

1. News Summary (3 page)

2018년 2월 21일

News	
WTI comment	재고 감소·달러 강세에 혼조
Headline	아시아-태평양 지역 주요 refinery들의 정기보수 계획 발표 잇따라
News 1.	미국 Westlake Chemical, 에틸렌 capa 증설 검토
News 2.	-
News 3.	-
News 4.	-

Conclusion	
1분기 다수 refinery의 정기보수 진입으로 석유제품 가격 강세 가능	
2017년까지 이어진 화학 호황으로 크래커 증설이 이뤄지는 것	
-	-
-	-
-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	61.9	0.4	4.6	(2.5)	8.9	14.5
Dubai	\$/bbl	62.1	0.5	3.7	(6.1)	2.6	13.6
Gasoline	\$/bbl	76.1	0.7	3.2	(3.8)	1.2	10.0
Diesel	\$/bbl	76.5	0.2	3.3	(4.9)	2.9	13.8
Complex margin	\$/bbl	8.0	(0.1)	(0.1)	0.7	(0.4)	0.4
1M lagging	\$/bbl	3.6	0.0	2.2	(8.5)	(9.8)	(5.6)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	558	(0.5)	3.5	(8.5)	(4.9)	9.2
Butadiene	\$/t	1,355	0.0	0.0	13.9	38.3	(54.8)
HDPE	\$/t	1,350	0.0	0.0	3.1	7.1	13.0
MEG	\$/t	1,015	0.0	0.0	0.5	13.4	16.7
PX	\$/t	952	0.5	2.5	1.2	7.6	5.8
SM	\$/t	1,416	0.0	0.4	5.9	13.7	(0.9)
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.62	2.3	0.8	(13.9)	(15.0)	(17.8)
Natural rubber	\$/t	1,420	0.0	0.0	(5.3)	3.6	(34.6)
Cotton	C/lbs	77.5	2.4	1.5	(5.8)	9.3	5.4

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	02/19	\$/t	1,173	(3.1)	(9.5)	0.6	(1.1)
Propylene	02/19	\$/t	1,015	(1.0)	2.0	25.3	(1.5)
Benzene	02/19	\$/t	895	(1.6)	(5.5)	4.1	(15.2)
Toluene	02/19	\$/t	750	(1.3)	(0.7)	4.9	(2.0)
Xylene	02/19	\$/t	758	(0.3)	2.4	13.1	4.5
PP	02/19	\$/t	1,275	(0.2)	5.6	11.1	15.1
PVC	02/19	\$/t	980	1.0	5.9	15.3	4.3
ABS	02/19	\$/t	2,060	0.0	2.0	6.7	6.2
SBR	02/19	\$/t	1,755	0.0	6.4	10.4	(43.4)
SM	02/19	\$/t	1,438	1.1	4.0	12.3	(3.8)
BPA	02/19	\$/t	1,908	0.8	(2.8)	7.0	22.5
Caustic	02/19	\$/t	549	0.0	(8.7)	(21.6)	28.4
2-EH	02/19	\$/t	1,080	(1.8)	(1.4)	9.1	9.1
Caprolactam	02/19	\$/t	2,060	(0.5)	2.0	1.0	(9.5)
Solar				%	%	%	%
Polysilicon	02/14	\$/kg	16.3	(1.6)	(7.8)	(2.0)	0.4
Module	02/14	\$/W	0.31	0.0	(0.6)	(1.9)	(12.2)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	75.8	(1.0)	(0.7)	(13.1)	(6.0)	(7.4)
Shell	EUR	2,256	(0.2)	(1.2)	(10.4)	(3.2)	8.5
Petrochina	CNY	8.02	0.0	0.2	(10.9)	(2.0)	(4.0)
Gazprom	RUB	141.3	2.2	1.1	(5.2)	8.7	2.0
Petrobras	BRL	20.4	1.9	8.9	11.9	27.6	28.4
Refinery							
Phillips66	USD	91.0	(1.1)	(3.0)	(13.9)	(1.8)	15.7
Valero	USD	91.6	(1.8)	2.3	(5.8)	11.6	39.8
JX	JPY	656.8	(1.7)	1.6	(15.0)	9.1	24.6
Neste Oil	EUR	58.8	1.0	1.3	0.8	17.6	69.7

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	87.1	0.2	1.3	(10.9)	(5.9)	(2.7)
DowDuPont	USD	71.6	(0.5)	1.2	(5.8)	1.1	16.9
SABIC	SAR	105.3	0.2	0.4	(1.0)	6.2	8.2
Formosa Pla.	TWD	101.0	0.0	0.0	0.5	9.2	8.0
Shin-Etsu	JPY	11,320	(1.6)	1.4	(9.1)	(7.3)	14.7
Renewable							
Wacker	EUR	140.6	1.0	0.4	(18.7)	1.4	28.9
First Solar	USD	66.58	1.1	3.7	(4.9)	9.0	91.1
GCL-Poly	HKD	1.22	0.0	1.7	(12.2)	(18.1)	16.2
Tesla Motors	USD	334.8	(0.2)	3.4	(4.4)	8.4	23.0

4. Coverage Summary

	02/20	1D	1W	1M	3M	6M	12M
KOSPI	2,415	(1.1)	0.8	(4.2)	(4.9)	2.6	16.1
KOSPI화학	5,982	(0.9)	2.3	(4.2)	(0.7)	5.4	16.2
LG화학	376,500	(1.8)	3.3	(11.1)	(9.7)	7.9	35.9
롯데케미칼	453,000	0.8	4.0	16.9	26.9	15.4	15.4
한화케미칼	33,450	(0.3)	4.0	(0.9)	10.2	(4.3)	24.3
금호석유화학	90,900	(4.3)	2.0	(14.6)	20.9	17.4	10.2
KCC	363,500	(0.5)	1.8	(9.4)	(5.5)	(8.2)	7.1
OCI	157,500	(1.6)	0.0	(5.4)	19.8	67.9	68.4
SKC	37,750	(0.3)	4.0	(14.5)	(13.2)	1.5	13.9
SK이노베이션	194,500	(1.0)	2.4	0.0	(4.0)	11.8	24.3
S-Oil	119,500	(0.4)	4.4	5.8	(0.4)	2.6	38.3
GS	63,600	(0.6)	1.8	(1.5)	5.3	(8.6)	16.3
SK가스	93,000	1.1	3.1	(4.7)	(3.5)	(13.1)	(14.7)
포스코대우	20,900	(2.3)	3.0	3.7	16.4	(3.9)	(19.0)
LG상사	27,750	(0.4)	0.9	(5.8)	3.0	(1.4)	(18.6)
한국전력	33,800	2.1	0.9	(4.1)	(9.9)	(23.5)	(16.7)
한국가스공사	47,200	0.3	6.2	(1.4)	5.4	1.3	(2.5)

