Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

1. News Summary (3 page)

2016년 4월 20일

News		Conclusion
WTI comment	쿠웨이트 파업 여파로 유가 상승	
Headline	멕시코 Braskem-Idesa, 프리미엄 PE 5월부터 선적 예정	PE 총 100만톤/년 생산되는 대규모 설비, 지난 해 delay 이후 정상가동
News 1.	AA+ 반납 위기 롯데케미칼, 대규모 채권조달 부담	대규모 차입 상황에서 조달비용 증대는 재무부담으로 연결 가능함
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	41.1	3.3	(2.6)	2.9	54.7	(27.1)
Dubai	$/bbl	39.2	3.8	1.3	5.5	67.7	(34.0)
Gasoline	$/bbl	52.7	1.4	(6.3)	(4.0)	12.1	(31.9)
Diesel	$/bbl	48.1	4.3	0.9	0.2	53.0	(34.7)
Complex margin	$/bbl	5.0	(0.1)	(1.5)	(2.1)	(4.6)	(4.5)
1M lagging	$/bbl	9.1	1.9	(4.1)	(5.9)	12.7	(4.2)
Petrochemical			%	%	%	%	%
Naphtha	$/t	395	2.1	(1.1)	3.7	21.6	(30.4)
Butadiene	$/t	1,000	0.0	0.0	(7.4)	37.0	(2.4)
HDPE	$/t	1,155	0.0	(0.4)	2.7	9.0	(14.4)
MEG	$/t	657	0.2	1.4	(9.6)	15.3	(28.2)
PX	$/t	769	1.7	(0.8)	(0.9)	13.7	(15.8)
SM	$/t	1,031	0.5	(4.7)	(8.1)	18.2	(25.1)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.09	7.6	4.2	7.8	(7.1)	(29.5)
Natural rubber	$/t	1,520	0.7	2.7	12.6	42.1	11.8
Cotton	C/lbs	63.1	1.3	3.5	8.4	0.1	(2.5)

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	04/18	$/t	1,145	(1.3)	(0.4)	14.5	(17.6)
Propylene	04/18	$/t	743	(1.0)	13.4	12.5	(25.0)
Benzene	04/18	$/t	650	2.8	4.0	19.3	(22.6)
Toluene	04/18	$/t	655	0.0	0.8	12.0	(16.6)
Xylene	04/18	$/t	650	0.4	2.4	6.6	(13.3)
PP	04/18	$/t	1,065	(0.5)	8.1	27.5	(16.5)
PVC	04/18	$/t	800	0.0	1.9	11.1	(10.6)
ABS	04/18	$/t	1,335	(0.7)	3.1	21.4	(18.1)
SBR	04/18	$/t	1,445	(0.3)	0.0	20.9	4.7
SM	04/18	$/t	1,103	(1.3)	(3.7)	17.9	(20.5)
BPA	04/18	$/t	1,293	3.2	(4.6)	16.4	(32.3)
Caustic	04/18	$/t	290	1.8	1.8	1.8	(3.3)
2-EH	04/18	$/t	820	0.9	7.9	19.7	(21.9)
Caprolactam	04/18	$/t	1,320	0.8	9.1	5.6	(24.1)
Solar				%	%	%	%
Polysilicon	04/13	$/kg	14.9	1.9	6.7	14.1	(11.0)
Module	04/13	$/W	0.53	(0.4)	(1.8)	(4.0)	(8.4)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	86.2	0.5	2.2	2.4	12.8	(0.8)
Shell	EUR	1,801	(0.2)	2.4	6.1	31.9	(13.8)
Petrochina	CNY	7.65	0.8	0.0	(2.9)	3.1	(42.8)
Gazprom	RUB	156.0	6.6	4.7	3.5	23.8	4.5
Petrobras	BRL	9.6	4.1	6.5	18.5	106.4	(26.1)
Refinery							
Phillips66	USD	86.4	0.9	0.5	(3.3)	9.9	10.8
Valero	USD	60.1	(1.0)	(1.3)	(7.8)	(9.7)	4.4
JX	JPY	463.4	1.8	4.7	1.3	6.8	(10.7)
Neste Oil	EUR	29.9	2.2	(0.5)	(0.9)	13.5	20.6

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	70.0	2.4	7.9	5.9	15.1	(21.4)
Dow Chemical	USD	53.1	1.0	2.8	2.7	26.1	6.8
SABIC	SAR	77.4	3.2	2.4	0.0	18.6	(19.1)
Formosa Pla.	TWD	81.6	0.5	2.6	1.4	8.1	5.0
Shin-Etsu	JPY	6,103	3.2	4.1	1.7	2.0	(19.7)
Renewable							
Wacker	EUR	79.6	2.8	3.4	2.6	21.0	(26.2)
Yingli	USD	4.98	(1.2)	(0.2)	(0.4)	55.1	(75.3)
Tesla	USD	247.4	(2.6)	(0.2)	6.3	20.8	19.6
BYD	CNY	62.4	4.0	7.8	9.6	6.1	9.3

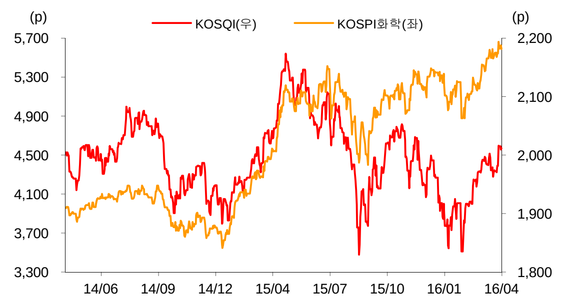
4. Coverage Summary

	04/19	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,011	0.1	1.5	1.0	9.0	(0.9)	(6.2)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,588	(0.7)	0.8	3.1	12.7	9.4	11.6				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	326,500	(3.1)	0.0	4.0	10.7	12.4	24.9	매수	400,000	22.5	12.96	1.71
롯데케미칼	316,500	(1.6)	(2.0)	(2.3)	30.8	18.5	33.5	매수	390,000	23.2	10.70	1.23
한화케미칼	25,850	(0.4)	10.7	9.3	7.0	18.6	77.1	매수	30,000	16.1	10.21	0.84
금호석유화학	70,100	(0.8)	13.6	15.7	45.6	9.5	(17.9)	매수	70,000	(0.1)	13.82	1.39
KCC	421,000	1.2	3.6	1.9	7.1	(4.4)	(22.6)	매수	550,000	30.6	14.98	0.65
OCI	98,900	4.7	(5.8)	5.0	59.5	15.4	(9.3)	매수	100,000	1.1	18.58	0.86
SKC	30,350	1.0	3.1	(1.6)	2.0	(18.7)	(21.1)	매수	43,000	41.7	9.45	0.77
국도화학	68,100	(0.3)	0.6	7.4	24.0	(5.2)	26.6	매수	100,000	46.8	7.75	0.79
SK이노베이션	163,500	(1.5)	(4.7)	2.2	28.7	44.7	44.1	매수	180,000	10.1	12.24	1.00
S-Oil	91,000	(1.1)	(5.7)	1.3	18.8	30.4	22.3	매수	100,000	9.9	12.80	1.58
GS	57,600	(0.7)	(2.5)	7.9	22.0	17.4	30.3	매수	65,000	12.8	8.25	0.96
SK가스	82,600	2.4	0.9	7.7	32.4	(2.7)	(6.7)	매수	100,000	21.1	11.72	0.72
대우인터내셔널	23,500	1.1	(2.5)	0.4	94.2	1.5	(23.5)	매수	24,000	2.1	11.92	1.10
LG상사	36,850	(0.4)	0.4	1.4	34.7	7.7	(5.5)	매수	40,000	8.5	10.88	0.95

