

## 1. News Summary (3 page)

2017년 8월 24일

News	
<b>WTI comment</b>	재고감소에 소폭 상승...WTI 1.2%↑
<b>Headline</b>	美 미시건에 등지 톤 LG전자-LG화학, 전기차 시너지 기대
<b>News 1.</b>	글로벌 해양플랜트 발주 기지개...일감절벽 조선업계 '숨통'
<b>News 2.</b>	-
<b>News 3.</b>	-
<b>News 4.</b>	-

Conclusion	
	GM·포드·크라이슬러 등 주요 미국 고객사 확보에 경쟁력 향상 전망
	저유가 국면에서 사업성이 맞는 극히 일부의 프로젝트만 발주되는 것
	-
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## 2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
<b>Refinery</b>			%	%	%	%	%
WTI	\$/bbl	48.4	1.6	3.5	(0.7)	(5.7)	3.5
Dubai	\$/bbl	49.9	(0.1)	0.8	1.8	(6.0)	8.6
Gasoline	\$/bbl	66.4	(1.7)	(1.2)	4.8	(0.9)	16.2
Diesel	\$/bbl	62.3	0.1	(0.6)	(0.9)	(2.6)	10.5
Complex margin	\$/bbl	8.4	(0.3)	(0.8)	(0.2)	1.7	3.2
1M lagging	\$/bbl	10.1	(0.2)	(1.5)	(3.3)	1.7	0.4
<b>Petrochemical</b>			%	%	%	%	%
Naphtha	\$/t	463	(0.6)	0.6	5.6	1.2	17.5
Butadiene	\$/t	1,230	2.5	12.8	35.2	21.8	18.3
HDPE	\$/t	1,140	0.0	2.7	5.6	2.7	0.4
MEG	\$/t	868	(0.8)	2.7	2.7	15.3	40.5
PX	\$/t	801	(0.4)	0.1	1.4	(1.6)	1.7
SM	\$/t	1,193	(0.8)	3.6	4.6	11.9	16.7
<b>Commodity</b>			%	%	%	%	%
Natural Gas	\$/mmbtu	2.93	(0.4)	1.3	0.5	(11.9)	(2.9)
Natural rubber	\$/t	1,510	(2.6)	(0.7)	1.3	(0.7)	19.8
Cotton	C/lbs	69.6	1.0	3.0	0.8	(10.2)	3.2

Weekly	Update	Unit	Price	1W	1M	3M	12M
<b>Petrochemical</b>				%	%	%	%
Ethylene	08/21	\$/t	1,165	3.6	27.3	17.1	8.4
Propylene	08/21	\$/t	775	0.0	2.3	3.7	7.6
Benzene	08/21	\$/t	775	0.3	5.1	(0.6)	14.0
Toluene	08/21	\$/t	655	0.0	4.0	0.0	12.0
Xylene	08/21	\$/t	635	0.0	2.8	0.8	5.8
PP	08/21	\$/t	1,108	0.9	4.7	6.7	13.6
PVC	08/21	\$/t	890	2.3	2.3	1.1	7.2
ABS	08/21	\$/t	1,870	1.1	3.3	14.7	35.5
SBR	08/21	\$/t	1,540	2.0	2.7	(12.0)	9.2
SM	08/21	\$/t	1,193	1.9	1.9	7.2	13.0
BPA	08/21	\$/t	2,023	27.4	32.2	49.8	34.8
Caustic	08/21	\$/t	476	0.7	2.9	6.4	56.1
2-EH	08/21	\$/t	960	0.0	1.1	1.1	26.3
Caprolactam	08/21	\$/t	1,800	0.0	5.9	5.9	32.4
<b>Solar</b>				%	%	%	%
Polysilicon	08/23	\$/kg	15.6	0.0	9.0	15.8	0.6
Module	08/23	\$/W	0.32	(0.6)	(1.8)	(3.6)	(26.9)

\*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

## 3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
<b>E&amp;P</b>			%	%	%	%	%
ExxonMobil	USD	76.6	(0.2)	(1.1)	(4.4)	(7.2)	(12.7)
Shell	EUR	2,140	0.8	0.6	2.9	1.3	13.0
Petrochina	CNY	7.99	(0.2)	1.1	(0.5)	2.6	7.7
Gazprom	RUB	115.8	(0.2)	(0.9)	(2.7)	(6.1)	(15.7)
Petrobras	BRL	13.8	(0.2)	4.8	8.4	2.0	8.6
<b>Refinery</b>							
Phillips66	USD	82.4	0.2	(0.8)	(0.6)	5.4	5.8
Valero	USD	65.7	0.2	(0.4)	(3.1)	2.5	19.0
JX	JPY	540.3	1.3	2.6	9.6	10.2	40.9
Neste Oil	EUR	34.8	(0.3)	(0.9)	(7.3)	(7.3)	(9.7)

	Unit	Price	1D	1W	1M	3M	12M
<b>Petrochemical</b>			%	%	%	%	%
BASF	EUR	82.3	0.1	1.0	1.6	(3.7)	13.8
Dow Chemical	USD	64.6	(0.3)	1.0	(2.4)	6.3	20.1
SABIC	SAR	98.4	(0.1)	0.7	(1.5)	0.3	17.2
Formosa Pla.	TWD	93.0	0.0	1.6	1.6	5.7	17.3
Shin-Etsu	JPY	9,531	0.1	(2.4)	(7.8)	(2.9)	30.4
<b>Renewable</b>							
Wacker	EUR	106.3	1.0	4.3	6.1	9.1	26.6
First Solar	USD	46.48	(0.2)	(5.3)	2.9	27.4	24.1
GCL-Poly	HKD	0.91	0.0	0.0	(2.2)	4.6	(22.2)
Tesla Motors	USD	352.8	3.3	(2.8)	7.4	16.1	56.9

## 4. Coverage Summary

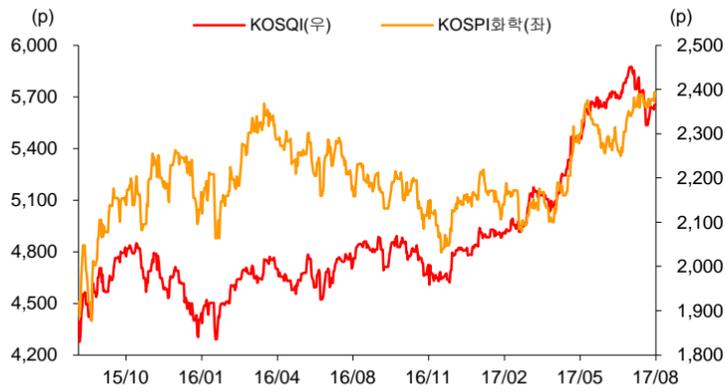
	08/23	1D	1W	1M	3M	6M	12M
KOSPI	2,366	0.0	0.8	(3.5)	1.0	12.5	15.9
KOSPI화학	5,708	(0.3)	1.0	1.8	1.4	10.9	9.7
LG화학	366,000	0.8	5.9	9.3	23.6	31.7	36.3
롯데케미칼	391,500	(1.5)	2.9	7.6	4.0	2.1	38.3
한화케미칼	35,150	(0.7)	0.1	6.2	20.0	32.4	34.2
금호석유화학	77,600	(0.1)	5.6	4.0	(2.8)	(1.0)	8.2
KCC	387,500	(0.5)	(3.4)	(9.9)	(4.9)	12.5	(10.0)
OCI	93,000	(1.5)	(1.1)	6.8	3.3	(1.2)	2.2
SKC	37,750	1.1	0.9	2.2	20.8	13.0	33.2
국도화학	53,400	(1.8)	(2.6)	(2.7)	6.4	0.9	(6.0)
SK이노베이션	171,000	(2.0)	0.3	(0.6)	0.9	10.7	12.1
S-Oil	116,000	(0.4)	3.1	6.9	12.6	34.6	53.8
GS	68,600	(1.3)	1.8	(6.0)	(4.2)	24.7	35.8
SK가스	110,000	0.0	0.5	0.5	(9.8)	1.9	13.1
포스코대우	21,850	(0.7)	0.2	(6.2)	(12.9)	(13.6)	(8.6)
LG상사	28,350	(0.9)	(1.0)	(5.8)	(14.5)	(14.9)	(18.1)
한국전력	44,000	0.5	0.1	(3.2)	3.3	2.3	(23.3)
한국가스공사	45,700	(0.8)	(3.0)	(8.0)	(11.3)	(6.1)	6.5