투자의견	TP	%	P/E	P/B
* 추정치는 12M fwd 기준임				
* 모든 coverage 업체의 실적은 연결기준임				
매수	450,000	19.5	12.57	1.77
매수	410,000	(9.5)	12.37	1.36
매수	39,000	16.6	12.77	0.87
매수	150,000	65.0	11.09	1.46
매수	450,000	23.8	13.46	0.54
매수	180,000	14.3	14.80	1.10
매수	55,000	45.7	9.49	0.93
매수	230,000	18.3	10.30	0.98
매수	140,000	17.2	13.66	2.17
매수	80,000	25.8	6.21	0.82
매수	130,000	39.8	8.06	0.62
매수	25,000	19.6	9.53	0.84
매수	38,000	36.9	9.35	0.80
매수	50,000	47.9	7.26	0.27
매수	60,000	27.1	8.92	0.70

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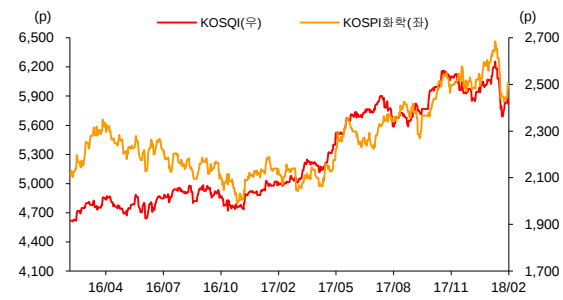
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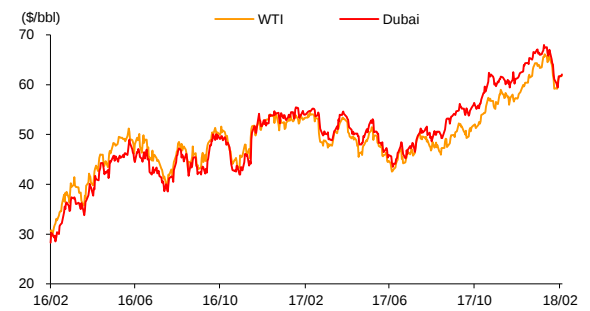
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Key Chart

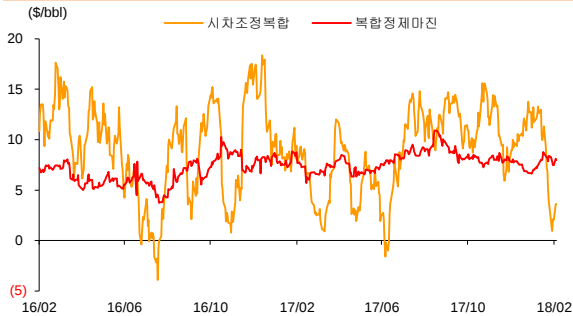
KOSPI/KOSPI화학



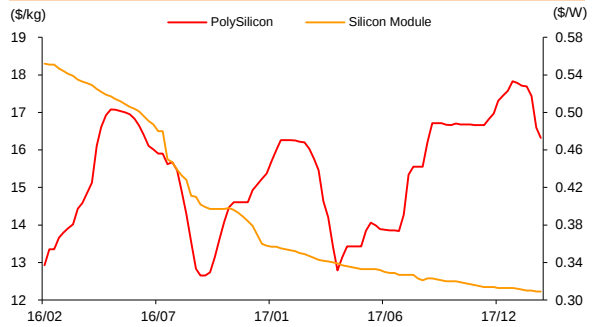
WTI/Dubai



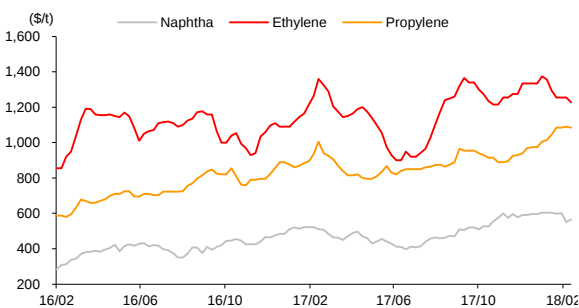
Complex & 1M lagging margin



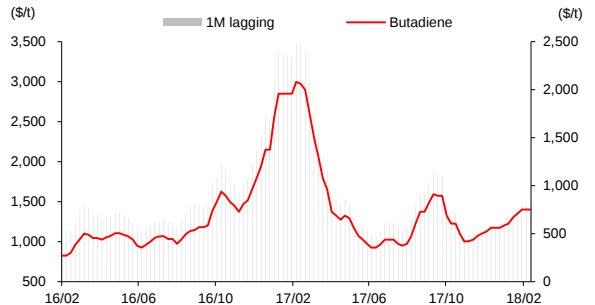
Polysilicon & Module prices



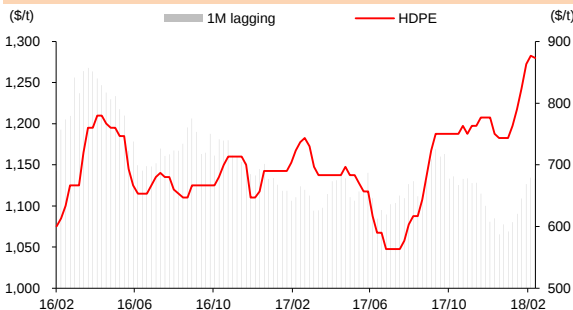
Naphtha/Ethylene/Propylene prices



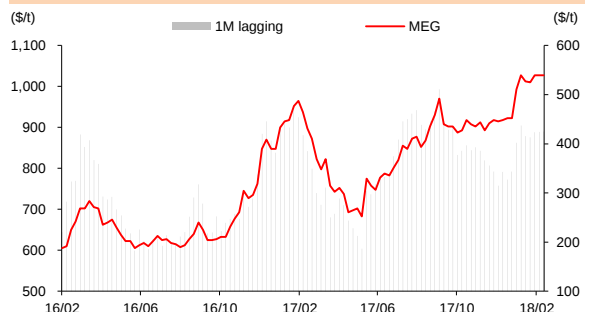
Butadiene price & 1M lagging naphtha spread



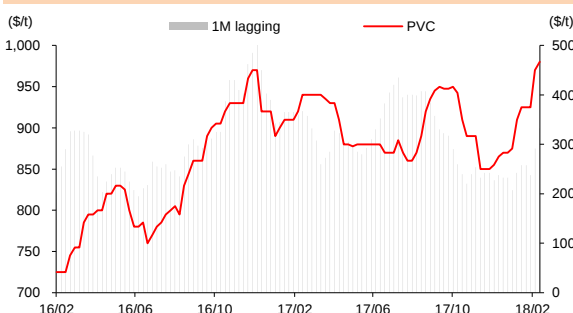
HDPE price & 1M lagging naphtha spread



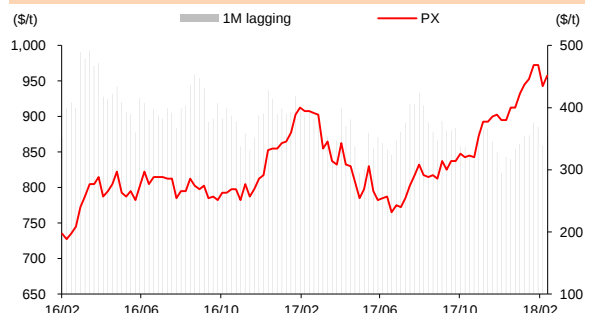
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

