

1. News Summary (3 page)

2018년 6월 22일

News	
WTI comment	중산 가능성 부각' 약세...WTI 0.3%↓
Headline	사우디 석유장관, "₩2조 규모 아람코 IPO 타이밍은 중요치 않아"
News 1.	-
News 2.	-
News 3.	-
News 4.	-

Conclusion	
올 하반기 예정이던 IPO가 연기되며 유가 상승 요인이 다소 소멸됨	
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	65.5	(1.0)	(2.0)	(9.1)	1.9	53.3
Dubai	\$/bbl	71.3	(1.9)	(4.1)	(7.8)	8.9	63.8
Gasoline	\$/bbl	79.8	(2.1)	(6.2)	(13.2)	0.0	41.7
Diesel	\$/bbl	84.4	(2.4)	(4.3)	(8.5)	4.8	53.8
Complex margin	\$/bbl	5.9	(0.4)	(0.6)	(2.2)	(2.0)	(1.8)
1M lagging	\$/bbl	0.7	(1.2)	(6.3)	(13.9)	(10.8)	2.3
Petrochemical			%	%	%	%	%
Naphtha	\$/t	620	(2.3)	(5.2)	(11.6)	6.3	53.7
Butadiene	\$/t	1,640	0.0	(2.4)	(8.9)	14.7	90.7
HDPE	\$/t	1,355	0.0	(0.4)	(1.1)	2.7	24.9
MEG	\$/t	882	0.2	(4.3)	(7.3)	(1.9)	13.8
PX	\$/t	928	(1.1)	(4.5)	(7.4)	(0.5)	21.8
SM	\$/t	1,342	0.2	(5.5)	(4.5)	9.0	22.2
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.98	0.4	0.3	0.1	7.2	3.9
Natural rubber	\$/t	1,320	0.0	(2.2)	(7.7)	(5.7)	(3.6)
Cotton	C/lbs	83.2	0.0	(10.9)	(4.9)	1.3	17.0

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	06/18	\$/t	1,260	3.7	11.0	0.8	47.4
Propylene	06/18	\$/t	1,015	0.2	(0.7)	3.6	37.6
Benzene	06/18	\$/t	833	(2.6)	(4.3)	(4.0)	6.4
Toluene	06/18	\$/t	815	0.0	(1.2)	13.2	26.4
Xylene	06/18	\$/t	828	(1.5)	(0.3)	8.5	33.5
PP	06/18	\$/t	1,293	0.8	0.4	(0.4)	22.2
PVC	06/18	\$/t	925	0.5	0.5	(4.6)	5.1
ABS	06/18	\$/t	2,060	0.0	(0.5)	2.0	20.5
SBR	06/18	\$/t	1,900	0.0	3.3	8.6	31.0
SM	06/18	\$/t	1,493	(2.1)	4.2	11.6	28.1
BPA	06/18	\$/t	1,788	(4.8)	(4.2)	(4.7)	28.1
Caustic	06/18	\$/t	539	(2.0)	(9.9)	(10.3)	23.2
2-EH	06/18	\$/t	1,120	1.8	(5.9)	(0.9)	21.1
Caprolactam	06/18	\$/t	2,150	1.4	2.9	(1.4)	34.4
Solar				%	%	%	%
Polysilicon	06/20	\$/kg	11.9	(5.9)	(21.6)	(20.4)	(14.5)
Module	06/20	\$/W	0.28	(2.1)	(5.8)	(8.3)	(16.3)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	79.7	(0.9)	(2.7)	(3.1)	6.2	(2.1)
Shell	EUR	2,524	(0.6)	(3.2)	(8.2)	13.9	22.2
Petrochina	CNY	7.27	(2.0)	(6.1)	(14.7)	(9.5)	(5.8)
Gazprom	RUB	134.4	(1.8)	(3.6)	(8.4)	(5.0)	13.9
Petrobras	BRL	15.1	(6.8)	0.0	(39.7)	(31.5)	29.7
Refinery							
Phillips66	USD	111.5	(2.7)	(3.5)	(8.2)	15.9	41.3
Valero	USD	111.2	(3.9)	(4.8)	(8.9)	16.5	72.0
JX	JPY	743.8	0.5	(0.0)	(1.6)	17.1	55.6
Neste Oil	EUR	65.5	0.0	(2.2)	(6.9)	13.2	84.4

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	83.3	(2.4)	(5.4)	(6.6)	(1.1)	(2.9)
DowDuPont	USD	65.3	(0.9)	(4.5)	(4.9)	(3.2)	2.5
SABIC	SAR	126.0	0.2	(0.5)	7.7	14.3	21.1
Formosa Pla.	TWD	108.5	0.9	1.9	(3.6)	1.9	19.6
Shin-Etsu	JPY	10,035	1.1	(6.9)	(13.0)	(8.1)	(0.3)
Renewable							
Wacker	EUR	114.2	(0.8)	(2.1)	(26.0)	(15.6)	19.3
First Solar	USD	52.31	1.2	(2.6)	(26.2)	(29.2)	40.5
GCL-Poly	HKD	0.73	0.0	(7.6)	(25.5)	(30.5)	0.0
Tesla Motors	USD	347.5	(4.1)	(2.9)	22.2	9.8	(7.7)

4. Coverage Summary

	06/21	1D	1W	1M	3M	6M	12M
KOSPI	2,338	(1.1)	(3.5)	(5.2)	(3.3)	(5.4)	(1.3)
KOSPI확화	5,830	(0.9)	(3.2)	(2.4)	(1.6)	(3.6)	8.5
LG화학	349,500	(1.1)	(5.5)	3.2	(11.2)	(12.2)	26.9
롯데케미칼	345,500	(2.1)	(4.8)	(11.7)	(19.7)	(5.5)	6.3
한화케미칼	21,900	(3.1)	(10.6)	(22.1)	(25.6)	(27.8)	(29.0)
금호석유화학	111,000	6.2	4.7	0.0	15.9	11.3	51.0
KCC	326,000	(0.3)	(5.2)	(9.1)	(4.7)	(14.3)	(19.6)
OCI	107,500	0.9	(2.7)	(29.3)	(32.2)	(17.9)	13.0
SKC	45,450	3.1	11.4	15.2	23.0	3.9	36.9
SK이노베이션	204,000	(0.2)	(4.2)	(1.4)	(2.6)	1.0	29.5
S-Oil	111,000	0.9	1.4	(0.9)	(5.1)	(10.8)	17.5
GS	54,500	(0.7)	(7.8)	(11.8)	(12.0)	(11.5)	(16.9)
SK가스	91,600	(1.3)	(2.1)	(9.3)	(1.0)	(0.7)	(29.8)
포스코대우	20,350	(3.3)	(12.8)	(18.9)	(8.7)	12.4	(10.0)
LG상사	23,750	(3.7)	(10.0)	(16.7)	(9.7)	(13.2)	(22.3)
한국전력	32,900	(0.8)	(4.8)	(7.8)	4.9	(16.2)	(20.1)
한국가스공사	60,400	(4.4)	(0.5)	(0.8)	28.6	39.0	16.8