투자의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	330,000	(9.8)	14.57	1.96
매수	410,000	4.7	8.08	1.42
매수	33,000	(6.1)	8.39	1.04
매수	100,000	28.9	14.75	1.48
매수	450,000	16.1	22.04	0.62
매수	100,000	7.5	18.82	0.72
매수	40,000	6.0	14.23	1.01
매수	70,000	31.1	8.96	0.65
매수	180,000	5.3	7.68	0.93
매수	100,000	(13.8)	15.58	2.26
매수	80,000	16.6	5.70	1.01
매수	150,000	36.4	6.67	0.80
매수	27,000	23.6	7.59	0.90
매수	42,000	48.1	8.76	0.92
매수	60,000	36.4	7.60	0.35
매수	60,000	31.3	7.76	0.54

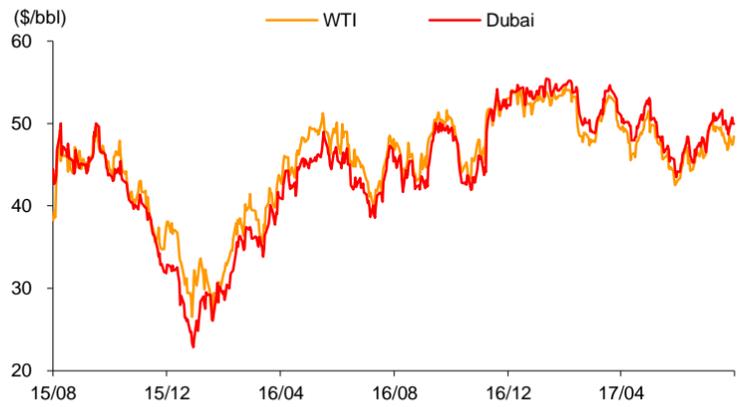
· 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.  
· 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.  
· 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.  
· 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

## Key Chart

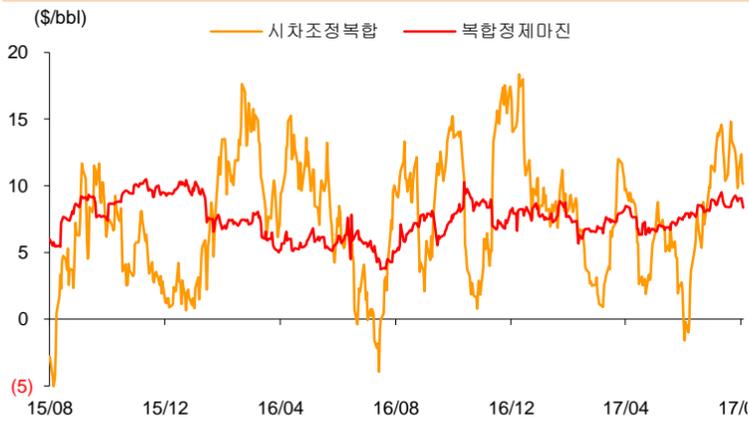
**KOSPI/KOSPI화학**



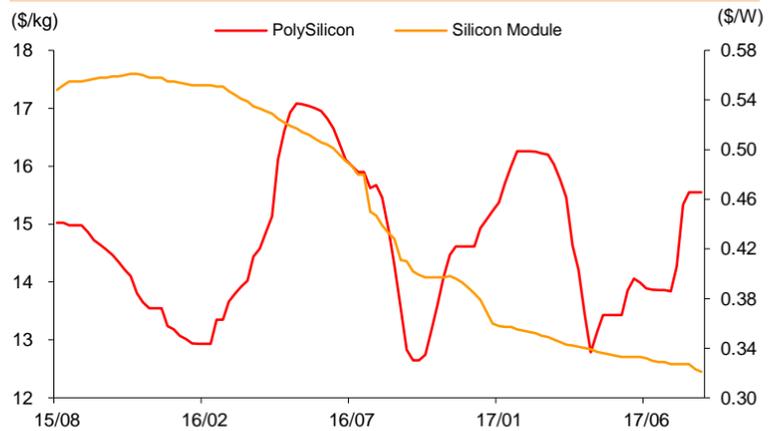
**WTI/Dubai**



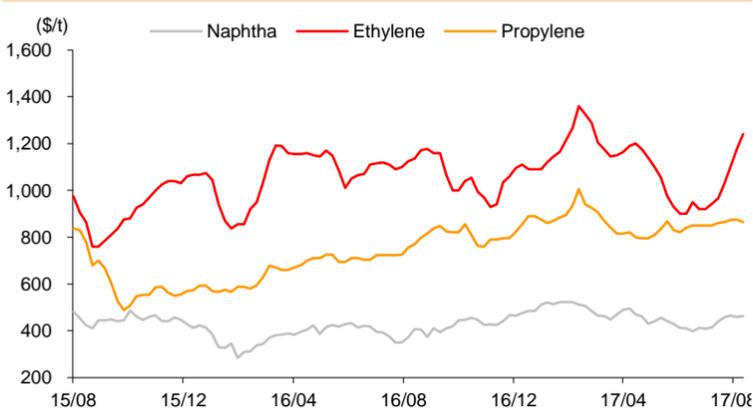
**Complex & 1M lagging margin**



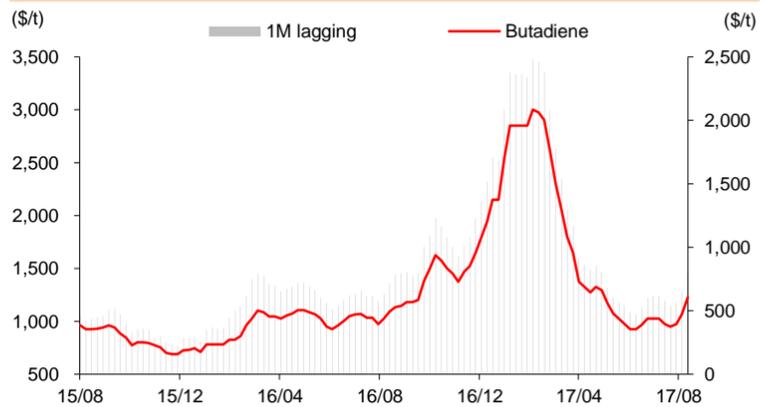
**Polysilicon & Module prices**



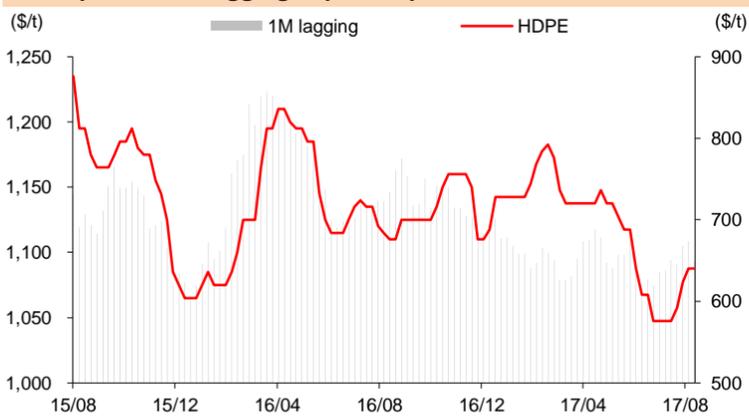
**Naphtha/Ethylene/Propylene prices**



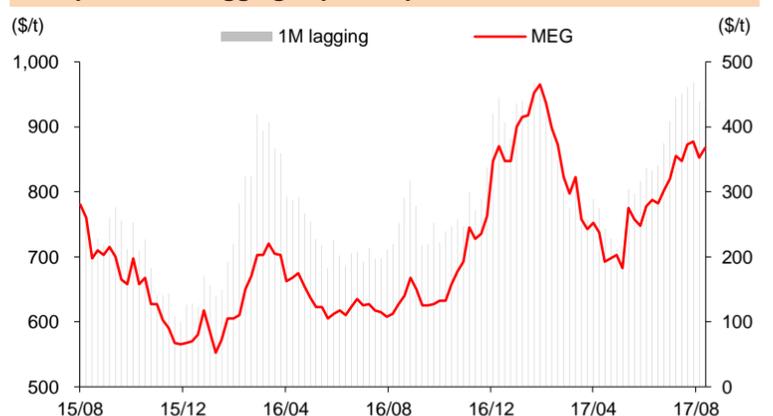
**Butadiene price & 1M lagging naphtha spread**