News Comment

Headline	(출처: Platts)
제목	아시아-태평양 지역 주요 refinery들의 정기보수 계획 발표 잇따라
결론	1분기 다수 refinery의 정기보수 진입으로 석유제품 가격 강세 가능
세부	1) 아시아-태평양 지역에서 1분기동안 정기보수가 진행될 예정임 2) 중국과 일본을 비롯한 아태지역의 다수 refinery가 정기보수 계획 발표 3) Sinopec Guangzhou는 작년 여름 보수 이후 현재 보수 계획 없음 4) Sinopec Hainan 역시 올해 1월의 정기보수 이후 현재 보수 계획 없음 5) 1분기 다수 refinery의 정기보수 진입으로 석유제품 가격 강세 가능

Issue 1	(출처: Platts)
제목	미국 Westlake Chemical, 에틸렌 capa 증설 검토
결론	2017년까지 이어진 화학 호황으로 크래커 증설이 이뤄지는 것
세부	1) 미국 Westlake Chemical이 PVC 증설에 이어 에틸렌 증설도 검토중임 2) 다운스트림 공장들에 공급되는 에틸렌의 시장 의존성을 줄일 목적임 3) 루이지애나 롯데 크래커에 대한 자본율 10%를 50%까지 늘릴수도 있음 4) 340,195mt의 PVC와 90,178mt의 VCM 증설은 debottlenecking 목적임 5) 2017년까지 이어진 화학 호황으로 크래커 증설이 이뤄지는 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	재고 감소·달러 강세에 혼조
상승	미국 오클라호마의 원유 재고 감소
요인	
하락	달러 강세
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)
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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.811	0.806	0.810	0.818	0.852	0.850	0.942	0.833	0.904	0.887	0.815
	Change, %		0.6	0.1	(1.0)	(4.9)	(4.7)	(14.0)	(2.7)	(10.3)	(8.6)	(0.6)
	USD/JPY	107.3	106.6	107.8	110.8	112.6	109.2	113.1	112.6	108.8	112.1	109.8
	Change, %		0.7	(0.5)	(3.1)	(4.7)	(1.7)	(5.1)	(4.7)	(1.3)	(4.3)	(2.3)
	USD/KRW	1,073.3	1,067.6	1,084.4	1,065.9	1,100.6	1,141.4	1,147.5	1,066.7	1,160.5	1,130.9	1,071.3
	Change, %		0.5	(1.0)	0.7	(2.5)	(6.0)	(6.5)	0.6	(7.5)	(5.1)	0.2
Agriculture	Corn	365.5	367.5	366.8	352.5	345.0	352.0	368.3	350.8	358.5	359.4	357.2
	Change, %		(0.5)	(0.3)	3.7	5.9	3.8	(0.7)	4.2	2.0	1.7	2.3
	Soybean	1,026.5	1,021.5	1,011.8	977.3	990.0	937.5	1,032.5	951.8	987.5	975.9	981.1
	Change, %		0.5	1.5	5.0	3.7	9.5	(0.6)	7.9	3.9	5.2	4.6
	Wheat	449.3	457.8	460.8	422.8	422.0	416.0	441.0	427.0	436.4	436.0	439.9
	Change, %		(1.9)	(2.5)	6.3	6.5	8.0	1.9	5.2	2.9	3.0	2.1
	Rice	11.9	12.0	12.3	12.2	12.4	12.1	9.3	11.7	10.3	11.1	12.1
	Change, %		(1.3)	(3.5)	(2.9)	(4.2)	(2.4)	27.0	1.5	14.6	7.2	(1.7)
	Oats	266.3	267.8	273.5	258.0	255.0	254.8	256.8	241.0	196.3	252.3	260.9
	Change, %		(0.6)	(2.7)	3.2	4.4	4.5	3.7	10.5	35.7	5.5	2.1
MYR/mt	Palm Oil	2,509.0	2,530.0	2,510.0	2,435.0	2,592.0	2,675.0	3,073.0	2,444.0	2,653.8	2,787.3	2,500.0
	Change, %		(0.8)	(0.0)	3.0	(3.2)	(6.2)	(18.4)	2.7	(5.5)	(10.0)	0.4
	Cocoa	2,146.0	2,138.0	1,999.0	1,931.0	2,084.0	1,922.0	2,034.0	1,892.0	2,854.0	2,005.2	1,989.1
	Change, %		0.4	7.4	11.1	3.0	11.7	5.5	13.4	(24.8)	7.0	7.9
	Cotton	77.5	75.7	76.4	83.4	71.4	67.8	73.5	78.6	65.6	73.5	78.9
	Change, %		2.4	1.5	(7.1)	8.6	14.3	5.5	(1.4)	18.2	5.4	(1.7)
	Sugar	13.4	13.4	13.5	13.3	15.0	13.4	20.3	15.2	18.2	15.8	13.8
	Change, %		(0.1)	(0.9)	0.8	(10.8)	(0.4)	(34.2)	(11.9)	(26.4)	(15.5)	(3.5)
	Coffee	118.2	118.0	122.8	121.3	122.9	128.1	147.8	126.2	136.1	133.0	122.7
	Change, %		0.2	(3.7)	(2.5)	(3.8)	(7.7)	(20.0)	(6.3)	(13.1)	(11.1)	(3.7)
Energy	WTI	61.9	61.7	59.2	63.4	56.1	48.5	53.4	60.4	43.4	51.0	62.9
	Change, %		0.4	4.6	(2.3)	10.4	27.6	15.9	2.4	42.7	21.4	(1.7)
	Brent	65.3	65.7	62.7	68.6	62.2	52.7	56.2	66.9	45.1	54.9	67.6
	Change, %		(0.6)	4.0	(4.9)	4.9	23.8	16.1	(2.4)	44.7	19.0	(3.4)
	Natural Gas	2.6	2.6	2.6	3.2	3.0	2.9	2.8	3.0	2.6	3.0	3.0
	Change, %		2.3	0.8	(17.9)	(14.1)	(9.6)	(7.7)	(11.4)	2.5	(13.4)	(11.5)
	Ethanol	1.5	1.5	1.4	1.3	1.4	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		(0.6)	4.2	10.7	5.5	(2.1)	(3.0)	11.7	(2.6)	(1.5)	6.5
	RBOB Gasoline	175.0	175.1	168.5	186.4	174.4	162.4	151.7	179.9	140.0	162.9	182.1
	Change, %		(0.0)	3.9	(6.1)	0.4	7.8	15.4	(2.7)	25.0	7.5	(3.9)
	Coal	105.3	105.3	102.7	106.8	96.3	98.3	80.1	100.8	65.5	88.2	105.0
	Change, %		(0.0)	2.5	(1.4)	9.4	7.1	31.4	4.4	60.8	19.3	0.2
Metal	Gold	1,329.2	1,346.6	1,329.6	1,331.9	1,276.9	1,284.0	1,238.5	1,302.6	1,248.5	1,258.6	1,332.4
	Change, %		(1.3)	(0.0)	(0.2)	4.1	3.5	7.3	2.0	6.5	5.6	(0.2)
	Silver	16.4	16.7	16.6	17.1	16.9	17.0	18.1	16.9	17.1	17.1	16.9
	Change, %		(1.3)	(0.8)	(3.9)	(2.7)	(3.0)	(8.9)	(2.9)	(3.8)	(3.6)	(2.9)
	Copper	7,090.0	7,118.0	6,988.0	7,041.0	6,828.0	6,486.0	6,070.0	7,247.0	4,872.0	6,199.4	7,076.1
	Change, %		(0.4)	1.5	0.7	3.8	9.3	16.8	(2.2)	45.5	14.4	0.2
	Nickel	880.1	875.3	861.9	807.8	758.4	704.0	744.3	809.1	646.4	680.2	839.0
	Change, %		0.5	2.1	9.0	16.0	25.0	18.2	8.8	36.2	29.4	4.9
	Zinc	3,550.0	3,555.0	3,470.0	3,416.5	3,163.0	3,124.0	2,884.0	3,319.0	2,097.5	2,888.5	3,441.9
	Change, %		(0.1)	2.3	3.9	12.2	13.6	23.1	7.0	69.3	22.9	3.1
	Lead	2,597.3	2,584.0	2,567.5	2,591.8	2,460.3	2,346.3	2,308.5	2,482.8	1,868.3	2,315.7	2,588.6
	Change, %		0.5	1.2	0.2	5.6	10.7	12.5	4.6	39.0	12.2	0.3
	Aluminum	14,215.0	14,215.0	14,300.0	14,645.0	15,170.0	16,200.0	13,970.0	15,020.0	12,373.5	14,556.6	14,541.2
	Change, %		0.0	(0.6)	(2.9)	(6.3)	(12.3)	1.8	(5.4)	14.9	(2.3)	(2.2)
	Cobalt	79,253.0	81,000.0	81,264.0	79,369.5	60,750.0	60,296.0	47,750.0	75,205.0	25,480.1	55,906.9	78,665.7
	Change, %		(2.2)	(2.5)	(0.1)	30.5	31.4	66.0	5.4	211.0	41.8	0.7
	HR Coil	748.0	751.0	744.0	675.0	611.0	621.0	615.0	662.0	519.3	620.1	699.8
	Change, %		(0.4)	0.5	10.8	22.4	20.5	21.6	13.0	44.0	20.6	6.9
	Scrap	385.0	380.0	380.0	389.0	343.0	371.0	310.0	367.0	275.7	344.7	376.2
	Change, %		1.3	1.3	(1.0)	12.2	3.8	24.2	4.9	39.7	11.7	2.3