투자의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	450,000	28.8	12.10	1.61
매수	480,000	38.9	9.97	0.98
매수	39,000	78.1	7.80	0.56
매수	150,000	35.1	10.81	1.67
매수	450,000	38.0	11.94	0.51
매수	180,000	67.4	8.01	0.72
매수	50,000	10.0	12.47	1.12
매수	230,000	12.7	12.45	1.03
매수	140,000	26.1	13.45	1.74
매수	80,000	46.8	5.12	0.69
매수	130,000	41.9	8.05	0.60
매수	25,000	22.9	10.81	0.87
매수	38,000	60.0	7.75	0.70
매수	45,000	36.8	7.24	0.26
매수	60,000	(0.7)	10.52	0.80

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

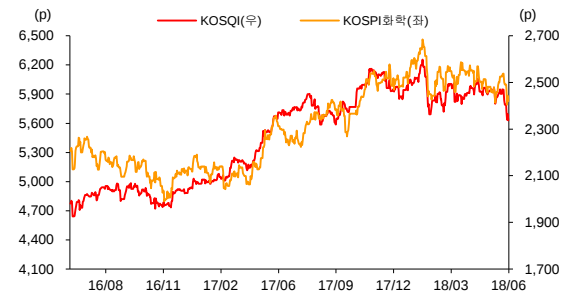
* 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.

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

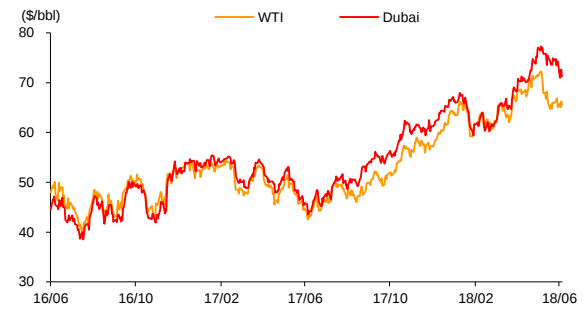
* 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

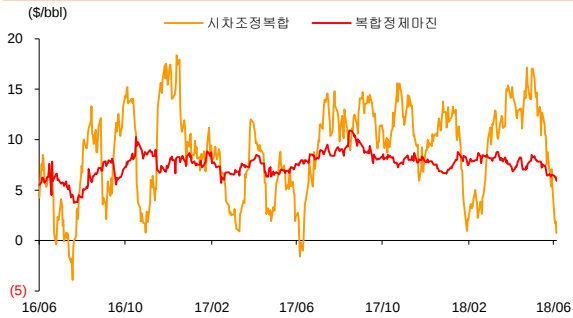
KOSPI/KOSPI화학



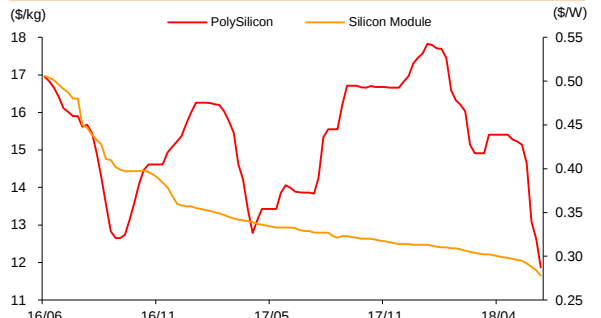
WTI/Dubai



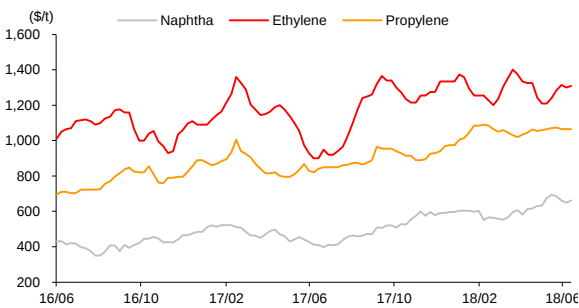
Complex & 1M lagging margin



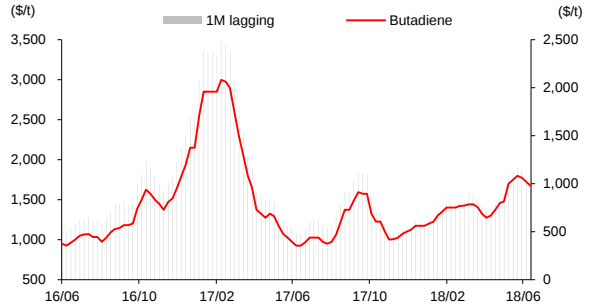
Polysilicon & Module prices



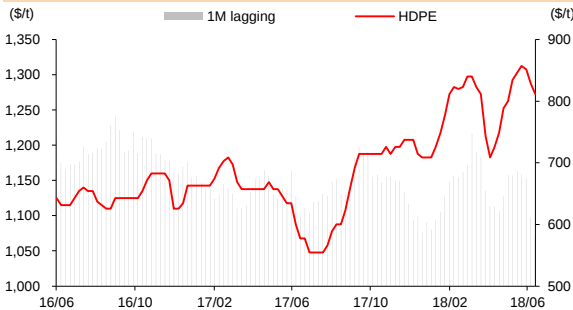
Naphtha/Ethylene/Propylene prices



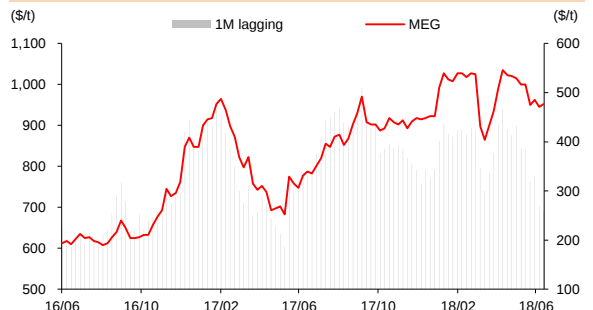
Butadiene price & 1M lagging naphtha spread