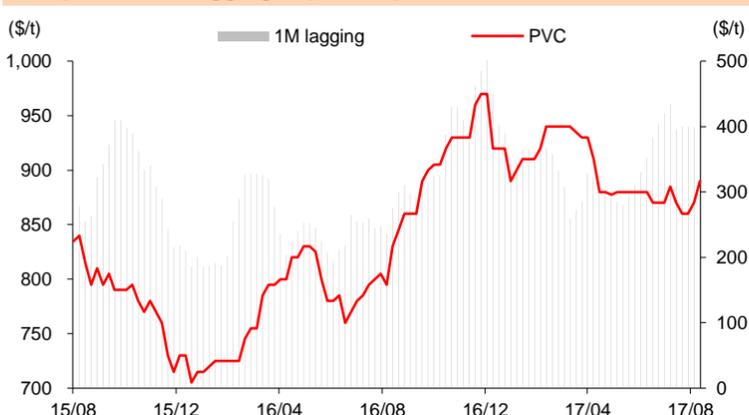
**HDPE price & 1M lagging naphtha spread**



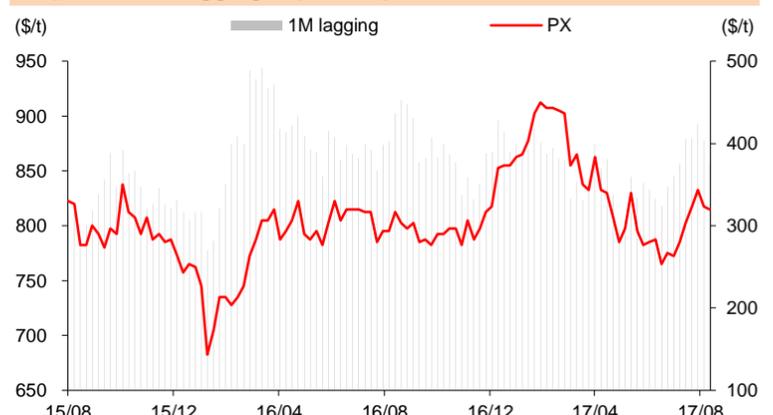
**MEG price & 1M lagging naphtha spread**



**PVC price & 1M lagging naphtha spread**



**PX price & 1M lagging naphtha spread**



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

## News Comment

### Headline (출처: EBN)

**제목** 美 미시건에 동지 튼 LG전자-LG화학, 전기차 시너지 기대  
**결론** GM·포드·크라이슬러 등 주요 미국 고객사 확보에 경쟁력 향상 전망  
**세부**

- 1) LG전자가 美 미시건주에 285억원 투자해 전기차 부품 공장 건립
- 2) 공장 연면적은 21.5만㎡ 규모이며, 2018년 1분기 내에 완공할 예정
- 3) 우선 전기차용 배터리팩을 생산하고 이후 주요 부품으로 품목 확대 계획
- 4) LG전자는 LG화학으로부터 셀을 공급받아 배터리팩을 만들게 됨
- 5) GM·포드·크라이슬러 등 주요 미국 고객사 확보에 경쟁력 향상 전망

### Issue 1 (출처: 연합뉴스)

**제목** 글로벌 해양플랜트 발주 기지개...일감절벽 조선업계 '숨통'  
**결론** 저유가 국면에서 사업성이 맞는 극히 일부의 프로젝트만 발주되는 것  
**세부**

- 1) BP는 아프리카 토르투 가스전 개발 위한 해양플랜트 입찰을 시작
- 2) BP는 이 프로젝트를 위해 FPSO 1기와 FLNG 2기를 발주할 예정
- 3) 전체 사업 규모는 6.56조원이며, 이 중 FPSO와 FLNG는 1.13조원 규모
- 4) 푸꾸옥 페트롤리움이 진행하는 가스전 프로젝트 '블록 B' 입찰도 시작
- 5) 저유가 국면에서 사업성이 맞는 극히 일부의 프로젝트만 발주되는 것

### Issue 3

**제목**  
**결론**  
**세부**

- 1)
- 2)
- 3)
- 4)
- 5)

### Issue 5

**제목**  
**결론**  
**세부**

- 1)
- 2)
- 3)
- 4)
- 5)

### WTI Comment (출처: 연합뉴스)

**제목** 재고감소에 소폭 상승...WTI 1.2%↑  
**상승** 미국의 지난주 원유 재고가 330만 배럴 줄었다는 소식  
**요인**

**하락**  
**요인**

### Issue 2

**제목**  
**결론**  
**세부**

- 1)
- 2)
- 3)
- 4)
- 5)