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		02/20	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	61.9	61.7	59.2	63.5	56.8	47.6	54.1	53.7	43.4	50.9	63.0
	Change, %		0.4	4.6	(2.5)	8.9	29.9	14.5	15.2	42.8	21.6	(1.7)
	Dubai	62.1	61.8	59.8	66.1	60.5	50.0	54.6	53.8	41.3	53.1	64.8
	Change, %		0.5	3.7	(6.1)	2.6	24.2	13.6	15.3	50.2	16.9	(4.3)
Crude Oil	Gasoline(휘발유)	76.1	75.6	73.7	79.1	75.2	67.6	69.2	69.8	56.3	68.0	78.1
Product	Change, %		0.7	3.2	(3.8)	1.2	12.6	10.0	8.9	35.2	11.9	(2.5)
	Kerosene(등유)	78.5	78.6	76.2	80.5	74.5	61.9	66.6	66.4	52.9	65.2	80.3
	Change, %		(0.2)	2.9	(2.5)	5.3	26.8	17.8	18.1	48.4	20.3	(2.3)
	Diesel(경유)	76.5	76.3	74.0	80.4	74.3	62.3	67.2	65.5	52.1	65.6	79.4
	Change, %		0.2	3.3	(4.9)	2.9	22.7	13.8	16.7	46.7	16.5	(3.7)
	Bunker-C	56.8	56.9	55.4	59.2	56.2	47.0	49.9	52.1	35.5	49.7	58.1
	Change, %		(0.2)	2.4	(4.1)	0.9	20.8	13.8	9.0	59.7	14.3	(2.4)
	Naphtha	60.7	60.9	58.4	65.8	63.6	50.1	55.7	53.5	42.6	53.7	64.2
	Change, %		(0.4)	3.9	(7.8)	(4.6)	21.1	9.0	13.5	42.5	12.9	(5.4)
Dubai	Gasoline(휘발유)	14.0	13.8	13.9	13.0	14.7	17.6	14.5	16.0	14.9	14.9	13.3
Spread	Change		0.2	0.2	1.0	(0.7)	(3.6)	(0.5)	(2.0)	(0.9)	(0.9)	0.8
	Kerosene(등유)	16.4	16.8	16.4	14.4	14.0	11.9	12.0	12.6	11.6	12.1	15.5
	Change		(0.4)	0.0	2.0	2.4	4.5	4.4	3.8	4.8	4.3	0.9
	Diesel(경유)	14.4	14.5	14.2	14.3	13.8	12.3	12.6	11.7	10.8	12.5	14.6
	Change		(0.1)	0.3	0.1	0.6	2.1	1.9	2.7	3.6	1.9	(0.2)
	Bunker-C	(5.3)	(4.9)	(4.4)	(6.9)	(4.3)	(3.0)	(4.8)	(1.8)	(5.8)	(3.4)	(6.7)
	Change		(0.4)	(0.9)	1.6	(1.0)	(2.3)	(0.5)	(3.5)	0.5	(1.9)	1.4
	Naphtha	(1.4)	(0.9)	(1.5)	(0.3)	3.1	0.1	1.1	(0.4)	1.3	0.6	(0.6)
	Change		(0.5)	0.1	(1.1)	(4.5)	(1.5)	(2.4)	(1.0)	(2.6)	(2.0)	(0.7)
Refining	Simple(단순)	2.7	3.0	3.1	1.6	3.2	3.7	2.5	3.8	1.9	3.2	1.9
Margin	Change		(0.2)	(0.4)	1.1	(0.5)	(0.9)	0.3	(1.1)	0.8	(0.4)	0.8
	Complex(복합)	8.0	8.1	8.1	7.3	8.4	8.7	7.6	8.3	7.0	8.0	7.5
	Change		(0.1)	(0.1)	0.7	(0.4)	(0.7)	0.4	(0.3)	1.0	(0.0)	0.4
	Complex(lagging)	3.6	3.6	1.4	12.1	13.4	10.3	9.2	18.0	8.5	8.9	9.3
	Change		0.0	2.2	(8.5)	(9.8)	(6.7)	(5.6)	(14.4)	(4.9)	(5.3)	(5.7)