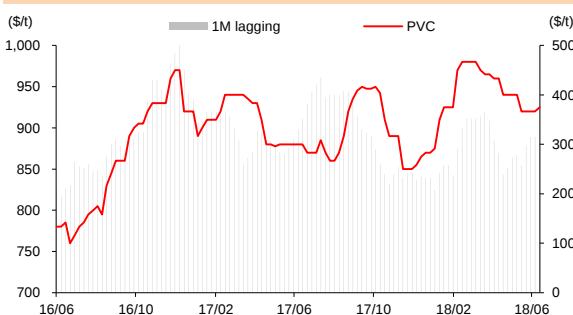
HDPE price & 1M lagging naphtha spread



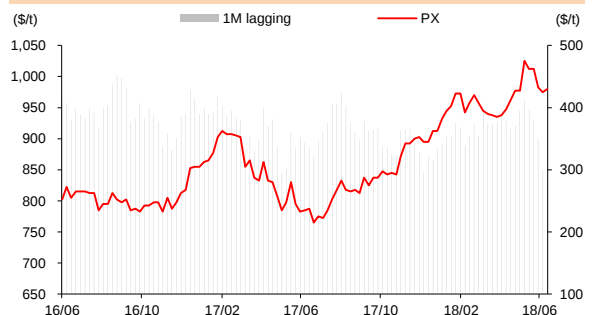
MEG price & 1M lagging naphtha spread



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: Platts)
제목	사우디 석유장관, "\$2조 규모 아람코 IPO 타이밍은 중요치 않아"
결론	올 하반기 예정이던 IPO가 연기되며 유가 상승 요인이 다소 소멸됨
세부	1) 칼리드 알팔리는 아람코 IPO가 2019년에 이뤄지길 바란다고 밝힘 2) 그러나 특정 시점에 IPO가 이뤄져야 하는 것은 아니라고도 밝힘 3) 다양한 증시를 고려중인 가운데 법률적 문제가 중요한 이슈임 4) 뉴욕과 런던 증시가 상장 유치를 위해 제도 변경까지 추진중임 5) 올 하반기 예정이던 IPO가 연기되며 유가 상승 요인이 다소 소멸됨

WTI Comment	(출처: 연합뉴스)
제목	증산 가능성 부각' 약세...WTI 0.3%↓
상승	
요인	
하락	OPEC 회의에서 기존 '감산합의'를 완화, 증산 가능성 부각
요인	

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

Issue 4
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1) 2) 3) 4) 5)

Issue 5
제목
결론
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Issue 6
제목
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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	0.862	0.864	0.865	0.848	0.811	0.842	0.895	0.833	0.904	0.887	0.825
	Change, %		(0.2)	(0.3)	1.6	6.3	2.3	(3.8)	3.5	(4.7)	(2.8)	4.4
	USD/JPY	110.0	110.4	110.6	111.1	106.1	113.3	111.4	112.6	108.8	112.1	108.7
	Change, %		(0.3)	(0.6)	(1.0)	3.7	(2.9)	(1.2)	(2.3)	1.1	(1.9)	1.2
	USD/KRW	1,112.4	1,105.2	1,082.9	1,085.4	1,072.3	1,082.6	1,144.0	1,066.7	1,160.5	1,130.9	1,074.1
	Change, %		0.7	2.7	2.5	3.7	2.8	(2.8)	4.3	(4.1)	(1.6)	3.6
Agriculture	Corn	357.0	354.3	363.0	402.8	375.0	351.3	368.8	350.8	358.5	359.4	375.9
	Change, %		0.8	(1.7)	(11.4)	(4.8)	1.6	(3.2)	1.8	(0.4)	(0.7)	(5.0)
	Soybean	880.5	889.5	927.3	1,025.3	1,029.8	948.8	918.8	951.8	987.5	975.9	1,006.8
	Change, %		(1.0)	(5.0)	(14.1)	(14.5)	(7.2)	(4.2)	(7.5)	(10.8)	(9.8)	(12.5)
	Wheat	495.3	488.3	501.5	507.3	453.5	427.0	464.5	427.0	436.4	436.0	475.6
	Change, %		1.4	(1.2)	(2.4)	9.2	16.0	6.6	16.0	13.5	13.6	4.1
	Rice	12.7	12.7	12.3	12.2	12.3	12.0	11.2	11.7	10.3	11.1	12.2
	Change, %		0.4	3.2	3.8	3.1	5.8	13.6	8.7	22.7	14.8	3.7
	Oats	242.0	238.8	230.0	245.3	231.5	244.0	258.8	241.0	196.3	252.3	245.6
	Change, %		1.4	5.2	(1.3)	4.5	(0.8)	(6.5)	0.4	23.3	(4.1)	(1.5)
MYR/mt	Palm Oil	2,254.0	2,261.0	2,319.0	2,433.0	2,459.0	2,411.0	2,587.0	2,444.0	2,653.8	2,787.3	2,435.2
	Change, %		(0.3)	(2.8)	(7.4)	(8.3)	(6.5)	(12.9)	(7.8)	(15.1)	(19.1)	(7.4)
	Cocoa	2,509.0	2,568.0	2,450.0	2,615.0	2,524.0	1,907.0	1,813.0	1,892.0	2,854.0	2,005.2	2,390.3
	Change, %		(2.3)	2.4	(4.1)	(0.6)	31.6	38.4	32.6	(12.1)	25.1	5.0
	Cotton	83.2	83.2	93.4	88.4	82.6	77.9	70.9	78.6	65.6	73.5	83.4
	Change, %		0.0	(10.9)	(5.9)	0.8	6.8	17.4	5.8	26.9	13.2	(0.3)
	Sugar	11.9	11.9	12.2	12.1	12.7	14.8	13.1	15.2	18.2	15.8	12.7
	Change, %		(0.2)	(2.9)	(1.9)	(6.3)	(19.6)	(9.1)	(21.7)	(34.6)	(25.0)	(6.7)
	Coffee	112.6	113.7	115.7	120.2	118.9	122.3	119.4	126.2	136.1	133.0	119.4
	Change, %		(0.9)	(2.7)	(6.3)	(5.3)	(7.9)	(5.7)	(10.8)	(17.2)	(15.3)	(5.7)
Energy	WTI	65.5	66.2	66.9	72.2	65.2	58.4	42.5	60.4	43.4	51.0	65.1
	Change, %		(1.0)	(2.0)	(9.3)	0.6	12.3	54.1	8.5	51.1	28.6	0.6
	Brent	73.1	74.7	75.9	79.2	69.5	64.9	44.8	66.9	45.1	54.9	70.8
	Change, %		(2.3)	(3.8)	(7.8)	5.2	12.6	63.0	9.2	62.1	33.2	3.1
	Natural Gas	3.0	3.0	3.0	2.8	2.6	2.6	2.9	3.0	2.6	3.0	2.8
	Change, %		0.4	0.3	5.9	12.8	14.5	2.8	0.7	16.6	(1.6)	5.0
	Ethanol	1.4	1.4	1.4	1.5	1.5	1.3	1.5	1.3	1.5	1.5	1.4
	Change, %		1.2	0.5	(4.6)	(3.5)	9.7	(6.3)	7.6	(6.3)	(5.1)	(1.4)
	RBOB Gasoline	201.2	202.4	209.1	225.7	201.2	174.8	141.1	179.9	140.0	162.9	198.1
	Change, %		(0.6)	(3.8)	(10.8)	0.0	15.1	42.7	11.8	43.8	23.5	1.6
	Coal	114.0	114.5	115.5	104.6	97.2	100.2	80.7	100.8	65.5	88.2	102.8
	Change, %		(0.4)	(1.3)	9.0	17.3	13.8	41.3	13.1	74.1	29.2	10.9
Metal	Gold	1,267.2	1,267.8	1,302.3	1,292.6	1,332.5	1,266.5	1,246.6	1,302.6	1,248.5	1,258.6	1,320.9
	Change, %		(0.0)	(2.7)	(2.0)	(4.9)	0.1	1.7	(2.7)	1.5	0.7	(4.1)
	Silver	16.3	16.3	17.2	16.5	16.6	16.1	16.5	16.9	17.1	17.1	16.7
	Change, %		0.2	(5.0)	(1.2)	(1.5)	1.1	(1.2)	(3.7)	(4.6)	(4.4)	(2.1)
	Copper	6,786.0	6,773.0	7,177.0	6,879.0	6,793.0	7,086.0	5,742.0	7,247.0	4,872.0	6,199.4	6,955.4
	Change, %		0.2	(5.4)	(1.4)	(0.1)	(4.2)	18.2	(6.4)	39.3	9.5	(2.4)
	Nickel	1,018.2	1,014.6	1,032.2	1,000.0	876.9	770.3	578.2	809.1	646.4	680.2	908.3
	Change, %		0.4	(1.4)	1.8	16.1	32.2	76.1	25.8	57.5	49.7	12.1
	Zinc	2,918.0	2,995.0	3,187.0	3,104.0	3,249.0	3,242.0	2,640.0	3,319.0	2,097.5	2,888.5	3,262.3
	Change, %		(2.6)	(8.4)	(6.0)	(10.2)	(10.0)	10.5	(12.1)	39.1	1.0	(10.6)
	Lead	2,376.8	2,401.5	2,438.8	2,409.8	2,402.0	2,499.8	2,176.0	2,482.8	1,868.3	2,315.7	2,452.9
	Change, %		(1.0)	(2.5)	(1.4)	(1.1)	(4.9)	9.2	(4.3)	27.2	2.6	(3.1)
	Aluminum	14,125.0	14,125.0	14,530.0	14,715.0	13,825.0	14,565.0	13,850.0	15,020.0	12,373.5	14,556.6	14,396.6
	Change, %		0.0	(2.8)	(4.0)	2.2	(3.0)	2.0	(6.0)	14.2	(3.0)	(1.9)
	Cobalt	80,000.0	80,250.0	81,250.0	92,000.0	94,800.0	75,205.0	58,250.0	75,205.0	25,480.1	55,906.9	85,069.9
	Change, %		(0.3)	(1.5)	(13.0)	(15.6)	6.4	37.3	6.4	214.0	43.1	(6.0)
	HR Coil	900.0	902.0	904.0	882.0	825.0	633.0	589.0	662.0	519.3	620.1	811.1
	Change, %		(0.2)	(0.4)	2.0	9.1	42.2	52.8	36.0	73.3	45.1	11.0
	Scrap	400.0	400.0	408.0	395.0	410.0	365.0	350.0	367.0	275.7	344.7	388.4
	Change, %		0.0	(2.0)	1.3	(2.4)	9.6	14.3	9.0	45.1	16.0	3.0