### Issue 4

**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	2015avg.	2016avg.	2017acc.	
F/X	USD/EUR	0.847	0.850	0.850	0.857	0.894	0.945	0.885	0.951	0.901	0.904	0.909	
	Change, %		(0.4)	(0.3)	(1.2)	(5.3)	(10.4)	(4.2)	(10.9)	(6.0)	(6.3)	(6.8)	
	USD/JPY	109.0	109.6	110.2	111.1	111.8	112.6	100.2	117.0	121.1	108.8	112.1	
	Change, %		(0.5)	(1.0)	(1.9)	(2.5)	(3.2)	8.8	(6.8)	(9.9)	0.3	(2.7)	
	USD/KRW	1,131.8	1,133.8	1,141.7	1,118.4	1,124.1	1,137.5	1,115.5	1,205.8	1,131.2	1,160.5	1,140.2	
	Change, %		(0.2)	(0.9)	1.2	0.7	(0.5)	1.5	(6.1)	0.1	(2.5)	(0.7)	
	Agriculture	Corn	342.0	346.0	352.5	379.8	369.5	365.5	328.5	352.0	376.8	358.5	366.6
		Change, %		(1.2)	(3.0)	(9.9)	(7.4)	(6.4)	4.1	(2.8)	(9.2)	(4.6)	(6.7)
Soybean		935.0	933.8	921.8	1,009.0	948.3	1,011.5	1,034.3	996.5	945.4	987.5	978.3	
Change, %			0.1	1.4	(7.3)	(1.4)	(7.6)	(9.6)	(6.2)	(1.1)	(5.3)	(4.4)	
	Wheat	403.3	402.3	419.3	499.3	429.5	438.0	407.8	408.0	508.1	436.4	441.8	
	Change, %		0.2	(3.8)	(19.2)	(6.1)	(7.9)	(1.1)	(1.2)	(20.6)	(7.6)	(8.7)	
	Rice	12.3	12.2	12.2	12.0	10.9	9.5	10.3	9.4	11.1	10.3	10.5	
	Change, %		0.8	0.9	2.6	12.7	29.9	19.4	31.5	11.3	18.9	16.9	
	Oats	238.8	239.0	260.0	295.8	241.3	253.3	171.5	228.5	250.2	196.3	253.7	
	Change, %		(0.1)	(8.2)	(19.3)	(1.0)	(5.7)	39.2	4.5	(4.6)	21.6	(5.9)	
	MYR/mt	Palm Oil	2,723.0	2,729.0	2,622.0	2,612.0	2,877.0	2,945.0	2,833.0	3,218.0	2,190.3	2,653.8	2,862.2
		Change, %		(0.2)	3.9	4.2	(5.4)	(7.5)	(3.9)	(15.4)	24.3	2.6	(4.9)
Cocoa		1,908.0	1,923.0	1,844.0	1,968.0	2,021.0	2,067.0	3,039.0	2,126.0	3,091.6	2,854.0	1,995.4	
Change, %			(0.8)	3.5	(3.0)	(5.6)	(7.7)	(37.2)	(10.3)	(38.3)	(33.1)	(4.4)	
	Cotton	69.6	68.9	67.6	69.1	77.2	75.0	68.1	70.7	63.3	65.6	74.7	
	Change, %		1.0	3.0	0.7	(9.9)	(7.2)	2.2	(1.5)	10.0	6.1	(6.8)	
	Sugar	13.7	13.5	12.9	14.4	15.9	20.2	20.7	19.5	13.1	18.2	16.6	
	Change, %		1.2	5.6	(5.1)	(13.9)	(32.2)	(34.1)	(29.9)	4.0	(24.7)	(17.6)	
	Coffee	126.3	125.9	131.0	136.6	130.3	147.9	145.3	137.1	132.6	136.1	136.4	
	Change, %		0.3	(3.6)	(7.5)	(3.1)	(14.6)	(13.1)	(7.9)	(4.8)	(7.2)	(7.5)	
	Energy	WTI	48.4	47.6	46.8	45.8	51.5	54.5	48.1	53.7	48.8	43.4	49.5
		Change, %		1.6	3.5	5.8	(5.9)	(11.1)	0.6	(9.9)	(0.9)	11.6	(2.2)
Brent		52.6	51.9	50.3	48.1	54.2	56.6	50.0	56.8	53.7	45.1	52.2	
Change, %			1.3	4.6	9.4	(2.9)	(7.1)	5.2	(7.5)	(2.1)	16.6	0.6	
	Natural Gas	2.9	2.9	2.9	3.0	3.2	2.6	2.8	3.7	2.6	2.6	3.1	
	Change, %		(0.4)	1.3	(1.4)	(9.0)	11.9	6.0	(21.4)	11.4	14.7	(4.6)	
	Ethanol	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	
	Change, %		(1.4)	(0.7)	0.1	3.8	0.9	3.6	(5.4)	0.7	0.4	(1.1)	
	RBOB Gasoline	161.9	159.1	156.4	156.3	166.1	152.9	149.9	166.5	163.6	140.0	158.5	
	Change, %		1.8	3.5	3.6	(2.6)	5.9	8.0	(2.8)	(1.0)	15.7	2.2	
	Coal	98.4	98.4	97.5	86.5	74.4	79.8	67.1	88.4	59.0	65.5	82.9	
	Change, %		(0.1)	0.9	13.8	32.3	23.2	46.6	11.3	66.8	50.2	18.6	
Metal	Gold	1,291.0	1,285.1	1,283.3	1,255.1	1,251.2	1,249.8	1,337.6	1,152.3	1,160.6	1,248.5	1,242.7	
	Change, %		0.5	0.6	2.9	3.2	3.3	(3.5)	12.0	11.2	3.4	3.9	
	Silver	17.1	17.0	17.1	16.5	17.1	18.2	18.8	15.9	15.7	17.1	17.1	
	Change, %		0.3	(0.1)	3.5	0.2	(6.0)	(9.1)	7.4	8.7	(0.1)	(0.3)	
	Copper	6,565.0	6,580.0	6,532.0	6,004.0	5,714.0	5,859.0	4,710.0	5,535.5	5,503.1	4,872.0	5,871.7	
	Change, %		(0.2)	0.5	9.3	14.9	12.0	39.4	18.6	19.3	34.8	11.8	
	Nickel	750.5	731.0	686.1	613.2	604.8	700.2	684.1	682.0	759.5	646.4	644.5	
	Change, %		2.7	9.4	22.4	24.1	7.2	9.7	10.0	(1.2)	16.1	16.4	
	Zinc	3,096.5	3,119.0	3,119.0	2,753.5	2,658.0	2,790.0	2,302.0	2,576.0	1,941.9	2,097.5	2,734.3	
	Change, %		(0.7)	(0.7)	12.5	16.5	11.0	34.5	20.2	59.5	47.6	13.2	
	Lead	2,360.5	2,400.3	2,505.5	2,223.8	2,087.3	2,234.8	1,853.8	2,003.5	1,791.2	1,868.3	2,239.6	
	Change, %		(1.7)	(5.8)	6.1	13.1	5.6	27.3	17.8	31.8	26.3	5.4	
	Aluminum	16,135.0	16,270.0	15,955.0	14,335.0	13,895.0	13,820.0	12,480.0	12,765.0	12,184.0	12,373.5	13,977.4	
	Change, %		(0.8)	1.1	12.6	16.1	16.8	29.3	26.4	32.4	30.4	15.4	
	Cobalt	60,000.0	60,000.0	56,788.0	58,010.0	54,500.0	47,750.0	26,000.0	32,734.0	28,444.4	25,480.1	51,691.0	
	Change, %		0.0	5.7	3.4	10.1	25.7	130.8	83.3	110.9	135.5	16.1	
	HR Coil	621.0	621.0	621.0	617.0	613.0	620.0	596.0	633.0	461.5	519.3	620.6	
	Change, %		0.0	0.0	0.6	1.3	0.2	4.2	(1.9)	34.6	19.6	0.1	
	Scrap	372.0	372.0	369.0	355.0	350.0	340.0	265.0	302.0	252.9	275.7	342.6	
	Change, %		0.0	0.8	4.8	6.3	9.4	40.4	23.2	47.1	34.9	8.6	

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

## Refining Price Data

Daily Price		08/23	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	<b>WTI</b>	48.4	47.6	46.8	48.8	51.4	53.6	46.8	53.7	48.8	43.4	49.4
	<i>Change, %</i>		1.6	3.5	(0.7)	(5.7)	(9.7)	3.5	(9.9)	(0.8)	11.6	(2.1)
	<b>Dubai</b>	49.9	50.0	49.5	49.1	53.1	54.7	46.0	53.8	50.8	41.3	50.8
	<i>Change, %</i>		(0.1)	0.8	1.8	(6.0)	(8.7)	8.6	(7.2)	(1.7)	20.9	(1.6)
Crude Oil Product	<b>Gasoline(휘발유)</b>	66.4	67.6	67.2	63.3	67.0	69.2	57.2	69.8	69.5	56.3	65.4
	<i>Change, %</i>		(1.7)	(1.2)	4.8	(0.9)	(4.0)	16.2	(5.0)	(4.5)	18.0	1.4
	<b>Kerosene(등유)</b>	61.9	61.9	62.4	61.7	64.0	66.6	56.2	66.4	64.7	52.9	62.1
	<i>Change, %</i>		0.0	(0.7)	0.4	(3.3)	(7.1)	10.1	(6.8)	(4.4)	17.1	(0.3)
	<b>Diesel(경유)</b>	62.3	62.3	62.7	62.9	64.0	67.2	56.4	65.5	64.8	52.1	62.7
	<i>Change, %</i>		0.1	(0.6)	(0.9)	(2.6)	(7.2)	10.5	(4.8)	(3.8)	19.6	(0.6)
	<b>Bunker-C</b>	46.8	47.0	46.8	47.2	49.2	49.9	39.4	52.1	45.3	35.5	47.5
	<i>Change, %</i>		(0.5)	(0.0)	(0.8)	(4.9)	(6.2)	18.7	(10.2)	3.3	31.6	(1.6)
	<b>Naphtha</b>	49.9	50.1	49.3	47.2	50.3	55.7	42.4	53.5	52.6	42.6	50.4
	<i>Change, %</i>		(0.5)	1.1	5.6	(0.9)	(10.5)	17.6	(6.7)	(5.2)	17.0	(1.0)
Dubai Spread	<b>Gasoline(휘발유)</b>	16.5	17.6	17.7	14.3	13.9	14.5	11.2	16.0	18.7	14.9	14.7
	<i>Change</i>		(1.1)	(1.2)	2.2	2.6	2.0	5.3	0.4	(2.3)	1.5	1.8
	<b>Kerosene(등유)</b>	12.0	11.9	12.8	12.6	10.9	11.9	10.3	12.6	14.0	11.6	11.3
	<i>Change</i>		0.1	(0.8)	(0.6)	1.1	0.0	1.7	(0.6)	(2.0)	0.4	0.7
	<b>Diesel(경유)</b>	12.4	12.3	13.2	13.9	10.9	12.5	10.4	11.7	14.0	10.8	12.0
	<i>Change</i>		0.1	(0.8)	(1.4)	1.5	(0.1)	2.0	0.7	(1.6)	1.6	0.4
Dubai Spread	<b>Bunker-C</b>	(3.2)	(3.0)	(2.8)	(1.9)	(3.9)	(4.8)	(6.6)	(1.8)	(5.5)	(5.8)	(3.2)
	<i>Change</i>		(0.2)	(0.4)	(1.3)	0.8	1.7	3.4	(1.4)	2.4	2.6	0.1
	<b>Naphtha</b>	(0.1)	0.1	(0.2)	(1.9)	(2.8)	1.0	(3.6)	(0.4)	1.8	1.3	(0.4)
	<i>Change</i>		(0.2)	0.1	1.8	2.7	(1.1)	3.5	0.3	(1.9)	(1.4)	0.3
Refining Margin	<b>Simple(단순)</b>	3.5	3.7	4.1	4.1	2.1	2.4	0.5	3.8	3.3	1.9	3.0
	<i>Change</i>		(0.2)	(0.6)	(0.7)	1.3	1.0	2.9	(0.4)	0.2	1.5	0.5
	<b>Complex(복합)</b>	8.4	8.7	9.1	8.5	6.7	7.6	5.2	8.3	9.3	7.0	7.7
	<i>Change</i>		(0.3)	(0.8)	(0.2)	1.7	0.8	3.2	0.1	(0.9)	1.4	0.7
Refining Margin	<b>Complex(lagging)</b>	10.1	10.3	11.7	13.4	8.4	9.3	9.8	18.0	7.3	8.5	7.4
	<i>Change</i>		(0.2)	(1.5)	(3.3)	1.7	0.8	0.4	(7.8)	2.9	1.7	2.7