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			02/20	02/19	02/15	02/14	02/13	02/12	02/09	02/08	02/07	02/06
Spot Price	Naphtha	CFR Japan	558.3	560.9	562.8	538.5	539.3	543.3	552.3	549.4	560.8	573.1
	Ethylene	CFR SE Asia	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,220.0	1,220.0	1,220.0
	Propylene	FOB Korea	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,060.0	1,080.0	1,065.0	1,065.0
	Butadiene	FOB Korea	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,355.0	1,345.0	1,345.0	1,345.0
	HDPE	CFR FE Asia	1,350.0	1,350.0	1,350.0	1,350.0	1,350.0	1,350.0	1,360.0	1,360.0	1,360.0	1,350.0
	LDPE	CFR FE Asia	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,250.0	1,250.0	1,250.0	1,245.0
	LLDPE	CFR FE Asia	1,200.0	1,200.0	1,200.0	1,200.0	1,200.0	1,210.0	1,220.0	1,220.0	1,220.0	1,220.0
	MEG	CFR China	1,015.0	1,015.0	1,015.0	1,015.0	1,015.0	1,015.0	1,025.0	1,025.0	1,025.0	1,025.0
	PP	CFR FE Asia	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,210.0	1,220.0	1,220.0	1,230.0	1,220.0
	PX	CFR China	952.3	947.3	939.8	932.3	929.3	928.7	931.2	943.0	948.0	946.0
	PTA	CFR China	760.0	760.0	760.0	760.0	760.0	760.0	764.0	763.0	763.0	760.0
	Benzene	FOB Korea	916.7	908.7	894.0	873.0	872.0	874.7	869.7	896.7	899.3	903.0
	Toluene	FOB Korea	735.5	730.5	726.0	712.0	717.0	718.0	721.0	729.0	738.0	742.0
	Xylene	FOB Korea	781.5	781.5	777.0	773.0	774.0	770.0	763.0	769.0	770.0	779.0
	SM	FOB Korea	1,416.0	1,416.0	1,416.0	1,411.0	1,411.0	1,392.0	1,392.0	1,397.0	1,396.0	1,394.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	Naphtha	CFR Japan	565.0	550.5	603.0	574.5	526.5	511.5	484.5	399.5	493.5	589.4
	Change, %			2.6	(6.3)	(1.7)	7.3	10.5	16.6	41.4	14.5	(4.1)
	Ethylene	CFR SE Asia	1,172.5	1,210.0	1,295.0	1,165.0	1,175.0	1,185.0	990.0	1,040.9	1,090.9	1,259.3
	Change, %			(3.1)	(9.5)	0.6	(0.2)	(1.1)	18.4	12.6	7.5	(6.9)
	Propylene	CFR SE Asia	1,015.0	1,025.0	995.0	810.0	795.0	1,030.0	815.0	705.7	823.6	1,058.6
	Change, %			(1.0)	2.0	25.3	27.7	(1.5)	24.5	43.8	23.2	(4.1)
	Butadiene	CFR SE Asia	1,350.0	1,350.0	1,250.0	965.0	1,175.0	2,925.0	2,100.0	1,116.8	1,481.1	1,275.0
	Change, %			0.0	8.0	39.9	14.9	(53.8)	(35.7)	20.9	(8.8)	5.9
	Benzene	CFR SE Asia	895.0	910.0	947.5	860.0	802.5	1,055.0	822.5	646.7	838.8	924.3
	Change, %			(1.6)	(5.5)	4.1	11.5	(15.2)	8.8	38.4	6.7	(3.2)
Spread	Toluene	CFR SE Asia	750.0	760.0	755.0	715.0	695.0	765.0	690.0	630.5	689.5	753.6
	Change, %			(1.3)	(0.7)	4.9	7.9	(2.0)	8.7	19.0	8.8	(0.5)
	Xylene	CFR SE Asia	757.5	760.0	740.0	670.0	652.5	725.0	675.0	627.7	668.8	749.6
	Change, %			(0.3)	2.4	13.1	16.1	4.5	12.2	20.7	13.3	1.0
Spread	Ethylene	-Naphtha	607.5	659.5	692.0	590.5	648.5	673.5	505.5	641.4	597.4	669.9
	Change, %			(7.9)	(12.2)	2.9	(6.3)	(9.8)	20.2	(5.3)	1.7	(9.3)
	Propylene	-Naphtha	450.0	474.5	392.0	235.5	268.5	518.5	330.5	306.2	330.1	469.1
	Change, %			(5.2)	14.8	91.1	67.6	(13.2)	36.2	47.0	36.3	(4.1)
	Butadiene	-Naphtha	785.0	799.5	647.0	390.5	648.5	2,413.5	1,615.5	717.3	987.6	685.6
	Change, %			(1.8)	21.3	101.0	21.0	(67.5)	(51.4)	9.4	(20.5)	14.5
	Benzene	-Naphtha	330.0	359.5	344.5	285.5	276.0	543.5	338.0	247.2	345.3	334.9
	Change, %			(8.2)	(4.2)	15.6	19.6	(39.3)	(2.4)	33.5	(4.4)	(1.5)
	Toluene	-Naphtha	185.0	209.5	152.0	140.5	168.5	253.5	205.5	231.0	196.0	164.1
	Change, %			(11.7)	21.7	31.7	9.8	(27.0)	(10.0)	(19.9)	(5.6)	12.7
	Xylene	-Naphtha	192.5	209.5	137.0	95.5	126.0	213.5	190.5	228.2	175.3	160.2
	Change, %			(8.1)	40.5	101.6	52.8	(9.8)	1.0	(15.7)	9.8	20.2