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		06/21	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	65.5	66.2	66.9	72.1	64.3	58.4	42.7	53.7	43.4	50.9	65.2
	Change, %		(1.0)	(2.0)	(9.1)	1.9	12.3	53.3	22.0	51.2	28.8	0.6
	Dubai	71.3	72.7	74.3	77.3	65.4	62.2	43.5	53.8	41.3	53.1	67.8
	Change, %		(1.9)	(4.1)	(7.8)	8.9	14.6	63.8	32.4	72.5	34.2	5.1
Crude Oil	Gasoline(휘발유)	79.8	81.5	85.1	91.9	79.8	75.0	56.3	69.8	56.3	68.0	81.0
Product	Change, %		(2.1)	(6.2)	(13.2)	0.0	6.4	41.7	14.2	41.8	17.3	(1.5)
	Kerosene(등유)	84.5	86.4	87.9	92.6	80.9	76.0	54.5	66.4	52.9	65.2	83.6
	Change, %		(2.2)	(3.9)	(8.7)	4.5	11.2	55.2	27.2	59.8	29.6	1.1
	Diesel(경유)	84.4	86.5	88.2	92.2	80.5	76.1	54.8	65.5	52.1	65.6	82.6
	Change, %		(2.4)	(4.3)	(8.5)	4.8	10.8	53.8	28.8	61.9	28.6	2.1
	Bunker-C	67.2	68.7	68.8	71.2	58.4	57.1	43.6	52.1	35.5	49.7	61.5
	Change, %		(2.2)	(2.3)	(5.6)	15.1	17.7	54.1	29.1	89.2	35.4	9.3
	Naphtha	67.8	69.2	71.8	77.9	64.8	65.0	42.6	53.5	42.6	53.7	67.1
	Change, %		(2.1)	(5.7)	(13.0)	4.6	4.2	59.2	26.8	59.1	26.1	1.1
Dubai	Gasoline(휘발유)	8.5	8.8	10.8	14.7	14.3	12.8	12.8	16.0	14.9	14.9	13.2
Spread	Change		(0.3)	(2.2)	(6.1)	(5.8)	(4.3)	(4.3)	(7.5)	(6.4)	(6.4)	(4.6)
	Kerosene(등유)	13.3	13.8	13.6	15.3	15.4	13.9	11.0	12.6	11.6	12.1	15.8
	Change		(0.5)	(0.3)	(2.0)	(2.2)	(0.6)	2.3	0.7	1.7	1.1	(2.5)
	Diesel(경유)	13.1	13.8	13.9	14.9	15.0	13.9	11.3	11.7	10.8	12.5	14.8
	Change		(0.7)	(0.8)	(1.8)	(1.9)	(0.8)	1.8	1.4	2.3	0.6	(1.7)
	Bunker-C	(4.0)	(3.9)	(5.5)	(6.1)	(7.0)	(5.1)	0.1	(1.8)	(5.8)	(3.4)	(6.3)
	Change		(0.1)	1.5	2.1	3.0	1.0	(4.1)	(2.3)	1.8	(0.6)	2.3
	Naphtha	(3.5)	(3.5)	(2.5)	0.6	(0.6)	2.9	(0.9)	(0.4)	1.3	0.6	(0.7)
	Change		(0.0)	(1.0)	(4.1)	(2.8)	(6.3)	(2.5)	(3.1)	(4.8)	(4.1)	(2.7)
Refining	Simple(단순)	1.7	2.0	1.5	2.2	2.0	2.5	4.3	3.8	1.9	3.2	2.1
Margin	Change		(0.3)	0.2	(0.5)	(0.3)	(0.8)	(2.6)	(2.1)	(0.2)	(1.4)	(0.4)
	Complex(복합)	5.9	6.3	6.5	8.1	7.9	7.7	7.7	8.3	7.0	8.0	7.7
	Change		(0.4)	(0.6)	(2.2)	(2.0)	(1.8)	(1.8)	(2.3)	(1.0)	(2.1)	(1.7)
	Complex(lagging)	0.7	1.9	7.1	14.6	11.6	9.2	(1.6)	18.0	8.5	8.9	10.1
	Change		(1.2)	(6.3)	(13.9)	(10.8)	(8.5)	2.3	(17.2)	(7.7)	(8.2)	(9.3)