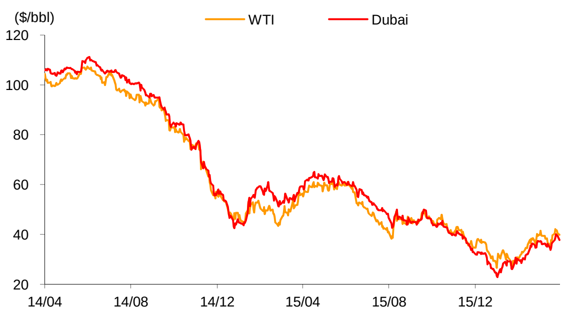
Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

Key Chart

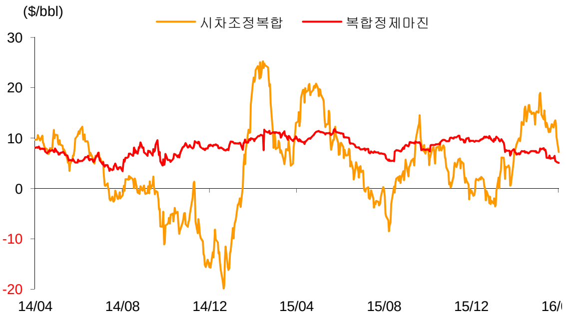
KOSPI/KOSPI화학



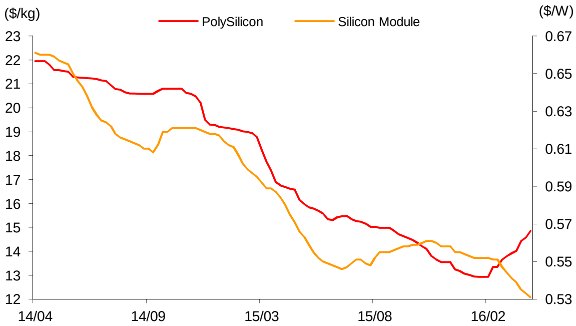
WTI/Dubai



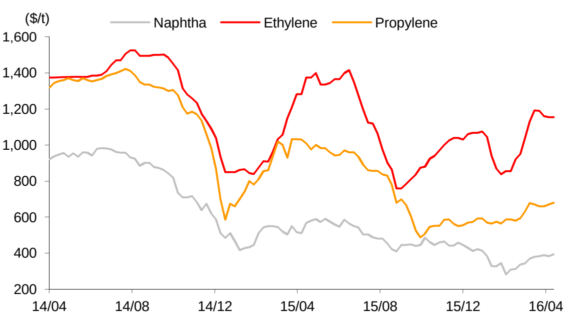
Complex & 1M lagging margin



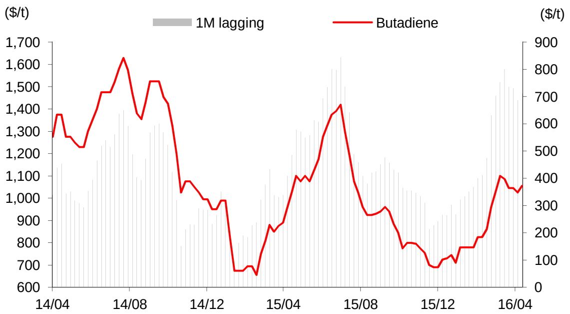
Polysilicon & Module prices



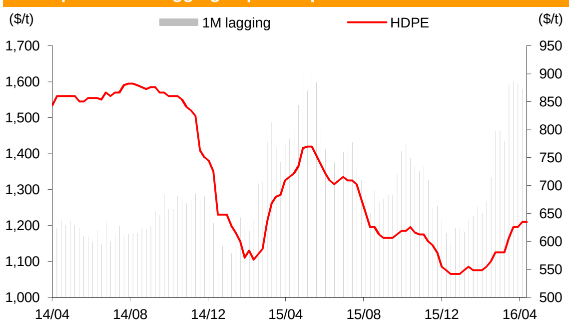
Naphtha/Ethylene/Propylene prices



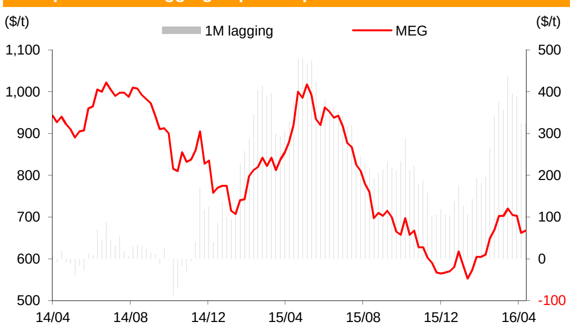
Butadiene price & 1M lagging naphtha spread



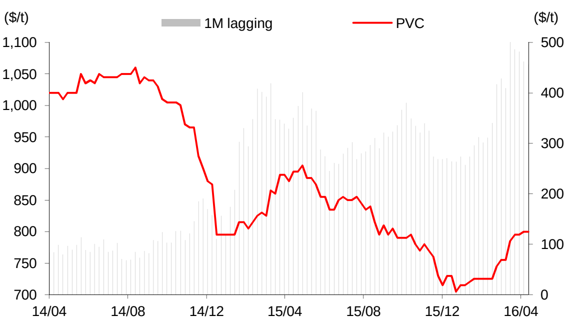
HDPE price & 1M lagging naphtha spread



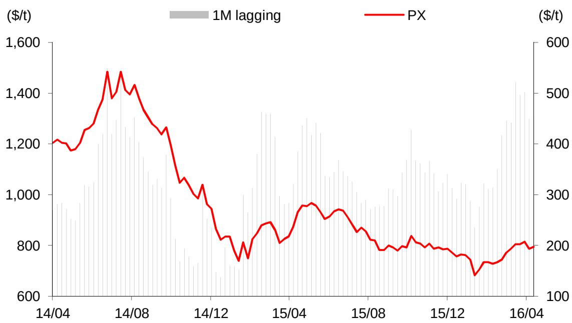
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

News Comment

Headline	(출처: Platts)
제목	멕시코 Braskem-Idesa, 프리미엄 PE 5월부터 선적 예정
결론	PE 총 100만톤/년 생산되는 대규모 설비, 지난 해 delay 이후 정상가동
세부	
	1) 5월부터 기존 계약된 5개 지역으로 전송 시작될 것임
	2) 원재료격인 PE resin은 4월 6일부터 이미 생산 중이었음
	3) 멕시코와 미국, 그리고 남미 쪽이 주로 타겟이 될 전망임
	4) Braskem-Idesa는 브라질 Braskem이 75%, 멕시코 Idesa가 25% 지분 보유
	5) PE 총 100만톤/년 생산되는 대규모 설비, 지난 해 delay 이후 정상가동

WTI Comment	(출처: 연합뉴스)
제목	쿠웨이트 파업 여파로 유가 상승
상승 요인	공공분야 임금개혁안 반대하는 쿠웨이트 석유기업 파업, 생산량 절반
하락 요인	

Issue 1	(출처: 더벨)
제목	AA+ 반납 위기 롯데케미칼, 대규모 채권조달 부담
결론	대규모 차입 상황에서 조달비용 증대는 재무부담으로 연결 가능함
세부	
	1) 한기평, 지난 15일 본평가에서 롯데케미칼(AA+) 신용등급 "부정적" 전망
	2) 한신평과 NICE 역시 지난 해 상반기부터 "부정적" 전망이었음
	3) 2018년 ECC 투자 부담있는 가운데, 삼성화학계열사 인수까지 부담
	4) 현재 5천억원 회사채 발행 계획, 수요예측 결과 따라 최대 6천억원도 고려
	5) 대규모 차입 상황에서 조달비용 증대는 재무부담으로 연결 가능함