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			08/23	08/22	08/21	08/18	08/17	08/16	08/15	08/14	08/11	08/10	
Spot Price	<b>Naphtha</b>	CFR Japan	463.4	466.0	470.3	464.0	454.3	460.5	460.8	468.8	459.8	472.5	
	<b>Ethylene</b>	CFR SE Asia	1,125.0	1,125.0	1,110.0	1,110.0	1,100.0	1,100.0	1,100.0	1,100.0	1,075.0	1,020.0	
	<b>Propylene</b>	FOB Korea	865.0	860.0	858.0	859.0	861.0	858.0	858.0	858.0	858.0	858.0	
	<b>Butadiene</b>	FOB Korea	1,230.0	1,200.0	1,200.0	1,200.0	1,200.0	1,090.0	1,070.0	1,051.0	1,051.0	910.0	
	<b>HDPE</b>	CFR FE Asia	1,140.0	1,140.0	1,130.0	1,125.0	1,120.0	1,110.0	1,110.0	1,110.0	1,120.0	1,120.0	
	<b>LDPE</b>	CFR FE Asia	1,180.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,160.0	1,160.0	1,160.0	1,170.0	
	<b>LLDPE</b>	CFR FE Asia	1,130.0	1,130.0	1,125.0	1,120.0	1,110.0	1,100.0	1,100.0	1,100.0	1,110.0	1,120.0	
	<b>MEG</b>	CFR China	868.0	875.0	875.0	865.0	857.0	845.0	840.0	825.0	825.0	850.0	868.0
	<b>PP</b>	CFR FE Asia	1,080.0	1,070.0	1,055.0	1,040.0	1,040.0	1,025.0	1,020.0	1,020.0	1,020.0	1,030.0	1,030.0
	<b>PX</b>	CFR China	800.7	803.7	808.0	805.0	802.7	799.7	793.3	793.3	804.3	804.7	821.5
	<b>PTA</b>	CFR China	633.0	630.0	630.0	630.0	631.0	629.0	629.0	635.0	635.0	634.0	637.0
	<b>Benzene</b>	FOB Korea	768.0	770.0	766.0	761.0	757.0	753.0	753.0	754.0	755.0	757.0	760.0
	<b>Toluene</b>	FOB Korea	622.5	622.5	628.5	624.5	620.5	622.5	619.0	619.0	624.0	625.0	630.0
	<b>Xylene</b>	FOB Korea	648.5	651.5	651.5	650.5	650.5	647.0	649.0	649.0	651.0	651.0	672.0
	<b>SM</b>	FOB Korea	1,193.0	1,203.0	1,187.0	1,171.0	1,175.5	1,151.5	1,144.0	1,144.0	1,141.0	1,149.0	1,155.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	<b>Naphtha</b>	CFR Japan	462.0	459.0	438.5	455.0	470.5	407.5	484.5	493.0	399.5	464.4
		<i>Change, %</i>		0.7	5.4	1.5	(1.8)	13.4	(4.6)	(6.3)	15.6	(0.5)
	<b>Ethylene</b>	CFR SE Asia	1,165.0	1,125.0	915.0	995.0	1,095.0	1,075.0	990.0	1,103.7	1,040.9	1,026.3
		<i>Change, %</i>		3.6	27.3	17.1	6.4	8.4	17.7	5.6	11.9	13.5
	<b>Propylene</b>	CFR SE Asia	775.0	775.0	757.5	747.5	725.0	720.0	815.0	770.0	705.7	861.0
		<i>Change, %</i>		0.0	2.3	3.7	6.9	7.6	(4.9)	0.6	9.8	(10.0)
	<b>Butadiene</b>	CFR SE Asia	1,175.0	1,015.0	925.0	1,025.0	1,225.0	1,055.0	2,100.0	877.5	1,116.8	1,635.3
		<i>Change, %</i>		15.8	27.0	14.6	(4.1)	11.4	(44.0)	33.9	5.2	(28.1)
	<b>Benzene</b>	CFR SE Asia	775.0	772.5	737.5	780.0	802.5	680.0	822.5	690.0	646.7	839.3
		<i>Change, %</i>		0.3	5.1	(0.6)	(3.4)	14.0	(5.8)	12.3	19.8	(7.7)
	<b>Toluene</b>	CFR SE Asia	655.0	655.0	630.0	655.0	680.0	585.0	690.0	700.8	630.5	682.5
		<i>Change, %</i>		0.0	4.0	0.0	(3.7)	12.0	(5.1)	(6.5)	3.9	(4.0)
	<b>Xylene</b>	CFR SE Asia	635.0	635.0	617.5	630.0	670.0	600.0	675.0	699.3	627.7	668.7
		<i>Change, %</i>		0.0	2.8	0.8	(5.2)	5.8	(5.9)	(9.2)	1.2	(5.0)

Spread	<b>Ethylene</b>	-Naphtha	703.0	666.0	476.5	540.0	624.5	667.5	505.5	610.6	641.4	561.8
		<i>Change, %</i>		5.6	47.5	30.2	12.6	5.3	39.1	15.1	9.6	25.1
	<b>Propylene</b>	-Naphtha	313.0	316.0	319.0	292.5	254.5	312.5	330.5	277.0	306.2	396.6
		<i>Change, %</i>		(0.9)	(1.9)	7.0	23.0	0.2	(5.3)	13.0	2.2	(21.1)
	<b>Butadiene</b>	-Naphtha	713.0	556.0	486.5	570.0	754.5	647.5	1,615.5	384.5	717.3	1,170.9
		<i>Change, %</i>		28.2	46.6	25.1	(5.5)	10.1	(55.9)	85.5	(0.6)	(39.1)
	<b>Benzene</b>	-Naphtha	313.0	313.5	299.0	325.0	332.0	272.5	338.0	197.0	247.2	374.9
		<i>Change, %</i>		(0.2)	4.7	(3.7)	(5.7)	14.9	(7.4)	58.9	26.6	(16.5)
	<b>Toluene</b>	-Naphtha	193.0	196.0	191.5	200.0	209.5	177.5	205.5	207.8	231.0	218.1
		<i>Change, %</i>		(1.5)	0.8	(3.5)	(7.9)	8.7	(6.1)	(7.1)	(16.5)	(11.5)
	<b>Xylene</b>	-Naphtha	173.0	176.0	179.0	175.0	199.5	192.5	190.5	206.3	228.2	204.3
		<i>Change, %</i>		(1.7)	(3.4)	(1.1)	(13.3)	(10.1)	(9.2)	(16.1)	(24.2)	(15.3)