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			06/21	06/20	06/19	06/18	06/15	06/14	06/13	06/12	06/11	06/08
Spot Price	Naphtha	CFR Japan	619.5	634.0	632.0	625.5	653.5	653.5	645.0	650.5	647.0	649.4
	Ethylene	CFR SE Asia	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,235.0	1,235.0	1,225.0
	Propylene	FOB Korea	1,060.0	1,070.0	1,070.0	1,070.0	1,070.0	1,070.0	1,070.0	1,070.0	1,070.0	1,075.0
	Butadiene	FOB Korea	1,640.0	1,640.0	1,670.0	1,680.0	1,680.0	1,680.0	1,720.0	1,720.0	1,720.0	1,725.0
	HDPE	CFR FE Asia	1,355.0	1,355.0	1,355.0	1,360.0	1,360.0	1,360.0	1,360.0	1,360.0	1,360.0	1,360.0
	LDPE	CFR FE Asia	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,200.0
	LLDPE	CFR FE Asia	1,160.0	1,165.0	1,165.0	1,165.0	1,165.0	1,165.0	1,165.0	1,165.0	1,165.0	1,170.0
	MEG	CFR China	882.0	880.0	885.0	922.0	922.0	922.0	913.0	915.0	900.0	903.0
	PP	CFR FE Asia	1,245.0	1,245.0	1,245.0	1,250.0	1,250.0	1,250.0	1,250.0	1,250.0	1,250.0	1,250.0
	PX	CFR China	927.7	937.7	935.3	944.3	971.7	971.7	965.3	969.0	967.0	969.0
	PTA	CFR China	830.0	830.0	839.0	842.0	842.0	842.0	841.0	843.0	841.0	841.0
	Benzene	FOB Korea	800.7	807.7	806.7	812.7	835.0	835.0	839.0	842.0	841.0	843.0
	Toluene	FOB Korea	732.0	734.0	752.0	769.0	779.0	779.0	780.0	780.0	780.0	781.0
	Xylene	FOB Korea	778.5	783.5	785.5	793.5	814.0	814.0	810.0	812.0	814.0	822.0
	SM	FOB Korea	1,342.0	1,339.0	1,342.0	1,394.0	1,420.0	1,420.0	1,431.0	1,447.0	1,413.0	1,408.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	Naphtha	CFR Japan	661.5	649.5	694.0	568.0	565.0	409.5	484.5	399.5	493.5	611.5
	Change, %			1.8	(4.7)	16.5	17.1	61.5	36.5	65.6	34.0	8.2
	Ethylene	CFR SE Asia	1,260.0	1,215.0	1,135.0	1,250.0	1,172.5	855.0	990.0	1,040.9	1,090.9	1,231.3
	Change, %			3.7	11.0	0.8	7.5	47.4	27.3	21.0	15.5	2.3
	Propylene	CFR SE Asia	1,015.0	1,012.5	1,022.5	980.0	1,015.0	737.5	815.0	705.7	823.6	1,055.9
	Change, %			0.2	(0.7)	3.6	0.0	37.6	24.5	43.8	23.2	(3.9)
	Butadiene	CFR SE Asia	1,625.0	1,675.0	1,700.0	1,390.0	1,350.0	875.0	2,100.0	1,116.8	1,481.1	1,410.2
	Change, %			(3.0)	(4.4)	16.9	20.4	85.7	(22.6)	45.5	9.7	15.2
	Benzene	CFR SE Asia	832.5	855.0	870.0	867.5	895.0	782.5	822.5	646.7	838.8	876.8
	Change, %			(2.6)	(4.3)	(4.0)	(7.0)	6.4	1.2	28.7	(0.8)	(5.0)
	Toluene	CFR SE Asia	815.0	815.0	825.0	720.0	750.0	645.0	690.0	630.5	689.5	764.0
	Change, %			0.0	(1.2)	13.2	8.7	26.4	18.1	29.3	18.2	6.7
	Xylene	CFR SE Asia	827.5	840.0	830.0	762.5	757.5	620.0	675.0	627.7	668.8	776.5
	Change, %			(1.5)	(0.3)	8.5	9.2	33.5	22.6	31.8	23.7	6.6
Spread	Ethylene	-Naphtha	598.5	565.5	441.0	682.0	607.5	445.5	505.5	641.4	597.4	619.8
	Change, %			5.8	35.7	(12.2)	(1.5)	34.3	18.4	(6.7)	0.2	(3.4)
	Propylene	-Naphtha	353.5	363.0	328.5	412.0	450.0	328.0	330.5	306.2	330.1	444.5
	Change, %			(2.6)	7.6	(14.2)	(21.4)	7.8	7.0	15.5	7.1	(20.5)
	Butadiene	-Naphtha	963.5	1,025.5	1,006.0	822.0	785.0	465.5	1,615.5	717.3	987.6	798.8
	Change, %			(6.0)	(4.2)	17.2	22.7	107.0	(40.4)	34.3	(2.4)	20.6
	Benzene	-Naphtha	171.0	205.5	176.0	299.5	330.0	373.0	338.0	247.2	345.3	265.3
	Change, %			(16.8)	(2.8)	(42.9)	(48.2)	(54.2)	(49.4)	(30.8)	(50.5)	(35.5)
	Toluene	-Naphtha	153.5	165.5	131.0	152.0	185.0	235.5	205.5	231.0	196.0	152.5
	Change, %			(7.3)	17.2	1.0	(17.0)	(34.8)	(25.3)	(33.5)	(21.7)	0.7
	Xylene	-Naphtha	166.0	190.5	136.0	194.5	192.5	210.5	190.5	228.2	175.3	165.0
	Change, %			(12.9)	22.1	(14.7)	(13.8)	(21.1)	(12.9)	(27.3)	(5.3)	0.6