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

Issue 3	
제목	
결론	
세부	
	1)
	2)
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	4)
	5)

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

Issue 5	
제목	
결론	
세부	
	1)
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	4)
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Issue 6	
제목	
결론	
세부	
	1)
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	4)
	5)

Analyst 손 지 우
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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2013avg.	2014avg.	2015acc.
F/X	**USD/EUR**	0.880	0.884	0.878	0.887	0.917	0.883	0.925	0.921	0.753	0.754	0.901
	Change, %		(0.4)	0.2	(0.8)	(4.0)	(0.3)	(4.9)	(4.4)	(3.9)	13.7	(2.3)
	USD/JPY	109.2	108.8	108.5	111.6	117.6	119.5	118.9	120.6	97.7	105.9	121.1
	Change, %		0.4	0.6	(2.1)	(7.2)	(8.6)	(8.1)	(9.4)	21.5	13.8	(9.8)
	USD/KRW	1,136.3	1,150.4	1,145.9	1,162.4	1,206.0	1,121.1	1,083.6	1,172.6	1,094.6	1,053.0	1,131.2
	Change, %		(1.2)	(0.8)	(2.3)	(5.8)	1.4	4.9	(3.1)	50.3	3.3	0.5
Agriculture	**Corn**	384.5	381.0	362.8	367.0	367.8	373.0	379.8	358.8	579.2	415.6	376.8
	Change, %		0.9	6.0	4.8	4.6	3.1	1.3	7.2	(39.6)	(5.9)	2.0
	Soybean	985.5	954.3	936.3	897.5	883.5	891.0	968.8	871.3	1,407.0	1,245.5	945.4
	Change, %		3.3	5.3	9.8	11.5	10.6	1.7	13.1	(7.5)	(22.3)	4.2
	Wheat	486.3	472.8	452.5	463.0	474.5	485.8	494.5	470.0	684.3	588.0	508.1
	Change, %		2.9	7.5	5.0	2.5	0.1	(1.7)	3.5	(22.2)	(2.6)	(4.3)
	Rice	10.4	10.3	9.8	10.5	10.9	12.1	9.9	11.6	15.5	14.0	11.1
	Change, %		1.0	5.9	(0.9)	(4.7)	(14.4)	4.6	(10.4)	4.4	(25.9)	(6.3)
	Oats	195.8	190.8	187.5	188.0	207.5	227.0	262.5	217.3	367.5	373.1	250.2
	Change, %		2.6	4.4	4.1	(5.7)	(13.8)	(25.4)	(9.9)	1.9	(14.3)	(21.8)
MYR/mt	**Palm Oil**	2,672.0	2,656.0	2,610.0	2,633.0	2,372.0	2,210.0	2,184.0	2,398.0	2,405.0	2,415.1	2,190.3
	Change, %		0.6	2.4	1.5	12.6	20.9	22.3	11.4	13.3	(12.8)	22.0
	Cocoa	3,043.0	2,995.0	2,932.0	3,118.0	2,934.0	3,169.0	2,839.0	3,211.0	2,403.9	3,006.8	3,091.6
	Change, %		1.6	3.8	(2.4)	3.7	(4.0)	7.2	(5.2)	21.2	7.4	(1.6)
	Cotton	62.7	62.2	61.5	57.2	62.5	63.2	63.3	63.3	83.3	76.4	63.3
	Change, %		0.9	1.9	9.7	0.4	(0.9)	(0.9)	(0.9)	12.6	(28.8)	(0.9)
	Sugar	15.2	15.4	14.1	16.0	14.8	14.3	13.2	15.2	17.5	16.3	13.1
	Change, %		(1.2)	7.8	(5.0)	2.8	6.4	14.6	(0.5)	(15.9)	(11.5)	15.5
	Coffee	125.9	124.0	124.6	133.9	115.7	123.9	138.7	126.7	126.0	177.1	132.6
	Change, %		1.5	1.0	(6.0)	8.8	1.6	(9.3)	(0.7)	(23.0)	50.5	(5.1)
Energy	**WTI**	41.1	39.8	42.2	39.4	28.5	45.9	55.7	37.0	98.0	92.9	48.8
	Change, %		3.3	(2.6)	4.2	44.3	(10.5)	(26.3)	10.9	7.2	(45.9)	(15.9)
	Brent	44.0	42.9	44.7	41.2	28.8	48.6	63.5	37.3	108.7	99.5	53.7
	Change, %		2.6	(1.5)	6.9	53.1	(9.4)	(30.6)	18.1	(0.3)	(48.3)	(18.0)
	Natural Gas	2.1	1.9	2.0	1.9	2.1	2.4	2.6	2.3	3.7	4.3	2.6
	Change, %		7.6	4.2	9.5	(0.1)	(14.5)	(20.7)	(10.7)	26.2	(31.7)	(20.6)
	Ethanol	1.6	1.6	1.5	1.4	1.4	1.5	1.6	1.4	2.3	2.1	1.5
	Change, %		0.6	3.1	9.6	15.2	2.4	(3.3)	11.6	(12.7)	(14.9)	3.5
	RBOB Gasoline	148.0	143.7	153.4	142.7	102.6	125.1	193.0	126.7	285.0	262.6	163.6
	Change, %		3.0	(3.5)	3.7	44.2	18.3	(23.3)	16.8	(0.9)	(48.5)	(9.5)
	Coal	43.6	43.6	43.6	43.5	43.2	41.9	49.4	43.3	56.1	57.5	45.2
	Change, %		0.0	0.0	0.4	0.9	4.1	(11.6)	0.7	(1.0)	(15.5)	(3.5)
Metal	**Gold**	1,250.2	1,232.5	1,255.5	1,255.3	1,087.3	1,170.7	1,204.3	1,061.4	1,410.4	1,266.5	1,160.6
	Change, %		1.4	(0.4)	(0.4)	15.0	6.8	3.8	17.8	(28.0)	(1.3)	7.7
	Silver	16.9	16.2	16.2	15.8	14.0	15.8	16.3	13.8	23.8	19.1	15.7
	Change, %		4.4	4.6	7.2	20.7	6.9	4.1	22.6	(35.8)	(18.9)	7.7
	Platinum	1,013.7	978.0	1,000.4	972.5	826.9	1,012.8	1,170.8	891.1	1,485.7	1,384.6	1,055.7
	Change, %		3.6	1.3	4.2	22.6	0.1	(13.4)	13.8	(11.2)	(11.5)	(4.0)
	Palladium	584.7	566.2	546.4	589.3	494.9	684.7	786.5	563.0	725.9	803.4	691.9
	Change, %		3.3	7.0	(0.8)	18.2	(14.6)	(25.7)	3.9	1.7	11.4	(15.5)
	Copper	4,936.0	4,827.0	4,766.5	5,042.0	4,408.0	5,206.0	6,060.0	4,705.0	7,352.6	6,828.1	5,503.1
	Change, %		2.3	3.6	(2.1)	12.0	(5.2)	(18.5)	4.9	(7.2)	(14.4)	(10.3)
	Uranium	27.5	27.0	28.3	29.8	34.9	37.7	38.9	34.4	38.5	33.5	36.9
	Change, %		1.9	(2.7)	(7.6)	(21.1)	(27.0)	(29.3)	(20.1)	(20.9)	2.5	(25.4)
	HR Coil	487.0	479.0	478.0	418.0	395.0	420.0	455.0	391.0	630.4	653.2	461.5
	Change, %		1.7	1.9	16.5	23.3	16.0	7.0	24.6	3.1	(10.4)	5.5
	Scrap	410.0	410.0	410.0	405.0	250.0	190.0	250.0	250.0	396.9	401.3	252.9
	Change, %		0.0	0.0	1.2	64.0	115.8	64.0	64.0	(1.2)	(16.5)	62.1
	Zinc	1,937.0	1,894.0	1,833.0	1,843.0	1,506.5	1,794.0	2,213.0	1,609.0	1,940.3	2,165.0	1,941.9
	Change, %		2.3	5.7	5.1	28.6	8.0	(12.5)	20.4	(1.2)	6.0	(0.3)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