자료 : Cischem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price		Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Spot Price	HDPE	CFR SE Asia	1,087.5	1,087.5	1,047.5	1,127.5	1,137.5	1,110.0	1,142.5	1,230.1	1,134.6	1,119.0
	Change, %			0.0	3.8	(3.5)	(4.4)	(2.0)	(4.8)	(11.6)	(4.1)	(2.8)
	MEG	CFR SE Asia	867.5	852.5	847.5	775.0	692.5	627.5	847.5	780.8	660.8	818.7
	Change, %			1.8	2.4	11.9	25.3	38.2	2.4	11.1	31.3	6.0
	PVC	CFR SE Asia	890.0	870.0	870.0	880.0	880.0	830.0	920.0	820.8	823.4	897.9
	Change, %			2.3	2.3	1.1	1.1	7.2	(3.3)	8.4	8.1	(0.9)
	PP	CFR SE Asia	1,107.5	1,097.5	1,057.5	1,037.5	1,067.5	975.0	1,032.5	1,109.8	978.4	1,069.4
	Change, %			0.9	4.7	6.7	3.7	13.6	7.3	(0.2)	13.2	3.6
	2-EH	CFR Korea	960.0	960.0	950.0	950.0	965.0	760.0	865.0	930.1	772.4	949.2
	Change, %			0.0	1.1	1.1	(0.5)	26.3	11.0	3.2	24.3	1.1
	ABS	CFR SE Asia	1,870.0	1,850.0	1,810.0	1,630.0	1,665.0	1,380.0	1,635.0	1,431.1	1,347.1	1,763.8
	Change, %			1.1	3.3	14.7	12.3	35.5	14.4	30.7	38.8	6.0
	SBR	CFR SE Asia	1,540.0	1,510.0	1,500.0	1,750.0	2,050.0	1,410.0	2,000.0	1,332.1	1,483.0	2,132.8
	Change, %			2.0	2.7	(12.0)	(24.9)	9.2	(23.0)	15.6	3.8	(27.8)
	SM	CFR SE Asia	1,192.5	1,170.0	1,170.0	1,112.5	1,127.5	1,055.0	1,205.0	1,100.7	1,064.6	1,228.3
	Change, %			1.9	1.9	7.2	5.8	13.0	(1.0)	8.3	12.0	(2.9)
	Caustic	FOB NEA	476.0	472.5	462.5	447.5	447.5	305.0	422.5	296.8	316.6	442.2
	Change, %			0.7	2.9	6.4	6.4	56.1	12.7	60.4	50.4	7.6
	PX	CFR SE Asia	815.0	817.5	802.5	830.0	830.0	812.5	855.0	842.9	790.4	834.3
	Change, %			(0.3)	1.6	(1.8)	(1.8)	0.3	(4.7)	(3.3)	3.1	(2.3)
PO	CFR China	2,022.5	1,587.5	1,530.0	1,350.0	1,330.0	1,500.0	1,562.5	1,683.4	1,396.8	1,506.4	
Change, %			27.4	32.2	49.8	52.1	34.8	29.4	20.1	44.8	34.3	
Caprolactam	CFR SE Asia	1,800.0	1,800.0	1,700.0	1,700.0	1,970.0	1,360.0	1,850.0	1,581.5	1,344.9	1,914.9	
Change, %			0.0	5.9	5.9	(8.6)	32.4	(2.7)	13.8	33.8	(6.0)	
PTA	CFR SE Asia	652.5	657.5	672.5	647.5	647.5	617.5	642.5	648.0	613.7	657.4	
Change, %			(0.8)	(3.0)	0.8	0.8	5.7	1.6	0.7	6.3	(0.7)	
Spread	HDPE		625.5	628.5	609.0	672.5	667.0	702.5	658.0	737.1	735.1	654.6
	Change, %			(0.5)	2.7	(7.0)	(6.2)	(11.0)	(4.9)	(15.1)	(14.9)	(4.4)
	MEG		405.5	393.5	409.0	320.0	222.0	220.0	363.0	287.8	261.3	354.3
	Change, %			3.0	(0.9)	26.7	82.7	84.3	11.7	40.9	55.2	14.5
	PVC		428.0	411.0	431.5	425.0	409.5	422.5	435.5	327.8	423.9	433.5
	Change, %			4.1	(0.8)	0.7	4.5	1.3	(1.7)	30.6	1.0	(1.3)
	PP		645.5	638.5	619.0	582.5	597.0	567.5	548.0	616.8	578.9	605.0
	Change, %			1.1	4.3	10.8	8.1	13.7	17.8	4.7	11.5	6.7
	2-EH		498.0	501.0	511.5	495.0	494.5	352.5	380.5	437.0	372.9	484.8
	Change, %			(0.6)	(2.6)	0.6	0.7	41.3	30.9	13.9	33.6	2.7
	ABS		1,408.0	1,391.0	1,371.5	1,175.0	1,194.5	972.5	1,150.5	938.1	947.6	1,299.4
	Change, %			1.2	2.7	19.8	17.9	44.8	22.4	50.1	48.6	8.4
	SBR	BD spread	365.0	495.0	575.0	725.0	825.0	355.0	(100.0)	454.7	366.2	497.5
	Change, %			(26.3)	(36.5)	(49.7)	(55.8)	2.8	(465.0)	(19.7)	(0.3)	(26.6)
	SM		730.5	711.0	731.5	657.5	657.0	647.5	720.5	607.7	665.1	763.9
	Change, %			2.7	(0.1)	11.1	11.2	12.8	1.4	20.2	9.8	(4.4)
	Caustic											
	Change, %											
	PX		353.0	358.5	364.0	375.0	359.5	405.0	370.5	349.9	390.9	369.9
	Change, %			(1.5)	(3.0)	(5.9)	(1.8)	(12.8)	(4.7)	0.9	(9.7)	(4.6)
PO	propylene spread	1,247.5	812.5	772.5	602.5	605.0	780.0	747.5	913.4	691.1	645.4	
Change, %			53.5	61.5	107.1	106.2	59.9	66.9	36.6	80.5	93.3	
Caprolactam	benzene spread	1,025.0	1,027.5	962.5	920.0	1,167.5	680.0	1,027.5	891.6	698.2	1,075.6	
Change, %			(0.2)	6.5	11.4	(12.2)	50.7	(0.2)	15.0	46.8	(4.7)	
PTA	px spread	82.0	85.3	110.8	66.5	66.5	48.8	44.0	58.0	60.4	73.4	
Change, %			(3.8)	(26.0)	23.3	23.3	68.2	86.4	41.4	35.7	11.7	