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	1,272.5	1,287.5	1,302.5	1,282.5	1,280.0	1,067.5	1,142.5	1,134.6	1,142.5	1,258.6
	Change, %			(1.2)	(2.3)	(0.8)	(0.6)	19.2	11.4	12.2	11.4	1.1
	MEG	CFR SE Asia	952.5	945.0	1,000.0	865.0	1,017.5	787.5	847.5	660.8	850.6	985.6
	Change, %			0.8	(4.8)	10.1	(6.4)	21.0	12.4	44.1	12.0	(3.4)
	PVC	CFR SE Asia	925.0	920.0	920.0	970.0	980.0	880.0	920.0	823.4	899.9	943.1
	Change, %			0.5	0.5	(4.6)	(5.6)	5.1	0.5	12.3	2.8	(1.9)
	PP	CFR SE Asia	1,292.5	1,282.5	1,287.5	1,297.5	1,275.0	1,057.5	1,032.5	978.4	1,099.6	1,259.5
	Change, %			0.8	0.4	(0.4)	1.4	22.2	25.2	32.1	17.5	2.6
	2-EH	CFR Korea	1,120.0	1,100.0	1,190.0	1,130.0	1,080.0	925.0	865.0	772.4	970.0	1,120.0
	Change, %			1.8	(5.9)	(0.9)	3.7	21.1	29.5	45.0	15.5	0.0
	ABS	CFR SE Asia	2,060.0	2,060.0	2,070.0	2,020.0	2,060.0	1,710.0	1,635.0	1,347.1	1,844.7	2,034.6
	Change, %			0.0	(0.5)	2.0	0.0	20.5	26.0	52.9	11.7	1.2
	SBR	CFR SE Asia	1,900.0	1,900.0	1,840.0	1,750.0	1,755.0	1,450.0	2,000.0	1,483.0	1,980.5	1,750.0
	Change, %			0.0	3.3	8.6	8.3	31.0	(5.0)	28.1	(4.1)	8.6
	SM	CFR SE Asia	1,492.5	1,525.0	1,432.5	1,337.5	1,437.5	1,165.0	1,205.0	1,064.6	1,253.8	1,404.5
	Change, %			(2.1)	4.2	11.6	3.8	28.1	23.9	40.2	19.0	6.3
	Caustic	FOB NEA	539.0	550.0	598.0	601.0	549.0	437.5	422.5	316.6	491.2	586.0
	Change, %			(2.0)	(9.9)	(10.3)	(1.8)	23.2	27.6	70.3	9.7	(8.0)
	PX	CFR SE Asia	980.0	975.0	1,012.5	940.0	957.5	787.5	855.0	790.4	844.4	964.6
	Change, %			0.5	(3.2)	4.3	2.3	24.4	14.6	24.0	16.1	1.6
	PO	CFR China	1,787.5	1,877.5	1,865.0	1,875.0	1,907.5	1,395.0	1,562.5	1,396.8	1,601.2	1,892.0
	Change, %			(4.8)	(4.2)	(4.7)	(6.3)	28.1	14.4	28.0	11.6	(5.5)
	Caprolactam	CFR SE Asia	2,150.0	2,120.0	2,090.0	2,180.0	2,060.0	1,600.0	1,850.0	1,344.9	1,936.4	2,118.5
	Change, %			1.4	2.9	(1.4)	4.4	34.4	16.2	59.9	11.0	1.5
	PTA	CFR SE Asia	857.5	860.0	842.5	790.0	777.5	635.0	642.5	613.7	667.8	797.7
	Change, %			(0.3)	1.8	8.5	10.3	35.0	33.5	39.7	28.4	7.5
Spread	HDPE		611.0	638.0	608.5	714.5	715.0	658.0	658.0	735.1	649.0	647.2
	Change, %			(4.2)	0.4	(14.5)	(14.5)	(7.1)	(7.1)	(16.9)	(5.9)	(5.6)
	MEG		291.0	295.5	306.0	297.0	452.5	378.0	363.0	261.3	357.1	374.2
	Change, %			(1.5)	(4.9)	(2.0)	(35.7)	(23.0)	(19.8)	11.4	(18.5)	(22.2)
	PVC		263.5	270.5	226.0	402.0	415.0	470.5	435.5	423.9	406.4	331.7
	Change, %			(2.6)	16.6	(34.5)	(36.5)	(44.0)	(39.5)	(37.8)	(35.2)	(20.6)
	PP		631.0	633.0	593.5	729.5	710.0	648.0	548.0	578.9	606.1	648.1
	Change, %			(0.3)	6.3	(13.5)	(11.1)	(2.6)	15.1	9.0	4.1	(2.6)
	2-EH		458.5	450.5	496.0	562.0	515.0	515.5	380.5	372.9	476.5	508.5
	Change, %			1.8	(7.6)	(18.4)	(11.0)	(11.1)	20.5	23.0	(3.8)	(9.8)
	ABS		1,398.5	1,410.5	1,376.0	1,452.0	1,495.0	1,300.5	1,150.5	947.6	1,351.2	1,423.1
	Change, %			(0.9)	1.6	(3.7)	(6.5)	7.5	21.6	47.6	3.5	(1.7)
	SBR	BD spread	275.0	225.0	140.0	360.0	405.0	575.0	(100.0)	366.2	499.4	339.8
	Change, %			22.2	96.4	(23.6)	(32.1)	(52.2)	(375.0)	(24.9)	(44.9)	(19.1)
	SM		831.0	875.5	738.5	769.5	872.5	755.5	720.5	665.1	760.3	793.0
	Change, %			(5.1)	12.5	8.0	(4.8)	10.0	15.3	24.9	9.3	4.8
	Caustic											
	Change, %											
	PX		318.5	325.5	318.5	372.0	392.5	378.0	370.5	390.9	351.0	353.1
	Change, %			(2.2)	0.0	(14.4)	(18.9)	(15.7)	(14.0)	(18.5)	(9.2)	(9.8)
	PO	propylene spread	772.5	865.0	842.5	895.0	892.5	657.5	747.5	691.1	777.6	836.0
	Change, %			(10.7)	(8.3)	(13.7)	(13.4)	17.5	3.3	11.8	(0.7)	(7.6)
	Caprolactam	benzene spread	1,317.5	1,265.0	1,220.0	1,312.5	1,165.0	817.5	1,027.5	698.2	1,097.6	1,241.8
	Change, %			4.2	8.0	0.4	13.1	61.2	28.2	88.7	20.0	6.1
	PTA	px spread	171.5	177.5	133.8	132.0	107.3	83.8	44.0	60.4	76.7	122.5
	Change, %			(3.4)	28.2	29.9	59.9	104.8	289.8	183.8	123.6	40.0