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Refining Price Data

Daily Price		04/19	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	**WTI**	41.1	39.8	42.2	39.9	26.6	45.4	56.4	37.0	93.1	48.8	34.6
	Change, %		*3.3*	*(2.6)*	*2.9*	*54.7*	*(9.5)*	*(27.1)*	*10.9*	*(55.9)*	*(15.8)*	*18.8*
	Dubai	39.2	37.7	38.7	37.1	23.4	43.7	59.3	32.2	96.7	50.8	31.7
	Change, %		*3.8*	*1.3*	*5.5*	*67.7*	*(10.4)*	*(34.0)*	*21.7*	*(59.5)*	*(22.9)*	*23.5*
Crude Oil Product	**Gasoline(휘발유)**	52.7	52.0	56.3	54.9	47.0	61.3	77.5	54.8	110.9	69.5	50.3
	Change, %		*1.4*	*(6.3)*	*(4.0)*	*12.1*	*(14.0)*	*(31.9)*	*(3.8)*	*(52.5)*	*(24.2)*	*4.8*
	Kerosene(등유)	49.2	47.6	49.3	50.2	33.1	56.9	73.8	44.2	112.6	64.7	43.4
	Change, %		*3.4*	*(0.2)*	*(1.9)*	*48.5*	*(13.5)*	*(33.3)*	*11.3*	*(56.3)*	*(24.0)*	*13.5*
	Diesel(경유)	48.1	46.1	47.7	48.1	31.5	57.4	73.8	43.2	112.8	64.8	41.4
	Change, %		*4.3*	*0.9*	*0.2*	*53.0*	*(16.2)*	*(34.7)*	*11.4*	*(57.3)*	*(25.7)*	*16.3*
	Bunker-C	29.1	28.1	29.7	27.8	20.1	36.5	54.8	25.3	86.5	45.3	25.3
	Change, %		*3.4*	*(2.2)*	*4.7*	*45.1*	*(20.3)*	*(46.9)*	*15.0*	*(66.4)*	*(35.7)*	*14.9*
	Naphtha	42.2	40.8	43.0	39.7	33.8	46.5	61.8	43.5	94.3	52.6	37.5
	Change, %		*3.4*	*(1.9)*	*6.1*	*24.7*	*(9.4)*	*(31.8)*	*(3.0)*	*(55.3)*	*(19.9)*	*12.3*
Dubai Spread	**Gasoline(휘발유)**	13.5	14.2	17.6	17.8	23.7	17.6	18.1	22.6	14.2	18.7	18.6
	Change		*(0.7)*	*(4.1)*	*(4.2)*	*(10.1)*	*(4.0)*	*(4.6)*	*(9.1)*	*(0.7)*	*(5.2)*	*(5.1)*
	Kerosene(등유)	10.0	9.8	10.6	13.0	9.8	13.2	14.5	12.0	15.9	14.0	11.7
	Change		*0.2*	*(0.6)*	*(3.0)*	*0.3*	*(3.1)*	*(4.4)*	*(2.0)*	*(5.8)*	*(3.9)*	*(1.6)*
	Diesel(경유)	9.0	8.4	9.0	10.9	8.1	13.7	14.4	11.0	16.0	14.0	9.7
	Change		*0.6*	*(0.1)*	*(2.0)*	*0.9*	*(4.8)*	*(5.4)*	*(2.1)*	*(7.1)*	*(5.0)*	*(0.7)*
	Bunker-C	(10.1)	(9.6)	(8.9)	(9.4)	(3.3)	(7.2)	(4.5)	(6.9)	(10.3)	(5.5)	(6.4)
	Change		*(0.5)*	*(1.2)*	*(0.7)*	*(6.8)*	*(2.9)*	*(5.6)*	*(3.2)*	*0.2*	*(4.6)*	*(3.7)*
	Naphtha	3.0	3.0	4.3	2.6	10.5	2.8	2.4	11.3	(2.4)	1.8	5.8
	Change		*(0.0)*	*(1.3)*	*0.4*	*(7.5)*	*0.2*	*0.5*	*(8.3)*	*5.4*	*1.2*	*(2.8)*
Refining Margin	**Simple(단순)**	(0.7)	(0.5)	0.5	0.9	4.2	2.5	3.7	3.2	(0.1)	3.3	2.3
	Change		*(0.2)*	*(1.2)*	*(1.6)*	*(4.9)*	*(3.1)*	*(4.3)*	*(3.8)*	*(0.6)*	*(4.0)*	*(3.0)*
	Complex(복합)	5.0	5.1	6.5	7.2	9.6	8.6	9.5	9.7	7.1	9.3	7.8
	Change		*(0.1)*	*(1.5)*	*(2.1)*	*(4.6)*	*(3.6)*	*(4.5)*	*(4.7)*	*(2.1)*	*(4.3)*	*(2.8)*
	Complex(lagging)	9.1	7.3	13.2	15.1	(3.6)	6.6	13.3	2.3	2.2	6.5	8.1
	Change		*1.9*	*(4.1)*	*(5.9)*	*12.7*	*2.6*	*(4.2)*	*6.8*	*6.9*	*2.7*	*1.1*