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	1,280.0	1,282.5	1,217.5	1,197.5	1,187.5	1,177.5	1,142.5	1,134.6	1,142.5	1,239.3
	Change, %			(0.2)	5.1	6.9	7.8	8.7	12.0	12.8	12.0	3.3
	MEG	CFR SE Asia	1,027.5	1,027.5	1,012.5	892.5	917.5	897.5	847.5	660.8	850.6	1,017.9
	Change, %			0.0	1.5	15.1	12.0	14.5	21.2	55.5	20.8	0.9
	PVC	CFR SE Asia	980.0	970.0	925.0	850.0	910.0	940.0	920.0	823.4	899.9	930.0
	Change, %			1.0	5.9	15.3	7.7	4.3	6.5	19.0	8.9	5.4
	PP	CFR SE Asia	1,275.0	1,277.5	1,207.5	1,147.5	1,167.5	1,107.5	1,032.5	978.4	1,099.6	1,234.3
	Change, %			(0.2)	5.6	11.1	9.2	15.1	23.5	30.3	16.0	3.3
	2-EH	CFR Korea	1,080.0	1,100.0	1,095.0	990.0	1,000.0	990.0	865.0	772.4	970.0	1,064.3
	Change, %			(1.8)	(1.4)	9.1	8.0	9.1	24.9	39.8	11.3	1.5
	ABS	CFR SE Asia	2,060.0	2,060.0	2,020.0	1,930.0	1,950.0	1,940.0	1,635.0	1,347.1	1,844.7	2,038.6
	Change, %			0.0	2.0	6.7	5.6	6.2	26.0	52.9	11.7	1.1
	SBR	CFR SE Asia	1,755.0	1,755.0	1,650.0	1,590.0	1,750.0	3,100.0	2,000.0	1,483.0	1,980.5	1,710.0
	Change, %			0.0	6.4	10.4	0.3	(43.4)	(12.3)	18.3	(11.4)	2.6
	SM	CFR SE Asia	1,437.5	1,422.5	1,382.5	1,280.0	1,217.5	1,495.0	1,205.0	1,064.6	1,253.8	1,402.1
	Change, %			1.1	4.0	12.3	18.1	(3.8)	19.3	35.0	14.7	2.5
	Caustic	FOB NEA	549.0	549.0	601.0	700.0	550.0	427.5	422.5	316.6	491.2	574.4
	Change, %			0.0	(8.7)	(21.6)	(0.2)	28.4	29.9	73.4	11.8	(4.4)
	PX	CFR SE Asia	957.5	942.5	952.5	892.5	845.0	907.5	855.0	790.4	844.4	953.6
	Change, %			1.6	0.5	7.3	13.3	5.5	12.0	21.1	13.4	0.4
	PO	CFR China	1,907.5	1,892.5	1,962.5	1,782.5	1,685.0	1,557.5	1,562.5	1,396.8	1,601.2	1,943.2
	Change, %			0.8	(2.8)	7.0	13.2	22.5	22.1	36.6	19.1	(1.8)
	Caprolactam	CFR SE Asia	2,060.0	2,070.0	2,020.0	2,040.0	2,070.0	2,275.0	1,850.0	1,344.9	1,936.4	2,041.4
	Change, %			(0.5)	2.0	1.0	(0.5)	(9.5)	11.4	53.2	6.4	0.9
	PTA	CFR SE Asia	782.5	782.5	745.0	707.5	667.5	702.5	642.5	613.7	667.8	760.7
	Change, %			0.0	5.0	10.6	17.2	11.4	21.8	27.5	17.2	2.9
Spread	HDPE		715.0	732.0	614.5	623.0	661.0	666.0	658.0	735.1	649.0	649.9
	Change, %			(2.3)	16.4	14.8	8.2	7.4	8.7	(2.7)	10.2	10.0
	MEG		462.5	477.0	409.5	318.0	391.0	386.0	363.0	261.3	357.1	428.4
	Change, %			(3.0)	12.9	45.4	18.3	19.8	27.4	77.0	29.5	8.0
	PVC		415.0	419.5	322.0	275.5	383.5	428.5	435.5	423.9	406.4	340.6
	Change, %			(1.1)	28.9	50.6	8.2	(3.2)	(4.7)	(2.1)	2.1	21.9
	PP		710.0	727.0	604.5	573.0	641.0	596.0	548.0	578.9	606.1	644.9
	Change, %			(2.3)	17.5	23.9	10.8	19.1	29.6	22.6	17.1	10.1
	2-EH		515.0	549.5	492.0	415.5	473.5	478.5	380.5	372.9	476.5	474.9
	Change, %			(6.3)	4.7	23.9	8.8	7.6	35.3	38.1	8.1	8.5
	ABS		1,495.0	1,509.5	1,417.0	1,355.5	1,423.5	1,428.5	1,150.5	947.6	1,351.2	1,449.1
	Change, %			(1.0)	5.5	10.3	5.0	4.7	29.9	57.8	10.6	3.2
	SBR	BD spread	405.0	405.0	400.0	625.0	575.0	175.0	(100.0)	366.2	499.4	435.0
	Change, %			0.0	1.3	(35.2)	(29.6)	131.4	(505.0)	10.6	(18.9)	(6.9)
	SM		872.5	872.0	779.5	705.5	691.0	983.5	720.5	665.1	760.3	812.7
	Change, %			0.1	11.9	23.7	26.3	(11.3)	21.1	31.2	14.8	7.4
	Caustic											
	Change, %											
	PX		392.5	392.0	349.5	318.0	318.5	396.0	370.5	390.9	351.0	364.1
	Change, %			0.1	12.3	23.4	23.2	(0.9)	5.9	0.4	11.8	7.8
	PO	propylene spread	892.5	867.5	967.5	972.5	890.0	527.5	747.5	691.1	777.6	884.6
	Change, %			2.9	(7.8)	(8.2)	0.3	69.2	19.4	29.1	14.8	0.9
	Caprolactam	benzene spread	1,165.0	1,160.0	1,072.5	1,180.0	1,267.5	1,220.0	1,027.5	698.2	1,097.6	1,117.1
	Change, %			0.4	8.6	(1.3)	(8.1)	(4.5)	13.4	66.9	6.1	4.3
	PTA	px spread	112.3	122.8	78.3	82.8	76.0	67.3	44.0	60.4	76.7	93.2
	Change, %			(8.6)	43.5	35.6	47.7	66.9	155.1	85.8	46.4	20.4