자료 : Ciscchem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	06/21	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	65.3	(0.9)	(4.5)	(4.9)	(3.2)	(8.9)	2.5	(8.3)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	101.0	(2.0)	(6.5)	(7.1)	(6.1)	8.7	21.3	9.0	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	83.3	(2.4)	(5.4)	(6.6)	(1.1)	(10.6)	(2.9)	(9.2)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	74.4	(0.4)	(2.6)	(3.1)	(6.7)	1.4	(5.2)	1.8	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	100.6	(0.8)	(3.2)	(9.0)	(8.3)	(1.4)	5.1	(1.0)	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	68.6	(3.0)	(5.0)	(1.8)	4.9	5.8	2.7	3.5	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	613	0.3	(5.4)	(8.6)	(0.2)	(25.6)	0.7	(24.3)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	906	(1.1)	(7.7)	(13.8)	(10.9)	(27.7)	1.6	(26.7)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,035	1.1	(6.9)	(13.0)	(8.1)	(13.2)	(0.3)	(12.4)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,404	(0.4)	(2.9)	(8.2)	0.1	(3.8)	18.5	(3.4)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	1,850	(0.6)	(5.5)	(17.3)	(23.6)	(17.2)	(0.1)	(16.6)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,242	(2.1)	(5.4)	(4.8)	1.9	(21.1)	(8.0)	(17.7)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	126.0	0.2	(0.5)	7.7	14.3	23.8	21.1	24.2	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	72.5	(0.4)	(0.7)	2.1	4.0	24.5	29.5	22.9	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	108.5	0.9	1.9	(3.6)	1.9	14.3	19.6	9.9	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	115.5	0.9	1.8	(2.1)	4.1	18.2	25.5	12.1	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	84.2	(0.2)	0.0	(3.3)	2.1	10.9	16.1	8.1	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.70	(1.6)	(1.2)	(6.6)	(6.4)	(9.8)	(12.3)	(10.0)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fiber)	CNY	1.87	1.1	(7.9)	(14.2)	(19.0)	(30.2)	(45.6)	(30.0)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,032	1.2	2.4	10.8	15.1	13.0	45.1	13.4	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	106.9	1.8	0.9	(1.0)	(0.1)	8.1	16.2	10.2	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	80.3	(4.2)	(4.2)	(16.4)	(17.1)	(4.2)	17.6	(5.6)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.4	0.1	0.7	(3.4)	1.3	10.5	17.5	9.1	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	349,500	(1.1)	(5.5)	3.2	(14.8)	(10.6)	24.8	(13.7)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	345,500	(2.1)	(4.8)	(11.7)	(20.7)	(5.2)	2.7	(6.1)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	21,900	(3.1)	(10.6)	(22.1)	(25.4)	(27.4)	(27.1)	(30.7)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	111,000	6.2	4.7	0.0	13.5	14.2	52.3	11.6	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	45,450	3.1	11.4	15.2	16.4	5.5	37.1	(3.3)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	62,100	(3.1)	(4.5)	(4.6)	(0.3)	(3.7)	13.9	(1.6)	359	#N/A	N/A	#N/A	N/A	#N/A	N/A
효성	KRW	6,920	(1.8)	(7.0)	0.4	(30.8)	(6.4)	18.9	(8.7)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			(0.5)	(2.8)	(4.9)	(4.1)	(2.3)	10.3	(3.1)							
Refinery																
Valero	USD	111.2	(3.9)	(4.8)	(8.9)	16.5	22.6	72.0	21.0	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	65.1	(3.5)	(4.4)	(7.9)	14.1	16.4	44.8	18.6	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemical	TWD	119.5	(1.2)	0.0	(4.8)	12.7	4.8	8.6	3.5	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	135.1	(1.5)	(2.8)	(6.3)	31.9	21.7	48.2	18.1	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	72.5	(1.8)	(3.6)	(8.1)	(1.0)	9.3	40.1	9.9	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	41.2	(3.4)	(1.3)	(2.8)	25.0	0.6	36.5	(0.6)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	72.0	(3.5)	(1.3)	(4.2)	46.8	43.6	178.3	40.6	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	111.5	(2.7)	(3.5)	(8.2)	15.9	11.4	41.3	10.2	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	34.2	(2.6)	1.9	6.2	28.1	11.7	38.6	10.0	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	743.8	0.5	(0.0)	(1.6)	17.1	4.5	55.6	2.3	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	3,535.0	1.0	(4.8)	(13.5)	(10.3)	(20.2)	12.4	(21.9)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	65.5	0.0	(2.2)	(6.9)	13.2	21.2	84.4	22.8	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	77.6	(0.8)	(1.8)	(0.8)	10.8	8.8	16.1	9.0	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	42.8	(1.0)	(7.7)	(6.5)	(9.5)	(4.2)	(15.7)	(3.2)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	204,000	(0.2)	(4.2)	(1.4)	(3.8)	0.7	29.9	(0.2)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	111,000	0.9	1.4	(0.9)	(5.5)	(10.5)	18.0	(5.1)	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	54,500	(0.7)	(7.8)	(11.8)	(14.2)	(11.8)	(19.0)	(12.4)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			(1.4)	(2.8)	(5.2)	11.1	7.7	40.6	7.2							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	06/21	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	80	(0.9)	(2.7)	(3.1)	6.2	(5.0)	(2.1)	(4.7)	337,394	16.5	15.3	1.7	1.7	7.2	6.9