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

Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

Petrochemical Price Data

Daily Price			04/19	04/18	04/15	04/14	04/13	04/12	04/11	04/08	04/07	04/06
Spot Price	**Naphtha**	CFR Japan	395.0	386.9	392.6	399.9	402.0	399.3	394.8	382.5	376.5	370.3
	Ethylene	CFR SE Asia	1,170.0	1,170.0	1,170.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0	1,155.0	1,155.0
	Propylene	FOB Korea	675.0	675.0	675.0	675.0	675.0	675.0	675.0	675.0	675.0	645.0
	Butadiene	FOB Korea	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	960.0	960.0
	HDPE	CFR FE Asia	1,155.0	1,155.0	1,190.0	1,190.0	1,190.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0
	LDPE	CFR FE Asia	1,195.0	1,195.0	1,205.0	1,205.0	1,205.0	1,180.0	1,180.0	1,180.0	1,195.0	1,220.0
	LLDPE	CFR FE Asia	1,130.0	1,155.0	1,155.0	1,170.0	1,170.0	1,160.0	1,160.0	1,160.0	1,170.0	1,180.0
	MEG	CFR China	657.0	656.0	665.0	661.0	657.0	648.0	650.0	660.0	667.0	673.0
	PP	CFR FE Asia	980.0	985.0	995.0	995.0	1,010.0	1,000.0	1,010.0	1,010.0	1,015.0	1,020.0
	PX	CFR China	768.8	756.0	774.3	782.3	781.3	775.3	772.3	769.3	773.2	770.3
	PTA	CFR China	610.0	610.0	618.0	617.0	617.0	612.0	611.0	610.0	615.0	618.0
	Benzene	FOB Korea	628.0	621.0	640.0	641.0	650.0	648.0	640.0	639.0	631.0	630.0
	Toluene	FOB Korea	599.5	587.5	602.0	597.0	603.0	603.0	606.0	612.0	614.0	621.0
	Xylene	FOB Korea	645.0	645.0	651.0	651.0	672.0	656.0	656.0	646.0	646.0	633.0
	SM	FOB Korea	1,030.5	1,025.0	1,056.0	1,065.0	1,062.0	1,081.0	1,081.0	1,087.0	1,082.0	1,093.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**Naphtha**	CFR Japan	395.0	383.5	381.0	328.0	412.5	567.5	413.5	865.9	493.0	355.4
	Change, %			*3.0*	*3.7*	*20.4*	*(4.2)*	*(30.4)*	*(4.5)*	*(54.4)*	*(19.9)*	*11.2*
	Ethylene	CFR SE Asia	1,145.0	1,160.0	1,150.0	1,000.0	1,100.0	1,390.0	1,090.0	1,401.1	1,103.7	1,042.5
	Change, %			*(1.3)*	*(0.4)*	*14.5*	*4.1*	*(17.6)*	*5.0*	*(18.3)*	*3.7*	*9.8*
	Propylene	CFR SE Asia	742.5	750.0	655.0	660.0	650.0	990.0	650.0	1,254.2	770.0	616.6
	Change, %			*(1.0)*	*13.4*	*12.5*	*14.2*	*(25.0)*	*14.2*	*(40.8)*	*(3.6)*	*20.4*
	Butadiene	CFR SE Asia	1,015.0	985.0	1,045.0	740.0	680.0	980.0	720.0	1,281.7	877.5	878.1
	Change, %			*3.0*	*(2.9)*	*37.2*	*49.3*	*3.6*	*41.0*	*(20.8)*	*15.7*	*15.6*
	Benzene	CFR SE Asia	650.0	632.5	625.0	545.0	567.5	840.0	580.0	1,243.1	690.0	588.8
	Change, %			*2.8*	*4.0*	*19.3*	*14.5*	*(22.6)*	*12.1*	*(47.7)*	*(5.8)*	*10.4*
	Toluene	CFR SE Asia	655.0	655.0	650.0	585.0	625.0	785.0	630.0	1,082.5	700.8	617.8
	Change, %			*0.0*	*0.8*	*12.0*	*4.8*	*(16.6)*	*4.0*	*(39.5)*	*(6.5)*	*6.0*
	Xylene	CFR SE Asia	650.0	647.5	635.0	610.0	655.0	750.0	625.0	1,055.7	699.3	610.5
	Change, %			*0.4*	*2.4*	*6.6*	*(0.8)*	*(13.3)*	*4.0*	*(38.4)*	*(7.0)*	*6.5*
Spread	**Ethylene**	-Naphtha	750.0	776.5	769.0	672.0	687.5	822.5	676.5	535.2	610.6	687.1
	Change, %			*(3.4)*	*(2.5)*	*11.6*	*9.1*	*(8.8)*	*10.9*	*40.1*	*22.8*	*9.2*
	Propylene	-Naphtha	347.5	366.5	274.0	332.0	237.5	422.5	236.5	388.3	277.0	261.2
	Change, %			*(5.2)*	*26.8*	*4.7*	*46.3*	*(17.8)*	*46.9*	*(10.5)*	*25.5*	*33.0*
	Butadiene	-Naphtha	620.0	601.5	664.0	412.0	267.5	412.5	306.5	415.9	384.5	522.8
	Change, %			*3.1*	*(6.6)*	*50.5*	*131.8*	*50.3*	*102.3*	*49.1*	*61.3*	*18.6*
	Benzene	-Naphtha	255.0	249.0	244.0	217.0	155.0	272.5	166.5	377.3	197.0	233.4
	Change, %			*2.4*	*4.5*	*17.5*	*64.5*	*(6.4)*	*53.2*	*(32.4)*	*29.5*	*9.3*
	Toluene	-Naphtha	260.0	271.5	269.0	257.0	212.5	217.5	216.5	216.6	207.8	262.4
	Change, %			*(4.2)*	*(3.3)*	*1.2*	*22.4*	*19.5*	*20.1*	*20.0*	*25.1*	*(0.9)*
	Xylene	-Naphtha	255.0	264.0	254.0	282.0	242.5	182.5	211.5	189.9	206.3	255.1
	Change, %			*(3.4)*	*0.4*	*(9.6)*	*5.2*	*39.7*	*20.6*	*34.3*	*23.6*	*(0.0)*