자료 : Ciscchem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	02/20	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	71.6	(0.5)	1.2	(5.8)	1.1	13.0	16.9	0.6	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	100.3	0.2	2.4	2.2	11.4	21.0	25.0	8.3	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	87.1	0.2	1.3	(10.9)	(5.9)	7.2	(2.7)	(5.1)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	79.0	0.1	2.6	5.6	1.6	2.2	25.3	8.2	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	102.5	2.2	5.2	(4.6)	(3.0)	8.4	6.4	0.9	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	68.2	1.4	3.8	(7.6)	4.3	9.0	1.2	2.9	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	672	(0.4)	2.4	(22.0)	(15.6)	3.4	5.3	(17.0)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,090	(1.3)	3.8	(9.8)	(5.7)	15.6	26.8	(11.9)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	11,320	(1.6)	1.4	(9.1)	(7.3)	17.8	14.7	(1.1)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,341	(1.5)	3.0	(9.6)	(4.2)	7.0	22.5	(7.7)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,380	0.4	0.2	5.6	10.8	16.7	17.9	7.3	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,381	(0.8)	0.4	(16.5)	(23.1)	(13.2)	(12.0)	(16.3)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	105.3	0.2	0.4	(1.0)	6.2	7.3	8.2	3.8	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	66.2	0.3	3.2	2.5	22.0	19.9	16.1	12.2	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	101.0	0.0	0.0	0.5	9.2	8.8	8.0	2.3	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	105.5	0.0	0.0	(1.9)	12.5	14.9	7.9	2.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	76.2	0.0	0.0	(6.0)	1.9	1.7	1.2	(2.2)	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.79	0.0	(1.7)	(15.1)	(11.1)	(14.2)	(15.7)	(8.5)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fiber)	CNY	2.27	0.0	0.9	(22.5)	(24.3)	(29.1)	(41.8)	(15.0)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	921	(0.6)	0.6	(1.1)	0.0	16.9	71.3	1.2	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	107.7	(0.1)	1.2	(2.1)	12.8	14.6	(8.3)	11.0	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	93.5	(0.8)	1.6	(0.5)	19.1	26.8	34.1	10.0	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.1	0.0	1.5	0.0	11.3	12.8	8.3	5.2	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	376,500	(1.8)	3.3	(11.1)	(8.1)	7.9	35.2	(7.0)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	453,000	0.8	4.0	16.9	27.8	15.3	20.0	23.1	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	33,450	(0.3)	4.0	(0.9)	11.7	(5.2)	26.2	5.9	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	90,900	(4.3)	2.0	(14.6)	23.5	17.4	13.8	(8.6)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	37,750	(0.3)	4.0	(14.5)	(9.9)	0.7	15.8	(19.7)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	60,100	3.6	6.0	(6.1)	0.2	9.7	15.4	(4.8)	359	#N/A	N/A	#N/A	N/A	#N/A	N/A
효성	KRW	9,030	(1.3)	(1.0)	2.4	24.9	34.6	6.6	19.1	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			(0.2)	1.9	(5.3)	3.1	9.0	12.3	(0.0)							
Refinery																
Valero	USD	91.6	(1.8)	2.3	(5.8)	11.6	41.4	39.8	(0.4)	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	54.8	0.3	2.9	(8.2)	9.5	27.2	15.4	(0.1)	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemical	TWD	111.5	0.0	0.0	(7.9)	5.7	9.3	3.2	(3.5)	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	94.2	(2.0)	(3.7)	(20.4)	(10.4)	1.5	8.7	(17.6)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	66.3	(2.5)	0.3	(7.8)	7.0	32.2	32.4	0.4	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	34.7	1.6	0.2	(19.1)	(7.4)	14.0	(21.6)	(16.3)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	46.0	(0.9)	1.6	(9.7)	3.8	66.2	53.7	(10.2)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	91.0	(1.1)	(3.0)	(13.9)	(1.8)	11.6	15.7	(10.0)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	26.4	(0.9)	0.5	(23.2)	(5.5)	9.7	(6.2)	(15.1)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	656.8	(1.7)	1.6	(15.0)	9.1	23.0	24.6	(9.7)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,010.0	(0.2)	6.1	(7.8)	14.4	55.2	12.8	(11.4)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	58.8	1.0	1.3	0.8	17.6	69.8	69.7	10.2	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	71.0	(1.7)	0.8	(4.5)	1.2	16.4	19.1	(0.3)	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	45.7	0.8	5.7	1.8	(1.3)	(3.1)	4.0	3.3	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	194,500	(1.0)	2.4	0.0	(2.5)	14.1	26.7	(4.9)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	119,500	(0.4)	4.4	5.8	1.3	5.3	39.6	2.1	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	63,600	(0.6)	1.8	(1.5)	5.1	(6.5)	16.7	2.3	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			(0.7)	1.5	(8.0)	3.4	22.8	20.9	(4.8)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	02/20	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	76	(1.0)	(0.7)	(13.1)	(6.0)	(1.2)	(7.4)	(9.4)	320,961	16.0	16.4	1.7	1.7	7.6	7.7