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

## Global peers

	Currency	08/23	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA		
											17E	18E	17E	18E	17E	18E	
<b>Petrochemical</b>																	
Dow Chemical	USD	64.6	(0.3)	1.0	(2.4)	6.3	1.9	20.1	12.9	79,010	15.9	14.5	2.9	2.7	9.0	8.3	
Du Pont	USD	82.8	(0.3)	0.9	(2.1)	7.0	4.0	17.5	12.8	71,820	21.1	19.9	6.5	5.5	13.6	12.7	
Eastman	USD	84.4	0.3	(1.0)	(1.5)	6.0	5.3	25.8	12.2	12,225	11.2	10.4	2.4	2.3	8.6	8.2	
BASF	EUR	82.3	0.1	1.0	1.6	(3.7)	(8.1)	13.8	(6.8)	89,239	14.2	14.0	2.2	2.1	7.8	7.6	
Akzo Nobel	EUR	78.4	0.8	1.5	3.1	2.5	24.1	31.4	31.9	23,511	18.3	17.6	3.1	3.1	10.1	9.7	
Arkema	EUR	95.2	0.1	(0.3)	(2.4)	(1.3)	1.8	19.7	2.4	8,511	13.9	12.9	1.7	1.6	6.3	6.0	
Lanxess	EUR	64.3	0.6	1.0	(2.3)	0.2	(1.7)	33.0	3.1	6,945	16.8	14.5	2.2	2.1	7.4	7.4	
Sumitomo Chemical	JPY	658	0.2	1.1	(3.5)	8.9	1.5	53.0	18.3	9,978	10.5	9.8	1.2	1.1	7.5	7.2	
Mitsubishi Chemical	JPY	968	0.6	1.6	(2.0)	15.9	8.8	62.0	27.7	13,355	9.3	9.2	1.2	1.1	6.3	6.2	
Shin-Etsu Chemical	JPY	9,531	0.1	(2.4)	(7.8)	(2.9)	(3.6)	30.4	5.1	37,725	19.2	17.2	1.8	1.7	8.1	7.2	
Asahi Kasei	JPY	1,246	(0.4)	(4.2)	(4.3)	17.3	13.3	47.7	22.2	16,002	14.8	14.0	1.4	1.3	7.1	6.8	
JSR	JPY	2,059	0.6	1.5	6.5	8.3	4.3	42.7	11.7	4,265	15.9	14.9	1.2	1.1	8.1	7.6	
Nitto Denko	JPY	9,588	(0.4)	(2.8)	(3.2)	7.3	(0.0)	40.3	6.9	15,261	19.3	17.8	2.2	2.1	8.6	8.0	
SABIC	SAR	98.4	(0.1)	0.7	(1.5)	0.3	1.1	17.2	7.6	78,724	14.8	14.2	1.8	1.7	7.5	7.3	
Yansab	SAR	56.0	(0.4)	3.8	1.8	0.9	(1.8)	26.0	2.8	8,400	14.3	13.5	2.3	2.3	8.9	8.4	
Formosa Plastics	TWD	93.0	0.0	1.6	1.6	5.7	0.5	17.3	4.3	19,569	14.4	14.7	1.8	1.8	19.1	19.5	
Formosa Fiber	TWD	93.5	0.8	2.2	3.0	2.6	(4.1)	11.2	(2.9)	18,115	12.9	13.4	1.7	1.6	10.3	10.7	
Nan Ya Plastics	TWD	75.8	0.3	3.1	1.3	7.1	1.5	24.1	6.5	19,871	15.9	16.3	1.7	1.7	17.0	16.1	
Sinopec Shanghai	CNY	6.74	(0.1)	2.3	(0.9)	2.9	(0.7)	7.8	4.7	9,499	13.8	13.0	2.6	2.3	7.2	7.2	
Sinopec Yizheng(Fiber)	CNY	3.20	0.0	0.0	0.6	(13.0)	(19.0)	(18.4)	(22.0)	6,153	#N/A	N/A	47.1	6.9	7.2	37.8	17.5
Reliance	INR	1,582	1.4	1.0	(0.2)	21.2	33.8	56.6	46.2	80,329	17.5	14.4	1.7	1.5	11.6	9.4	
Industries Qatar	QAR	93.9	0.8	3.2	(6.5)	(10.4)	(22.4)	(17.6)	(20.1)	15,600	15.1	13.2	1.6	1.6	53.9	49.2	
PTT Chemical	THB	74.3	(0.7)	2.4	6.1	2.1	0.7	21.7	17.9	9,926	10.2	10.3	1.3	1.2	5.4	5.2	
Petronas	MYR	7.2	(0.6)	0.0	2.7	(2.6)	(2.8)	7.5	2.6	13,386	15.8	15.7	2.0	1.9	8.6	8.5	
LG화학	KRW	366,000	0.8	5.9	11.2	26.4	28.9	36.1	40.2	22,869	14.3	13.8	1.8	1.6	6.2	5.8	
롯데케미칼	KRW	391,500	(1.5)	2.9	8.0	6.0	3.2	41.3	6.1	11,877	6.1	6.0	1.2	1.0	4.0	3.6	
한화케미칼	KRW	35,150	(0.7)	0.1	5.1	20.2	35.2	33.9	42.3	5,128	6.0	6.3	1.0	0.8	7.5	7.1	
금호석유	KRW	77,600	(0.1)	5.6	3.9	(0.8)	(1.1)	7.0	(5.4)	2,093	15.1	13.6	1.4	1.3	10.0	8.8	
SKC	KRW	37,750	1.1	0.9	4.6	23.4	14.6	32.5	14.4	1,254	10.7	9.3	0.9	0.9	9.1	7.7	
국도화학	KRW	53,400	(1.8)	(2.6)	(2.7)	12.1	3.1	(6.3)	(2.7)	275	8.7	9.4	0.7	0.7	5.1	5.1	
효성	KRW	7,160	3.6	12.9	17.4	1.0	(14.3)	22.6	5.3	4,865	9.2	7.9	1.4	1.2	7.4	6.6	
<b>Average</b>			<b>0.1</b>	<b>1.5</b>	<b>1.1</b>	<b>5.7</b>	<b>3.5</b>	<b>24.4</b>	<b>9.9</b>								
<b>Refinery</b>																	
Valero	USD	65.7	0.2	(0.4)	(3.1)	2.5	(2.0)	19.0	(3.8)	29,022	16.0	12.0	1.5	1.5	6.5	5.6	
Conoco Phillips	USD	43.7	1.2	0.0	2.4	(6.6)	(7.6)	1.1	(12.9)	53,169	237.4	33.8	1.8	1.8	8.8	6.6	
Formosa Petrochemical	TWD	102.0	(1.0)	(1.0)	(2.9)	(2.4)	(6.4)	7.5	(8.9)	32,117	15.4	18.0	3.1	3.1	9.5	10.7	
Andeavor	USD	94.0	0.6	0.6	(3.1)	13.2	5.7	25.0	7.4	14,741	18.4	12.8	1.4	1.3	8.9	6.8	
Marathon Petroleum	USD	50.2	1.0	(1.7)	(9.3)	(5.5)	(0.4)	19.7	(0.4)	25,399	18.7	14.8	2.0	2.0	8.6	7.4	
Devon Energy	USD	31.0	1.9	1.0	(3.1)	(18.1)	(29.6)	(31.5)	(32.2)	16,283	18.3	14.9	2.3	2.0	8.1	7.3	
Hollyfrontier	USD	28.1	1.2	1.0	2.9	6.7	(4.4)	5.5	(14.2)	4,982	22.4	13.3	1.0	1.1	8.3	6.2	
Phillips 66	USD	82.4	0.2	(0.8)	(0.6)	5.4	4.8	5.8	(4.7)	42,128	20.0	14.9	1.9	1.9	9.9	8.3	
Murphy Oil	USD	23.3	0.9	(5.4)	(8.0)	(11.9)	(17.9)	(21.8)	(25.1)	4,024	#N/A	N/A	180.8	0.9	0.9	4.4	4.3
JX Holdings	JPY	540.3	1.3	2.6	9.6	10.2	1.3	40.9	9.2	16,960	8.5	8.0	0.8	0.8	8.4	7.9	
Idemitsu	JPY	2,682.0	1.7	0.3	(2.8)	(18.4)	(24.7)	43.1	(13.6)	5,110	5.7	5.7	0.7	0.6	7.9	7.6	
Nesteoil	EUR	34.8	(0.3)	(0.9)	(7.3)	(7.3)	0.9	(9.7)	(4.7)	0	13.4	13.3	2.1	2.0	7.7	8.0	
Ashland	USD	61.6	0.2	0.1	(7.6)	(4.7)	2.7	8.8	15.2	3,844	14.7	18.7	1.0	1.0	8.5	9.3	
Fuchs Petrolub	EUR	47.5	(0.7)	(1.2)	(3.0)	(2.8)	8.0	17.6	19.1	7,340	24.4	23.1	4.9	4.4	14.2	13.4	
SK이노베이션	KRW	171,000	(2.0)	0.3	(0.3)	(0.3)	9.6	17.1	16.7	13,995	7.1	7.1	0.9	0.8	4.3	3.9	
S-Oil	KRW	116,000	(0.4)	3.1	7.4	12.1	37.3	60.9	37.0	11,560	12.5	9.7	2.0	1.9	9.5	7.1	
GS	KRW	68,600	(1.3)	1.8	(6.2)	(0.7)	27.3	39.6	26.8	5,642	6.4	6.1	0.8	0.8	7.3	6.9	
<b>Average</b>			<b>0.3</b>	<b>(0.0)</b>	<b>(2.1)</b>	<b>(1.7)</b>	<b>0.3</b>	<b>14.6</b>	<b>0.6</b>								

\* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

\* 국내업체의 multiple은 Dataguidepro 기준임

## Global peers

	Currency	08/23	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											17E	18E	17E	18E	17E	18E
<b>E&amp;P/Shale</b>																
Exxon Mobil	USD	77	(0.2)	(1.1)	(4.4)	(7.2)	(6.3)	(12.7)	(15.1)	324,605	22.4	19.4	1.8	1.8	9.5	8.6
BP	GBP	445	0.5	(0.2)	(0.4)	(6.3)	(1.3)	3.7	(12.8)	112,294	20.2	15.3	1.2	1.2	5.9	5.3
Shell	EUR	2,140	0.8	0.6	2.9	1.3	2.4	13.0	(4.6)	227,215	15.9	13.9	1.2	1.2	6.2	5.7
Chevron	USD	107	0.2	(0.2)	3.3	0.3	(4.0)	4.8	(9.4)	202,026	26.3	21.4	1.4	1.4	7.8	7.0
Total	EUR	44	0.6	1.5	2.2	(9.4)	(9.6)	2.1	(10.4)	128,934	13.0	11.9	1.2	1.1	6.1	5.4
Sinopec	CNY	6	(0.7)	0.5	(3.9)	(0.8)	1.2	20.2	10.0	104,044	14.0	12.8	1.0	0.9	4.7	4.6
Petrochina	CNY	8	(0.2)	1.1	(0.5)	2.6	(3.6)	7.7	0.5	207,409	55.9	31.1	1.2	1.2	6.8	6.5
CNOOC	CNY	11	0.8	3.2	1.5	(6.0)	(15.3)	(9.5)	(12.2)	51,798	16.5	12.9	0.9	0.9	4.1	3.8
Gazprom	RUB	116	(0.2)	(0.9)	(2.7)	(6.1)	(15.3)	(15.7)	(25.1)	46,368	4.2	3.7	0.2	0.2	3.5	3.1
Rosneft	RUB	303	0.7	0.4	(4.5)	(2.9)	(12.6)	(13.6)	(24.7)	54,375	9.4	6.6	0.8	0.7	4.9	4.1
Anadarko	USD	43	1.7	1.1	(2.5)	(19.8)	(34.9)	(23.3)	(38.4)	24,084	#N/A	#N/A	1.6	1.7	6.8	6.1
Petrobras	BRL	14	(0.2)	4.8	8.4	2.0	(11.6)	8.6	(7.5)	58,257	10.1	8.3	0.5	0.6	5.3	4.8
Lukoil	USD	2,894	(0.1)	1.7	1.8	2.4	(8.9)	(4.0)	(16.1)	41,337	5.8	5.2	0.6	0.6	N/A	N/A
Kinder	USD	19	1.2	1.6	(8.1)	(2.6)	(11.7)	(13.9)	(8.2)	47,497	29.3	26.9	1.2	1.2	11.4	11.0
Statoil	NOK	146	(0.7)	(0.3)	4.7	(4.7)	(1.9)	10.5	(8.0)	60,790	16.3	17.3	1.6	1.6	3.3	3.2
BHP	AUD	26	0.2	1.4	6.3	7.0	0.8	23.5	3.9	104,097	17.7	18.2	1.8	1.8	6.6	6.6
PTT E&P	THB	86	0.0	0.9	1.2	(9.3)	(7.6)	5.9	(11.2)	10,172	12.9	11.8	0.8	0.8	3.1	2.8
Petronas gas	MYR	19	1.1	0.6	1.0	(0.9)	(7.7)	(14.4)	(10.8)	8,786	21.2	19.9	3.0	2.9	12.1	11.2
Chesapeake	USD	4	1.0	(2.8)	(17.1)	(31.4)	(32.3)	(39.8)	(44.6)	3,533	5.5	4.8	#N/A	#N/A	16.9	7.2
Noble Energy	USD	24	1.0	(0.2)	(16.4)	(23.0)	(36.6)	(33.6)	(37.7)	11,541	#N/A	#N/A	1.2	1.2	8.0	6.6
<b>Average</b>		<b>0</b>	<b>0.4</b>	<b>0.7</b>	<b>(1.4)</b>	<b>(5.7)</b>	<b>(10.8)</b>	<b>(4.0)</b>	<b>(14.1)</b>							
<b>PV</b>																
WACKER	EUR	106.3	1.0	4.3	6.1	9.1	0.9	26.6	7.5	6,542	29.1	21.7	1.8	1.7	6.7	6.3
GCL-Poly	HKD	0.9	0.0	0.0	(2.2)	4.6	(15.0)	(22.2)	(2.2)	2,161	7.4	7.0	0.6	0.6	5.7	5.2
SunPower	USD	9.1	1.6	(5.2)	(16.6)	13.8	0.7	(9.8)	36.9	1,262	#N/A	#N/A	28.8	1.8	1.8	40.8
Canadian Solar	USD	15.2	0.7	(10.5)	(8.5)	14.4	3.3	12.8	24.6	880	11.5	7.3	0.9	0.8	9.5	8.9
JA Solar	USD	6.3	1.8	0.8	(2.3)	(12.6)	18.8	(17.3)	33.0	301	#N/A	#N/A	16.7	1.6	1.5	4.3
Yingli	USD	2.5	(1.2)	3.3	3.3	12.0	(8.0)	(38.2)	(3.1)	46	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	46.5	(0.2)	(5.3)	2.9	27.4	25.0	24.1	44.8	4,853	22.2	42.0	0.9	0.9	8.0	9.0
한화큐셀	USD	7.5	3.4	(1.3)	(18.7)	7.3	(20.2)	(45.3)	(8.1)	624	68.2	57.7	#N/A	#N/A	7.5	7.5
OCI	KRW	93,000	(1.5)	(1.1)	6.3	5.8	0.2	0.4	18.2	1,963	15.1	20.3	0.7	0.7	7.7	7.2
웅진에너지	KRW	8,740	0.6	5.7	(0.9)	40.7	86.8	3.4	84.6	193	N/A	0.7	0.7	7.7	7.2	9.2
신성솔라에너지	KRW	2,150	(1.8)	(0.7)	(3.8)	5.9	11.1	(7.1)	(2.7)	329	N/A	0.7	7.7	7.2	9.2	7.9
<b>Average</b>			<b>0.4</b>	<b>(0.9)</b>	<b>(3.1)</b>	<b>11.7</b>	<b>9.4</b>	<b>(6.6)</b>	<b>21.2</b>							
<b>Gas Company</b>																
Towngas China	HKD	5.2	0.0	(1.0)	(6.8)	8.8	20.1	13.3	27.2	1,836	11.9	11.0	1.0	0.9	11.3	10.4
Kulun	HKD	7.5	0.0	1.8	(2.0)	7.0	10.7	28.9	30.0	7,777	12.1	11.2	1.4	1.3	6.3	6.1
Beijing Enterprise	HKD	40.6	0.0	0.4	(1.1)	9.3	(1.2)	(10.9)	10.6	6,539	7.9	7.5	0.8	0.7	13.5	13.1
ENN Energy	HKD	49.8	0.0	(2.5)	(4.1)	20.9	28.4	20.8	56.0	6,876	13.4	11.9	2.6	2.2	8.6	7.7
China Resources Gas	HKD	27.3	0.0	(4.7)	(8.2)	11.9	12.1	4.6	25.0	7,743	15.5	13.8	2.9	2.5	9.3	8.4
China Gas Holdings	HKD	18.8	0.0	(1.9)	0.6	60.6	55.8	46.3	78.3	11,909	17.2	14.6	3.7	3.1	13.7	11.9
Shenzen Gas	HKD	14.3	0.0	2.9	5.4	13.1	25.0	22.4	26.7	3,699	12.1	11.4	1.3	1.3	9.3	8.8
Shann Xi	CNY	8.5	(1.3)	0.1	(1.5)	3.9	(12.4)	(20.1)	(10.9)	1,426	18.1	16.2	1.7	1.6	#N/A	#N/A
Suntien	HKD	1.8	0.0	0.0	4.1	15.7	34.1	51.3	77.0	840	7.2	6.2	0.7	0.6	9.1	7.8
China Oil & Gas	HKD	0.5	0.0	(5.6)	(7.3)	(8.9)	(19.0)	(13.6)	(16.4)	380	8.8	7.6	0.8	0.8	5.8	5.2
<b>Average</b>			<b>(0.1)</b>	<b>(1.1)</b>	<b>(2.1)</b>	<b>14.2</b>	<b>15.4</b>	<b>14.3</b>	<b>30.4</b>							
<b>EV</b>																
LG화학	KRW	366,000	0.8	5.9	11.2	26.4	28.9	36.1	40.2	22,869	13.6	13.4	1.8	1.6	6.4	6.2
삼성SDI	KRW	189,000	1.9	5.9	4.4	20.0	50.6	54.9	73.4	11,504	19.8	12.9	1.2	1.1	22.6	14.2
Panasonic	JPY	1459.5	0.1	(2.2)	(2.5)	6.6	15.7	42.0	22.7	32,795	19.0	14.7	2.0	1.8	6.1	5.3
GS Yuasa	JPY	536.0	(0.6)	(0.2)	5.1	8.5	3.7	31.1	10.3	2,031	16.5	15.6	1.3	1.2	7.4	6.9
NEC	JPY	293.0	(0.7)	(2.0)	(1.7)	6.5	4.3	14.9	(5.5)	6,991	18.3	16.4	0.9	0.9	6.9	6.1
BYD Auto	CNY	48.3	0.2	0.0	(4.4)	(1.1)	(4.1)	(18.1)	(2.8)	18,782	25.0	17.3	2.4	2.2	13.3	10.8
Tesla Motors	USD	352.8	3.3	(2.8)	7.4	16.1	37.8	56.9	65.1	58,873	#N/A	#N/A	11.8	10.3	74.8	26.2
Kandi Technologies	USD	3.6	0.0	(2.7)	(13.9)	(16.5)	(14.5)	(43.5)	(27.6)	170	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
<b>Average</b>			<b>0.6</b>	<b>0.2</b>	<b>0.7</b>	<b>8.3</b>	<b>15.3</b>	<b>21.8</b>	<b>22.0</b>							

\* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임