자료 : Cischem, Platts, Bloomberg, SK증권
참고 : Spread는 Polymer와 Naphtha의 가격차이임

Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	HDPE	CFR SE Asia	1,210.0	1,210.0	1,165.0	1,085.0	1,065.0	1,345.0	1,065.0	1,524.9	1,230.1	1,124.1
	Change, %			0.0	3.9	11.5	13.6	(10.0)	13.6	(20.6)	(1.6)	7.6
	MEG	CFR SE Asia	667.5	662.5	720.0	552.5	570.0	920.0	617.5	934.1	780.8	645.6
	Change, %			0.8	(7.3)	20.8	17.1	(27.4)	8.1	(28.5)	(14.5)	3.4
	PVC	CFR SE Asia	800.0	800.0	785.0	720.0	730.0	895.0	715.0	1,013.9	820.8	750.3
	Change, %			0.0	1.9	11.1	9.6	(10.6)	11.9	(21.1)	(2.5)	6.6
	PP	CFR SE Asia	1,065.0	1,070.0	985.0	835.0	835.0	1,275.0	835.0	1,503.0	1,109.8	912.5
	Change, %			(0.5)	8.1	27.5	27.5	(16.5)	27.5	(29.1)	(4.0)	16.7
	2-EH	CFR Korea	820.0	812.5	760.0	685.0	680.0	1,050.0	680.0	1,397.1	930.1	728.4
	Change, %			0.9	7.9	19.7	20.6	(21.9)	20.6	(41.3)	(11.8)	12.6
	ABS	CFR SE Asia	1,335.0	1,345.0	1,295.0	1,100.0	1,080.0	1,630.0	1,130.0	1,897.7	1,431.1	1,204.4
	Change, %			(0.7)	3.1	21.4	23.6	(18.1)	18.1	(29.7)	(6.7)	10.8
	SBR	CFR SE Asia	1,445.0	1,450.0	1,445.0	1,195.0	1,085.0	1,380.0	1,150.0		1,332.1	1,291.9
	Change, %			(0.3)	0.0	20.9	33.2	4.7	25.7		8.5	11.9
	SM	CFR SE Asia	1,102.5	1,117.5	1,145.0	935.0	900.0	1,387.5	910.0	1,547.1	1,100.7	1,032.8
	Change, %			(1.3)	(3.7)	17.9	22.5	(20.5)	21.2	(28.7)	0.2	6.7
	Caustic	FOB NEA	290.0	285.0	285.0	285.0	285.0	300.0	285.0	310.0	296.8	285.9
	Change, %			1.8	1.8	1.8	1.8	(3.3)	1.8	(6.5)	(2.3)	1.4
	PX	CFR SE Asia	795.0	787.5	805.0	682.5	757.5	930.0	762.5	1,228.5	842.9	758.8
	Change, %			1.0	(1.2)	16.5	5.0	(14.5)	4.3	(35.3)	(5.7)	4.8
	PO	CFR China	1,292.5	1,252.5	1,355.0	1,110.0	1,372.5	1,910.0	1,257.5	2,179.2	1,683.4	1,209.7
	Change, %			3.2	(4.6)	16.4	(5.8)	(32.3)	2.8	(40.7)	(23.2)	6.8
	Caprolactam	CFR SE Asia	1,320.0	1,310.0	1,210.0	1,250.0	1,285.0	1,740.0	1,260.0	2,233.4	1,581.5	1,215.0
	Change, %			0.8	9.1	5.6	2.7	(24.1)	4.8	(40.9)	(16.5)	8.6
	PTA	CFR SE Asia	625.0	622.5	610.0	562.5	587.5	735.0	585.0	911.7	648.0	591.1
	Change, %			0.4	2.5	11.1	6.4	(15.0)	6.8	(31.4)	(3.6)	5.7
Spread	HDPE		815.0	826.5	784.0	757.0	652.5	777.5	651.5	659.0	737.1	768.7
	Change, %			(1.4)	4.0	7.7	24.9	4.8	25.1	23.7	10.6	6.0
	MEG		272.5	279.0	339.0	224.5	157.5	352.5	204.0	68.2	287.8	290.3
	Change, %			(2.3)	(19.6)	21.4	73.0	(22.7)	33.6	299.4	(5.3)	(6.1)
	PVC		405.0	416.5	404.0	392.0	317.5	327.5	301.5	148.0	327.8	394.9
	Change, %			(2.8)	0.2	3.3	27.6	23.7	34.3	173.6	23.6	2.5
	PP		670.0	686.5	604.0	507.0	422.5	707.5	421.5	637.1	616.8	557.1
	Change, %			(2.4)	10.9	32.1	58.6	(5.3)	59.0	5.2	8.6	20.3
	2-EH		425.0	429.0	379.0	357.0	267.5	482.5	266.5	531.3	437.0	373.1
	Change, %			(0.9)	12.1	19.0	58.9	(11.9)	59.5	(20.0)	(2.8)	13.9
	ABS		940.0	961.5	914.0	772.0	667.5	1,062.5	716.5	1,031.9	938.1	849.0
	Change, %			(2.2)	2.8	21.8	40.8	(11.5)	31.2	(8.9)	0.2	10.7
	SBR	BD spread	430.0	465.0	400.0	455.0	405.0	400.0	430.0		454.7	413.8
	Change, %			(7.5)	7.5	(5.5)	6.2	7.5	0.0		(5.4)	3.9
	SM		707.5	734.0	764.0	607.0	487.5	820.0	496.5	681.2	607.7	677.4
	Change, %			(3.6)	(7.4)	16.6	45.1	(13.7)	42.5	3.9	16.4	4.4
	Caustic											
	Change, %											
	PX		400.0	404.0	424.0	354.5	345.0	362.5	349.0	362.6	349.9	403.4
	Change, %			(1.0)	(5.7)	12.8	15.9	10.3	14.6	10.3	14.3	(0.8)
	PO	propylene sprea	550.0	502.5	700.0	450.0	722.5	920.0	607.5	925.0	913.4	593.1
	Change, %			9.5	(21.4)	22.2	(23.9)	(40.2)	(9.5)	(40.5)	(39.8)	(7.3)
	Caprolactam	benzene spread	670.0	677.5	585.0	705.0	717.5	900.0	680.0	990.3	891.6	626.3
	Change, %			(1.1)	14.5	(5.0)	(6.6)	(25.6)	(1.5)	(32.3)	(24.9)	7.0
	PTA	px spread	68.5	71.3	46.5	84.8	57.3	84.0	51.3	51.8	58.0	60.0
	Change, %			(3.9)	47.3	(19.2)	19.7	(18.5)	33.7	32.4	18.1	14.2