BP	GBP	475	0.2	(0.2)	(6.8)	(3.5)	8.0	6.7	(9.1)	132,510	14.8	13.9	1.3	1.3	5.3	5.0
Shell	EUR	2,256	(0.2)	(1.2)	(10.4)	(3.2)	6.7	8.5	(9.0)	264,861	13.3	12.5	1.3	1.3	5.8	5.6
Chevron	USD	111	(1.0)	(2.0)	(15.5)	(3.3)	4.2	0.6	(11.4)	210,793	17.7	17.6	1.4	1.4	6.2	6.1
Total	EUR	47	1.5	2.8	(1.5)	0.3	9.3	(2.0)	1.2	145,889	12.3	11.9	1.2	1.2	5.2	5.0
Sinopec	CNY	6	0.0	(0.5)	(10.4)	5.2	6.6	7.3	2.9	114,898	12.0	11.3	1.0	0.9	4.3	4.3
Petrochina	CNY	8	0.0	0.2	(10.9)	(2.0)	0.9	(4.0)	(0.9)	219,007	27.4	15.2	1.2	1.1	5.8	5.1
CNOOC	CNY	11	0.0	(1.5)	(15.0)	(5.5)	(6.2)	(21.0)	(0.5)	64,707	9.1	8.9	1.0	0.9	3.7	3.5
Gazprom	RUB	141	2.2	1.1	(5.2)	8.7	21.8	2.0	8.3	59,253	3.9	4.0	0.3	0.2	3.6	3.5
Rosneft	RUB	322	(0.6)	(1.0)	(1.8)	7.3	7.3	(7.7)	10.5	60,441	7.6	6.7	0.8	0.8	4.6	4.2
Anadarko	USD	59	0.1	3.6	1.8	22.6	40.5	(11.3)	10.5	31,550	47.3	39.6	2.2	2.1	6.6	5.9
Petrobras	BRL	20	1.9	8.9	11.9	27.6	50.3	28.4	27.0	84,895	10.4	8.3	0.8	0.8	5.4	4.9
Lukoil	USD	3,744	0.8	0.4	(2.1)	14.1	32.3	17.7	12.3	56,103	6.5	6.5	0.7	0.7	N/A	N/A
Kinder	USD	17	(0.4)	(2.2)	(10.6)	(0.4)	(8.4)	(21.9)	(5.9)	47,497	21.3	19.2	1.1	1.1	10.4	10.0
Statoil	NOK	178	1.1	2.1	(2.3)	8.2	23.0	20.5	1.4	75,342	15.3	14.5	1.8	1.7	3.4	3.3
BHP	AUD	31	(0.4)	4.7	2.0	15.4	23.3	18.2	5.9	123,464	17.9	18.2	2.1	2.0	6.6	6.6
PTT E&P	THB	113	0.4	(0.9)	(1.7)	22.8	33.7	20.5	13.0	14,235	13.1	12.5	1.1	1.1	3.7	3.5
Petronas gas	MYR	18	(4.6)	0.0	(2.2)	6.8	(5.3)	(13.8)	1.8	9,048	18.6	18.0	2.7	2.6	10.5	10.2
Chesapeake	USD	3	1.5	1.1	(29.9)	(28.4)	(30.1)	(54.6)	(30.1)	2,517	3.4	3.2	#N/A	N/A	5.0	6.1
Noble Energy	USD	29	10.8	14.1	(8.1)	13.0	23.1	(21.4)	(0.1)	14,179	53.4	32.5	1.4	1.4	6.9	5.8
Average		0	0.6	1.4	(6.6)	5.0	12.0	(1.7)	0.9							
PV																
WACKER	EUR	140.6	1.0	0.4	(18.7)	1.4	35.0	28.9	(13.3)	9,048	20.2	17.6	2.1	2.0	7.0	6.7
GCL-Poly	HKD	1.2	0.0	1.7	(12.2)	(18.1)	29.8	16.2	(12.9)	2,899	7.0	6.2	0.7	0.6	5.7	5.2
SunPower	USD	7.5	(2.0)	1.5	(13.4)	(6.1)	(18.9)	(5.1)	(11.2)	1,048	#N/A	N/A	105.5	3.2	2.5	12.9
Canadian Solar	USD	15.7	0.0	(0.6)	(0.4)	(13.2)	(5.4)	11.4	(6.7)	912	8.2	9.0	0.9	0.8	8.8	9.3
JA Solar	USD	7.4	0.5	0.3	(0.9)	(0.7)	19.0	46.0	(0.8)	352	14.1	11.8	1.6	1.6	4.0	3.6
Yingli	USD	1.6	(1.6)	4.3	(16.6)	(28.6)	(36.6)	(41.1)	(6.2)	29	#N/A	N/A	#N/A	N/A	#N/A	N/A
First Solar	USD	66.6	1.1	3.7	(4.9)	9.0	38.5	91.1	(1.4)	6,953	44.3	20.4	1.2	1.2	12.8	7.5
한화큐셀	USD	8.1	(0.3)	5.8	9.5	1.3	9.8	(8.9)	14.7	670	36.6	26.0	#N/A	N/A	8.4	7.6
OCI	KRW	157,500	(1.6)	0.0	(5.4)	26.5	69.7	68.4	15.8	3,502	0.0	15.2	0.0	1.0	0.0	7.2
웅진에너지	KRW	7,550	(1.3)	2.6	(22.5)	(11.0)	(8.4)	58.4	(8.2)	209	N/A	0.0	1.0	0.0	7.2	0.0
신성글라에너지	KRW	1,845	(1.6)	3.9	(18.4)	(3.4)	(13.6)	(2.9)	(3.7)	298	N/A	1.0	0.0	7.2	0.0	7.9
Average			(0.5)	2.1	(9.5)	(3.9)	10.8	23.9	(3.1)							
Gas Company																
Towngas China	HKD	6.5	2.0	3.5	6.8	3.3	26.3	47.6	3.2	2,293	13.3	12.1	1.1	1.1	12.0	10.8
Kulun	HKD	7.3	3.3	3.6	(4.8)	11.7	(1.9)	7.5	(10.7)	7,500	9.8	8.7	1.1	1.0	5.4	5.1
Beijing Enterprise	HKD	43.8	0.3	4.2	(7.9)	(0.2)	9.2	7.9	(5.7)	7,057	7.7	6.8	0.8	0.7	13.8	13.0
ENN Energy	HKD	64.0	0.5	(5.0)	20.2	13.3	23.3	66.2	14.8	8,870	14.3	12.4	2.7	2.3	8.7	7.6
China Resources Gas	HKD	26.7	0.8	4.3	10.8	(3.3)	(8.6)	10.3	(5.8)	7,589	13.9	12.4	2.6	2.3	8.4	7.6
China Gas Holdings	HKD	24.8	2.3	8.1	11.7	9.7	30.3	115.3	14.8	15,748	17.0	14.4	4.1	3.4	13.3	11.5
Shenzen Gas	HKD	16.0	2.6	5.8	3.0	9.8	12.7	40.5	7.3	4,145	11.0	9.8	1.4	1.2	7.8	7.2
Shann Xi	CNY	7.1	0.0	0.1	(11.5)	(11.4)	(17.2)	(25.5)	(15.5)	1,249	12.4	15.8	1.3	1.2	#N/A	N/A
Suntien	HKD	1.9	1.6	7.3	(6.4)	(1.5)	7.3	43.6	(7.7)	907	5.6	4.9	0.6	0.5	8.4	7.3
China Oil & Gas	HKD	0.7	(1.4)	2.9	(11.3)	34.0	39.2	14.5	(16.5)	529	10.9	9.5	#N/A	N/A	#N/A	N/A
Average			1.2	3.5	1.1	6.5	12.1	32.8	(2.2)							
EV																
LG 화학	KRW	376,500	(1.8)	3.3	(11.1)	(8.1)	7.9	35.2	(7.0)	24,779	13.0	12.1	1.6	1.4	6.1	5.7
삼성SDI	KRW	179,500	(1.6)	4.1	(12.0)	(16.3)	1.7	45.3	(12.2)	11,508	12.5	9.8	1.0	0.9	11.6	9.3
Panasonic	JPY	1651.5	0.1	3.6	(2.7)	(2.6)	13.0	32.4	0.1	37,767	16.0	13.9	2.1	1.9	6.1	5.6
GS Yuasa	JPY	591.0	(0.3)	4.0	0.3	2.1	11.7	18.0	5.3	2,279	16.2	14.4	1.3	1.3	7.1	6.6
NEC	JPY	3215.0	0.6	3.2	3.5	10.8	8.6	16.5	5.8	7,807	21.2	15.2	0.9	0.9	7.0	6.4
BYD Auto	CNY	60.5	0.0	1.7	(4.3)	(12.9)	24.6	23.1	(7.0)	25,624	25.7	20.3	2.7	2.4	12.3	10.6
Tesla Motors	USD	334.8	(0.2)	3.4	(4.4)	8.4	(3.7)	23.0	7.5	56,532	#N/A	N/A	108.2	12.3	11.1	41.1
Kandi Technologies	USD	5.4	(6.1)	4.9	(20.0)	(32.1)	47.9	30.1	(20.6)	259	#N/A	N/A	#N/A	N/A	#N/A	N/A
Average			(1.2)	3.5	(6.3)	(6.3)	14.0	27.9	(3.5)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임