BP	GBP	560	(0.9)	(4.4)	(5.6)	18.4	7.7	22.5	7.0	147,856	14.1	13.4	1.4	1.4	5.4	5.2
Shell	EUR	2,524	(0.6)	(3.2)	(8.2)	13.9	2.8	22.2	1.8	283,544	12.1	11.0	1.4	1.3	5.8	5.6
Chevron	USD	123	(2.2)	(3.1)	(5.2)	4.7	(1.8)	17.3	(2.1)	234,265	15.7	15.1	1.5	1.5	6.2	6.0
Total	EUR	51	(0.9)	(3.9)	(6.8)	9.1	9.0	14.4	10.3	156,839	11.5	10.9	1.2	1.2	5.4	5.1
Sinopec	CNY	6	0.2	(0.8)	(11.8)	(6.4)	7.4	7.9	4.6	117,238	10.2	9.8	1.0	1.0	3.8	3.8
Petrochina	CNY	7	(2.0)	(6.1)	(14.7)	(9.5)	(8.9)	(5.8)	(10.1)	196,456	22.4	18.9	1.1	1.1	5.3	5.2
CNOOC	CNY	9	(2.1)	(13.0)	(23.4)	(17.1)	(11.4)	(18.7)	(14.2)	70,793	8.6	8.7	1.1	1.1	3.7	3.7
Gazprom	RUB	134	(1.8)	(3.6)	(8.4)	(5.0)	2.1	13.9	3.0	49,946	3.1	3.2	0.2	0.2	2.6	2.6
Rosneft	RUB	393	0.7	2.9	1.5	23.7	33.7	23.4	34.7	65,341	7.6	7.0	0.9	1.0	4.6	4.4
Anadarko	USD	69	(0.9)	(2.2)	(3.1)	12.9	33.7	53.2	29.5	35,778	24.2	20.7	2.5	2.3	6.7	5.9
Petrobras	BRL	15	(6.8)	0.0	(39.7)	(31.5)	(4.8)	29.7	(6.2)	56,917	6.0	5.3	0.6	0.5	4.2	3.9
Lukoil	USD	4,135	0.1	1.1	(6.0)	6.7	24.1	51.5	24.0	55,338	5.5	5.8	0.8	0.7	N/A	N/A
Kinder	USD	17	(1.9)	1.2	7.4	7.9	(5.0)	(7.3)	(5.0)	47,497	20.0	17.8	1.1	1.1	10.5	10.2
Equinor ASA	NOK	209	(2.2)	(4.5)	(5.5)	14.7	19.8	48.8	19.3	85,769	14.0	13.4	1.9	1.8	3.4	3.3
BHP	AUD	33	0.5	(1.9)	(3.5)	13.3	13.6	48.2	10.8	123,343	15.5	17.0	2.1	2.0	6.2	6.4
PTT E&P	THB	126	(2.3)	(7.4)	(15.4)	8.6	26.6	45.2	26.0	15,218	12.7	12.1	1.3	1.2	3.8	3.6
Petronas gas	MYR	17	0.1	(1.5)	(4.1)	(4.2)	1.7	(7.8)	(1.4)	8,517	18.1	17.9	2.6	2.5	9.9	9.8
Chesapeake	USD	5	(0.2)	3.0	5.6	50.8	26.8	7.7	23.0	4,441	5.9	6.6	#N/A	N/A	7.0	6.4
Noble Energy	USD	35	(2.3)	1.1	(5.3)	12.8	21.8	24.3	20.0	16,936	31.2	22.9	1.5	1.4	7.7	6.5
Average		0	(1.3)	(2.4)	(7.8)	6.5	9.7	19.4	8.5							
PV																
WACKER	EUR	114.2	(0.8)	(2.1)	(26.0)	(15.6)	(28.7)	19.3	(29.6)	6,910	16.5	14.8	1.7	1.6	5.7	5.5
GCL-Poly	HKD	0.7	0.0	(7.6)	(25.5)	(30.5)	(45.9)	0.0	(47.9)	1,730	6.3	5.5	0.4	0.4	6.4	5.9
SunPower	USD	8.0	(1.0)	(0.5)	(15.6)	(0.7)	(12.0)	3.9	(5.3)	1,124	#N/A	N/A	#N/A	N/A	18.4	11.6
Canadian Solar	USD	12.4	1.0	(0.4)	(30.0)	(27.6)	(27.8)	(11.3)	(26.4)	727	7.0	7.1	0.6	0.6	7.2	7.9
JA Solar	USD	6.8	(0.6)	(3.1)	(5.0)	0.0	(8.2)	6.7	(8.3)	325	#N/A	N/A	#N/A	N/A	4.9	6.7
Yingli	USD	1.6	1.0	2.8	(8.9)	(4.6)	(7.9)	(23.0)	(5.7)	29	#N/A	N/A	#N/A	N/A	#N/A	N/A
First Solar	USD	52.3	1.2	(2.6)	(26.2)	(29.2)	(24.3)	40.5	(22.5)	5,480	30.3	16.9	1.0	0.9	9.1	5.1
한화큐셀	USD	6.0	(1.1)	(5.3)	(20.4)	(25.2)	(17.2)	(10.5)	(14.1)	502	10.8	22.3	#N/A	N/A	7.9	8.1
OCI	KRW	107,500	0.9	(2.7)	(29.3)	(24.8)	(17.3)	13.8	(21.0)	2,307	0.0	10.3	0.0	0.7	0.0	4.7
웅진에너지	KRW	4,015	(19.4)	(22.9)	(29.4)	(40.7)	(49.8)	(42.6)	(51.2)	107	N/A	0.0	0.7	0.0	4.7	0.0
신성솔라에너지	KRW	1,530	(3.5)	(8.9)	(11.3)	(14.3)	(21.5)	(25.9)	(20.1)	238	N/A	0.7	0.0	4.7	0.0	6.8
Average			(2.0)	(4.9)	(20.7)	(19.4)	(23.7)	(2.7)	(22.9)							
Gas Company																
Towngas China	HKD	7.4	2.8	0.3	(7.0)	4.0	20.9	46.1	17.0	2,594	14.3	12.7	1.2	1.1	12.1	11.0
Kulun	HKD	6.9	(0.1)	(1.7)	(7.1)	(2.3)	(16.4)	8.1	(15.0)	7,120	9.8	8.4	1.1	1.0	5.6	5.1
Beijing Enterprise	HKD	40.0	(1.4)	(4.4)	(8.3)	(6.2)	(12.8)	6.3	(13.9)	6,426	7.0	6.3	0.7	0.6	12.0	11.4
ENN Energy	HKD	75.5	0.3	(1.0)	(6.1)	14.1	33.0	77.3	35.3	10,435	16.6	14.0	3.3	2.8	9.8	8.7
China Resources Gas	HKD	30.1	1.7	(2.9)	(1.3)	10.1	7.9	25.9	6.2	8,533	16.0	14.4	2.7	2.3	8.8	8.1
China Gas Holdings	HKD	31.8	1.8	(4.2)	(2.5)	13.0	42.6	144.6	47.2	20,139	21.0	17.8	5.3	4.4	15.8	13.6
Shenzen Gas	HKD	16.0	(1.6)	(6.5)	(3.2)	(1.1)	11.6	11.6	7.4	4,147	10.6	9.1	1.3	1.2	5.9	5.1
Shann Xi	CNY	6.7	0.0	(5.4)	(15.0)	(8.2)	(23.3)	(25.1)	(20.5)	1,147	15.4	13.5	1.3	1.2	#N/A	N/A
Suntien	HKD	2.3	(1.7)	(11.2)	(22.1)	7.0	15.1	59.0	10.6	1,084	5.8	5.1	0.7	0.7	8.3	7.1
China Oil & Gas	HKD	0.6	0.0	(4.6)	3.3	(10.1)	(12.7)	19.2	(27.1)	460	8.2	7.2	#N/A	N/A	#N/A	N/A
Average			0.2	(4.2)	(6.9)	2.0	6.6	37.3	4.7							
EV																
LG 화학	KRW	349,500	(1.1)	(5.5)	3.2	(14.8)	(10.6)	24.8	(13.7)	22,197	12.9	11.8	1.5	1.4	6.1	5.5
삼성SDI	KRW	226,000	(1.3)	(0.4)	14.1	10.5	11.9	43.0	10.5	13,982	21.3	15.4	1.3	1.2	14.9	11.6
Panasonic	JPY	1523.0	(0.2)	(2.3)	(4.4)	(7.5)	(8.3)	0.3	(7.7)	33,976	13.8	12.1	1.9	1.7	5.3	4.9
GS Yuasa	JPY	501.0	0.4	(2.0)	(11.8)	(13.0)	(11.0)	0.8	(10.7)	1,884	14.1	12.9	1.1	1.1	6.6	6.2
NEC	JPY	3095.0	(0.6)	0.7	1.6	(3.0)	0.8	6.7	1.8	7,331	22.8	13.3	0.9	0.8	7.4	5.6
BYD Auto	CNY	45.8	0.8	(6.7)	(16.1)	(26.9)	(26.2)	(10.2)	(29.6)	18,319	24.0	19.3	2.1	2.0	12.1	10.4
Tesla Motors	USD	347.5	(4.1)	(2.9)	22.2	9.8	4.8	(7.7)	11.6	59,005	#N/A	N/A	152.3	11.4	9.9	64.4
Kandi Technologies	USD	4.6	(5.6)	(8.0)	(24.0)	(11.5)	(37.0)	16.5	(32.4)	235	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			(1.5)	(3.4)	(1.9)	(7.1)	(9.5)	9.3	(8.8)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임