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

Global peers

	Currency	04/19	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	15	16E	15	16E	15	16E
Petrochemical																
Dow Chemical	USD	53.1	1.0	2.8	2.7	26.1	11.9	6.8	3.0	59,513	15.5	13.4	2.5	2.4	8.1	7.4
Du Pont	USD	65.7	1.5	2.1	1.3	23.4	15.1	(3.4)	(1.4)	57,349	21.7	18.8	6.2	5.1	11.8	10.5
Eastman	USD	76.7	2.6	4.7	4.4	25.3	11.2	1.1	13.6	11,347	10.9	9.9	2.4	2.1	8.2	7.8
BASF	EUR	70.0	2.4	7.9	5.9	15.1	(1.8)	(21.4)	(1.0)	73,154	16.0	14.3	2.1	2.0	7.9	7.3
Akzo Nobel	EUR	63.8	5.3	9.1	10.7	10.3	5.5	(9.8)	3.4	18,056	15.3	14.5	2.3	2.2	8.3	7.9
Arkema	EUR	71.0	2.0	4.5	10.6	29.0	12.0	(0.3)	9.9	6,017	14.8	12.4	1.4	1.3	6.1	5.7
Lanxess	EUR	45.8	2.8	8.0	8.4	21.8	0.7	(6.3)	7.3	4,766	20.6	16.4	1.7	1.6	6.0	5.5
Sumitomo Chemical	JPY	493	2.9	5.6	(2.2)	(12.9)	(27.1)	(24.0)	(29.7)	7,479	8.8	7.8	0.9	0.8	7.0	6.5
Mitsubishi Chemical	JPY	572	4.6	6.7	(5.3)	(14.7)	(18.5)	(21.6)	(26.1)	7,897	9.3	8.1	0.8	0.8	5.7	5.4
Shin-Etsu Chemical	JPY	6,103	3.2	4.1	1.7	2.0	(7.2)	(19.7)	(7.8)	24,165	17.3	16.1	1.2	1.2	6.0	5.6
Asahi Kasei	JPY	770	4.8	6.9	7.9	1.9	5.5	(30.6)	(6.5)	9,894	11.3	10.1	0.9	0.8	5.6	5.3
JSR	JPY	1,566	2.9	11.1	(7.2)	(7.1)	(15.5)	(27.8)	(17.5)	3,244	12.1	11.1	0.9	0.9	4.9	4.5
Nitto Denko	JPY	6,196	3.1	3.5	(7.6)	(13.5)	(18.7)	(19.1)	(30.5)	9,865	13.1	12.6	1.4	1.3	5.5	5.3
SABIC	SAR	77.4	3.2	2.4	0.0	18.6	(14.6)	(19.1)	1.2	61,937	16.4	13.8	1.4	1.3	7.7	6.7
Yansab	SAR	40.1	2.7	1.5	3.3	43.2	(17.6)	(22.1)	23.7	6,014	17.0	14.8	1.5	1.4	8.7	8.1
Formosa Plastics	TWD	81.6	0.5	2.6	1.4	8.1	6.0	5.0	6.0	16,151	16.8	15.5	1.7	1.6	25.1	22.7
Formosa Fiber	TWD	86.0	1.3	6.2	7.8	22.7	14.7	13.9	16.2	15,673	18.1	17.5	1.6	1.6	14.5	14.0
Nan Ya Plastics	TWD	66.0	(0.5)	1.1	(1.6)	17.2	0.2	(10.0)	8.2	16,275	15.1	15.0	1.5	1.5	15.4	14.7
Sinopec Shanghai	CNY	7.37	1.2	(2.8)	12.7	32.6	(2.4)	9.3	13.7	10,077	20.5	21.2	3.5	3.1	10.1	10.3
Sinopec Yizheng(Fibe	CNY	5.02	(0.2)	(1.0)	(1.0)	(20.9)	(54.6)	(43.9)	(38.5)	9,841	#N/A N/A	295.3	2.9	2.9	18.8	15.8
Reliance	INR	1,065	0.0	1.7	3.7	2.0	10.5	14.9	4.9	51,892	11.7	10.2	1.3	1.1	8.7	7.4
Industries Qatar	QAR	105.3	(0.5)	(0.8)	(2.4)	13.0	(16.8)	(26.6)	(5.2)	17,494	14.2	13.1	1.9	1.8	53.9	51.7
PTT Chemical	THB	61.0	0.4	3.4	2.5	29.1	2.5	(1.6)	22.0	7,809	11.1	10.0	1.1	1.0	5.5	5.2
Petronas	MYR	6.7	(0.6)	0.1	(3.3)	(7.0)	3.9	16.1	(8.0)	13,904	18.6	17.2	2.1	1.9	9.3	8.5
LG화학	KRW	326,500	(3.1)	0.0	4.0	6.4	12.4	24.9	(0.6)	19,180	0.0	15.8	0.0	1.7	0.0	6.3
롯데케미칼	KRW	316,500	(1.6)	(2.0)	(2.3)	24.1	18.5	33.5	30.0	9,616	0.0	8.1	0.0	1.2	0.0	4.4
한화케미칼	KRW	25,850	(0.4)	10.7	9.3	8.4	18.6	77.1	(5.0)	3,777	0.0	10.5	0.0	0.9	0.0	9.0
금호석유	KRW	70,100	(0.8)	13.6	15.7	37.7	9.5	(17.9)	34.5	1,893	0.0	17.3	0.0	1.4	0.0	10.7
SKC	KRW	30,350	1.0	3.1	(1.6)	(1.8)	(18.7)	(21.1)	(10.2)	993	0.0	8.4	0.0	0.7	0.0	7.5
국도화학	KRW	68,100	(0.3)	0.6	7.4	22.0	(5.2)	26.6	14.8	351	0.0	7.8	0.0	0.9	0.0	5.0
효성	KRW	4,070	(0.5)	13.8	35.7	73.9	40.3	(6.8)	55.9	4,218	0.0	8.1	0.0	1.3	0.0	7.2
Average			**1.3**	**4.2**	**3.9**	**14.1**	**(0.6)**	**(4.0)**	**2.6**							
Refinery																
Valero	USD	60.1	(1.0)	(1.3)	(7.8)	(9.7)	(2.1)	4.4	(15.0)	28,238	9.1	8.4	1.3	1.2	4.8	4.7
Conoco Phillips	USD	47.1	4.6	8.3	9.4	29.3	(12.3)	(30.5)	0.8	58,278	#N/A N/A	111.3	1.5	1.6	13.0	7.6
Formosa Petrochemi	TWD	93.0	0.5	1.9	0.3	18.8	14.0	25.0	18.0	27,545	19.3	18.7	3.2	3.1	12.4	12.3
Tesoro	USD	83.4	0.8	(0.4)	(7.0)	(6.9)	(18.6)	(1.6)	(20.8)	10,004	10.5	10.7	1.7	1.5	5.8	5.8
Marathon Petroleum	USD	38.3	(0.2)	(1.7)	0.3	(7.0)	(21.9)	(22.3)	(26.1)	20,285	9.8	8.9	1.5	1.3	6.4	6.0
Devon Energy	USD	33.6	5.1	8.6	22.1	43.2	(25.8)	(49.0)	5.1	17,613	#N/A N/A	54.0	2.2	2.2	15.8	9.5
Hollyfrontier	USD	34.8	0.2	(1.4)	(3.5)	2.9	(26.9)	(8.1)	(12.7)	6,150	12.2	9.6	1.1	1.1	6.1	5.5
Phillips 66	USD	86.4	0.9	0.5	(3.3)	9.9	5.9	10.8	5.6	45,476	14.5	11.8	1.9	1.7	8.4	7.3
Murphy Oil	USD	30.5	4.6	5.7	20.0	86.0	10.5	(38.6)	35.7	5,247	#N/A N/A	#N/A N/A	1.0	1.1	9.0	6.1
JX Holdings	JPY	463.4	1.8	4.7	1.3	6.8	(3.6)	(10.7)	(8.9)	10,597	8.6	7.8	0.7	0.6	10.1	9.7
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	0.0	(9.9)	0.0	1,151	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Idemitsu	JPY	2,123.0	3.4	8.3	8.5	24.2	6.2	(11.5)	9.5	3,113	6.2	5.7	0.6	0.5	6.9	6.6
Tonengeneral	JPY	1,024.0	2.4	4.6	7.0	7.7	(17.4)	(10.1)	0.2	3,434	11.4	9.4	1.5	1.4	13.0	7.3
Nesteoil	EUR	29.9	2.2	(0.5)	(0.9)	13.5	34.9	20.6	8.2	0	11.3	12.2	2.2	2.0	7.1	7.5
Ashland	USD	114.6	1.3	3.6	7.2	19.0	7.6	(9.1)	11.5	7,243	16.0	14.4	2.8	2.5	9.2	8.9
Fuchs Petrolub	EUR	40.0	2.3	2.9	0.6	3.6	(4.5)	5.1	(8.1)	5,871	22.1	21.1	4.6	4.1	12.6	12.1
SK이노베이션	KRW	163,500	(1.5)	(4.7)	2.2	25.3	44.7	44.1	25.8	13,401	0.0	9.1	0.0	0.9	0.0	5.5
S-Oil	KRW	91,000	(1.1)	(5.7)	1.3	17.0	30.4	22.3	14.6	9,082	0.0	9.2	0.0	1.7	0.0	6.5
GS	KRW	57,600	(0.7)	(2.5)	7.9	21.4	17.4	30.3	13.6	4,744	0.0	7.8	0.0	0.8	0.0	7.8
Average			**1.3**	**1.6**	**3.5**	**16.0**	**2.0**	**(2.1)**	**3.0**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임
* 국내업체의 multiple은 Dataguidepro 기준임

Analyst 손 지 우
T. 3773-8827
E. jwshon@sk.com

Global peers

	Currency	04/19	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 15	PER 16E	PBR 15	PBR 16E	EV/EBITDA 15	EV/EBITDA 16E
E&P/Shale																
Exxon Mobil	USD	86	0.5	2.2	2.4	12.8	6.4	(0.8)	10.6	357,792	36.2	20.5	2.1	2.1	11.0	8.1
BP	GBP	363	2.0	1.7	1.7	6.0	(3.8)	(24.3)	2.5	97,364	34.6	14.2	1.1	1.1	6.0	4.6
Shell	EUR	1,801	(0.2)	2.4	6.1	31.9	1.5	(13.8)	18.0	208,172	23.7	13.4	1.0	1.0	6.1	4.6
Chevron	USD	101	1.8	3.1	2.9	23.3	11.6	(7.9)	11.7	189,413	73.8	21.5	1.3	1.3	8.7	6.0
Total	EUR	43	1.5	4.8	(0.0)	11.0	(4.6)	(12.2)	3.9	120,929	17.2	12.1	1.2	1.2	7.2	5.6
Sinopec	CNY	5	0.2	(1.4)	3.8	7.3	(5.4)	(33.7)	(1.8)	89,600	19.1	13.0	0.9	0.8	5.6	4.9
Petrochina	CNY	8	0.8	0.0	(2.9)	3.1	(14.0)	(42.8)	(8.4)	206,595	57.1	23.0	1.2	1.1	8.0	6.7
CNOOC	CNY	13	0.5	(0.9)	(0.8)	0.2	(25.8)	(51.7)	(15.5)	7,524	59.4	30.8	1.3	1.3	13.2	11.2
Gazprom	RUB	156	6.6	4.7	3.5	23.8	11.2	4.5	14.6	55,826	4.1	3.6	0.3	0.3	4.0	3.5
Rosneft	RUB	312	2.6	(2.6)	(1.2)	32.1	24.0	21.8	23.1	49,961	8.5	5.8	0.9	0.8	4.6	4.0
Anadarko	USD	51	0.8	0.8	3.6	63.8	(30.1)	(46.1)	4.0	26,073	#N/A N/A	#N/A N/A	2.0	2.2	12.8	8.4
Petrobras	BRL	10	4.1	6.5	18.5	106.4	21.0	(26.1)	43.6	41,167	35.0	6.4	0.5	0.5	6.8	5.5
Lukoil	USD	2,816	1.4	1.5	0.2	31.0	21.6	9.3	20.0	36,574	9.5	6.2	0.4	0.3	N/A	N/A
Kinder	USD	19	3.6	2.1	2.3	52.7	(39.6)	(56.4)	28.4	47,497	27.3	23.7	1.2	1.2	11.4	10.8
Statoil	NOK	134	3.5	3.6	(1.3)	26.7	(5.0)	(14.5)	8.1	52,526	37.8	16.1	1.2	1.2	3.8	2.9
BHP	AUD	20	5.2	16.4	8.7	33.5	(20.4)	(29.8)	10.1	78,570	43.3	22.7	1.4	1.4	8.8	7.1
PTT E&P	THB	72	4.4	2.5	2.9	58.0	(2.4)	(41.4)	24.9	8,147	26.6	15.3	0.7	0.7	2.9	2.6
Petronas gas	MYR	22	(0.5)	0.2	(2.6)	3.7	(4.0)	(4.5)	(3.6)	11,247	23.5	23.1	3.6	3.5	13.5	13.1
Chesapeake	USD	6	2.7	1.2	24.6	98.7	(24.4)	(60.4)	36.0	4,165	#N/A N/A	17.0	3.3	2.6	17.2	11.0
Noble Energy	USD	34	5.4	2.1	(0.4)	33.0	(5.2)	(34.1)	4.3	14,889	#N/A N/A	#N/A N/A	1.5	1.6	11.0	9.5
Average		**0**	**2.3**	**2.5**	**3.6**	**33.0**	**(4.4)**	**(23.2)**	**11.7**							
PV																
WACKER	EUR	79.6	2.8	3.4	2.6	21.0	12.0	(26.2)	2.7	4,723	31.5	17.8	1.5	1.5	5.4	4.9
GCL-Poly	HKD	1.2	0.0	(0.8)	(9.6)	13.9	(30.3)	(52.3)	6.0	2,948	7.8	6.9	0.9	0.8	6.3	5.5
REC	NOK	107.5	0.0	0.0	0.0	0.0	0.0	5.4	0.0	519	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
SunEdison	USD	0.3	(8.3)	(21.1)	(85.2)	(87.2)	(96.5)	(98.8)	(93.8)	116	#N/A N/A	#N/A N/A	0.0	0.0	20.3	10.6
Canadian Solar	USD	18.2	(1.9)	3.9	(11.5)	(3.0)	(16.4)	(47.8)	(37.2)	1,017	9.7	6.7	1.0	0.9	6.5	5.1
JA Solar	USD	8.8	(0.9)	(1.0)	(1.0)	2.7	1.3	(10.6)	(9.3)	444	5.5	4.9	0.4	0.4	2.7	2.3
Trina Solar	USD	9.8	(0.3)	0.0	(8.7)	8.5	(10.1)	(18.8)	(11.5)	902	7.0	6.3	0.7	0.6	5.9	5.2
Solar City	USD	30.3	0.1	2.9	11.9	(2.6)	(26.6)	(45.8)	(40.7)	2,965	#N/A N/A	#N/A N/A	13.2	#N/A N/A	#N/A N/A	#N/A N/A
Yingli	USD	5.0	(1.2)	(0.2)	(0.4)	55.1	(43.2)	(75.3)	9.9	91	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	9.1	8.9
First Solar	USD	60.5	0.3	0.3	(16.5)	(1.6)	18.2	(2.3)	(8.3)	6,186	14.1	17.4	1.1	1.0	7.9	8.2
한화솔라원	USD	13.7	(3.8)	(4.1)	(6.6)	(21.5)	(22.7)	(36.6)	(37.6)	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
OCI	KRW	98,900	4.7	(5.8)	5.0	58.2	15.4	(9.3)	31.9	2,091	0.0	12.3	0.0	0.8	0.0	10.5
웅진에너지	KRW	1,245	3.3	(5.3)	(25.7)	(18.6)	(26.3)	(27.6)	(28.0)	119	N/A	0.0	0.8	0.0	10.5	0.0
신성솔라에너지	KRW	1,660	4.4	4.4	3.2	3.2	31.9	31.3	(10.6)	148	N/A	0.8	0.0	10.5	0.0	8.1
Average			**(0.1)**	**(1.7)**	**(10.2)**	**2.0**	**(13.8)**	**(29.6)**	**(16.2)**							
Gas Company																
Towngas China	HKD	4.7	5.4	9.4	9.6	23.9	(19.1)	(43.0)	3.6	1,601	9.5	9.3	0.9	0.8	11.1	10.3
Kulun	HKD	6.9	2.1	1.2	10.4	24.6	3.5	(29.0)	(0.1)	7,172	14.1	11.1	1.0	1.0	5.7	5.2
Beijing Enterprise	HKD	42.9	0.7	7.0	3.6	6.1	(15.0)	(36.3)	(8.6)	7,097	8.6	8.0	0.9	0.8	13.6	12.2
ENN Energy	HKD	47.2	1.8	5.7	20.4	38.1	2.2	(16.0)	14.0	6,582	14.6	12.9	2.6	2.3	9.1	8.2
China Resources Gas	HKD	23.7	(1.3)	2.8	9.5	21.3	3.7	(7.6)	2.2	6,783	15.2	13.6	2.6	2.3	9.5	8.5
China Gas Holdings	HKD	12.6	0.3	8.8	11.7	27.5	(3.1)	(11.3)	12.7	7,978	14.0	12.3	2.5	2.2	11.2	10.0
Shenzen Gas	HKD	13.0	1.9	2.4	1.2	1.2	6.7	(8.8)	(9.3)	3,183	11.9	10.8	1.2	1.1	7.7	7.1
Shann Xi	CNY	10.2	(0.1)	(3.1)	11.2	(6.9)	(20.5)	(34.0)	(19.1)	1,755	16.2	13.8	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Suntien	HKD	0.9	1.2	2.4	(7.4)	(18.7)	(44.2)	(59.2)	(29.8)	417	8.9	6.8	0.3	0.3	8.7	7.2
China Oil & Gas	HKD	0.6	5.6	7.5	26.7	20.0	9.6	(42.5)	7.5	428	11.4	10.4	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**1.8**	**4.4**	**9.7**	**13.7**	**(7.6)**	**(28.7)**	**(2.7)**							
EV																
LG화학	KRW	326,500	(3.1)	0.0	4.0	6.4	12.4	24.9	(0.6)	19,180	15.0	13.3	1.7	1.5	6.5	6.0
삼성SDI	KRW	106,500	(0.9)	4.9	6.6	6.6	(6.6)	(22.3)	(6.6)	6,492	9.2	23.8	0.6	0.6	10.5	7.8
Panasonic	JPY	995.9	4.5	7.3	(2.7)	(10.9)	(22.8)	(36.1)	(19.7)	22,386	11.5	10.2	1.1	1.0	3.4	3.2
GS Yuasa	JPY	505.0	2.2	5.9	7.7	23.5	(2.1)	(11.2)	11.7	1,914	13.7	12.1	1.2	1.1	6.6	6.1
NEC	JPY	281.0	2.2	2.9	0.0	(23.4)	(29.8)	(28.3)	(27.0)	6,707	10.2	9.0	0.8	0.8	6.1	5.9
BYD Auto	CNY	62.4	4.0	7.8	9.6	6.1	(6.3)	9.3	(3.0)	20,380	44.7	30.8	4.4	4.0	14.5	12.2
Tesla Motors	USD	247.4	(2.6)	(0.2)	6.3	20.8	8.4	19.6	3.1	33,122	210.3	82.1	26.2	20.1	43.3	28.4
Kandi Technologies	USD	7.5	(4.0)	(0.3)	(6.9)	(7.3)	(18.7)	(38.3)	(31.2)	353	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.3**	**3.6**	**3.1**	**2.7**	**(8.2)**	**(10.3)**	**(9.2)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임