SK Energy Daily

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SK증권

1. News Summary (3 page)

2018년 4월 4일

News		Conclusion
WTI comment	증시 반등에 하루 만에 상승	
Headline	SK루브리컨츠 내달 14일 코스피 상장	구주를 내놓으면서 SK이노베이션에는 1조원 넘는 현금이 유입될 전망
News 1.	테슬라 파산 '심판의 날' (day of reckoning) 째각째각…	캐시번이 반복되며 모델3 양산 여의치 않을 것
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	63.5	0.8	(2.7)	1.5	3.1	24.5
Dubai	$/bbl	65.2	(2.4)	(1.0)	6.3	1.6	27.5
Gasoline	$/bbl	79.0	(2.2)	(2.1)	4.2	4.8	18.1
Diesel	$/bbl	81.2	(1.9)	(0.9)	7.2	3.3	29.6
Complex margin	$/bbl	8.2	0.2	(0.3)	(0.1)	1.0	0.7
1M lagging	$/bbl	11.9	0.4	(0.8)	8.1	1.6	8.2
Petrochemical			%	%	%	%	%
Naphtha	$/t	597	(2.1)	(0.7)	5.4	(1.6)	24.3
Butadiene	$/t	1,380	0.0	(1.1)	(0.7)	25.5	(21.1)
HDPE	$/t	1,310	0.0	(0.8)	(3.0)	2.3	12.4
MEG	$/t	960	1.1	3.4	(6.5)	(0.7)	29.7
PX	$/t	937	0.2	0.8	(2.1)	2.1	12.8
SM	$/t	1,315	0.4	4.3	(7.3)	1.5	11.6
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.70	0.5	(0.6)	(2.9)	(2.9)	(6.0)
Natural rubber	$/t	1,350	0.0	0.7	(7.5)	(6.9)	(23.3)
Cotton	C/lbs	82.0	1.3	0.0	(2.2)	5.8	9.6

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	04/02	$/t	1,265	0.0	6.5	(0.6)	21.1
Propylene	04/02	$/t	945	(1.0)	(4.1)	5.3	21.9
Benzene	04/02	$/t	833	(2.6)	(8.0)	(6.5)	2.1
Toluene	04/02	$/t	725	0.7	(3.3)	(1.4)	7.4
Xylene	04/02	$/t	763	0.0	0.0	7.0	7.4
PP	04/02	$/t	1,228	(3.5)	(6.1)	6.0	16.1
PVC	04/02	$/t	965	0.0	(1.5)	10.9	3.8
ABS	04/02	$/t	1,960	(0.5)	(7.5)	(4.4)	18.1
SBR	04/02	$/t	1,670	(1.8)	(4.6)	1.2	(34.4)
SM	04/02	$/t	1,320	2.5	(9.1)	2.3	11.4
BPA	04/02	$/t	1,723	(2.0)	(12.2)	(13.7)	12.0
Caustic	04/02	$/t	639	1.3	8.3	3.2	42.3
2-EH	04/02	$/t	1,190	5.3	5.8	16.7	15.0
Caprolactam	04/02	$/t	2,200	0.0	3.3	6.8	(2.2)
Solar				%	%	%	%
Polysilicon	03/28	$/kg	14.9	0.0	(7.0)	(15.1)	1.9
Module	03/28	$/W	0.30	(0.3)	(1.3)	(3.5)	(11.7)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	75.0	2.5	1.8	(0.7)	(13.5)	(8.6)
Shell	EUR	2,234	0.0	(1.2)	(0.7)	(11.0)	7.6
Petrochina	CNY	7.49	(2.1)	(3.9)	(5.9)	(9.4)	(4.8)
Gazprom	RUB	141.1	0.6	0.2	1.8	6.8	10.9
Petrobras	BRL	20.7	(0.9)	(3.4)	(3.7)	24.0	41.2
Refinery							
Phillips66	USD	96.2	1.3	0.5	5.3	(6.1)	22.9
Valero	USD	92.7	1.2	0.5	0.5	(0.6)	40.0
JX	JPY	625.2	(2.0)	(3.9)	(3.1)	(14.0)	16.1
Neste Oil	EUR	56.5	(0.2)	(1.2)	(1.4)	4.1	52.8

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	82.4	(0.1)	0.8	(1.2)	(10.4)	(11.4)
DowDuPont	USD	63.3	2.1	(0.5)	(7.5)	(13.3)	0.4
SABIC	SAR	114.8	(0.5)	(2.2)	9.6	13.1	18.3
Formosa Pla.	TWD	102.0	(0.5)	(2.9)	1.5	3.6	12.7
Shin-Etsu	JPY	10,885	(0.9)	(0.7)	1.9	(4.9)	12.5
Renewable							
Wacker	EUR	134.1	0.5	(1.1)	2.9	(19.5)	36.5
First Solar	USD	69.76	0.5	(2.4)	8.4	(0.1)	164.9
GCL-Poly	HKD	0.99	2.1	(2.9)	(20.2)	(32.7)	(3.9)
Tesla Motors	USD	267.5	6.0	(4.2)	(20.2)	(15.7)	(10.4)

4. Coverage Summary

	04/03	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,442	(0.1)	(0.4)	1.7	(1.8)	2.0	13.1				* 추정치는 12M fwd 기준임	
KOSPI화학	6,229	0.9	2.5	2.8	1.6	9.3	21.1				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	378,500	(2.3)	(6.1)	(1.3)	(7.6)	(3.4)	28.7	매수	450,000	18.9	13.10	1.74
롯데케미칼	434,000	1.0	(2.8)	(8.5)	19.6	14.8	17.1	매수	480,000	10.6	12.53	1.23
한화케미칼	29,500	0.7	(1.5)	(8.4)	(10.3)	(9.1)	11.7	매수	39,000	32.2	10.50	0.75
금호석유화학	98,300	2.6	2.3	9.8	(4.6)	36.3	24.7	매수	150,000	52.6	9.57	1.48
KCC	342,500	(0.7)	1.8	(3.2)	(9.9)	(8.5)	(3.2)	매수	450,000	31.4	12.54	0.53
OCI	160,000	1.9	(0.9)	(2.4)	10.7	56.1	88.9	매수	180,000	12.5	11.93	1.07
SKC	38,000	3.7	(0.5)	(1.4)	(22.4)	(7.9)	23.4	매수	50,000	31.6	10.43	0.94
SK이노베이션	211,000	(1.4)	0.7	1.7	4.2	6.0	26.7	매수	230,000	9.0	12.88	1.06
S-Oil	120,000	(0.8)	1.7	(4.8)	5.7	(5.9)	19.4	매수	140,000	16.7	14.54	1.89
GS	63,400	(0.9)	1.8	(2.8)	3.4	(3.4)	7.3	매수	80,000	26.2	5.95	0.80
SK가스	100,000	4.4	8.0	4.0	6.6	6.0	(17.4)	매수	130,000	30.0	8.78	0.66
포스코대우	23,200	1.3	(0.4)	19.6	19.0	20.2	(2.7)	매수	25,000	7.8	12.33	0.99
LG상사	27,000	(0.9)	(4.1)	2.9	(5.4)	(1.1)	(16.1)	매수	38,000	40.7	8.81	0.80
한국전력	34,950	5.1	12.2	6.2	(6.9)	(10.4)	(24.8)	매수	45,000	28.8	7.69	0.27
한국가스공사	48,850	1.1	0.1	0.1	11.3	16.0	8.7	매수	60,000	22.8	8.51	0.65

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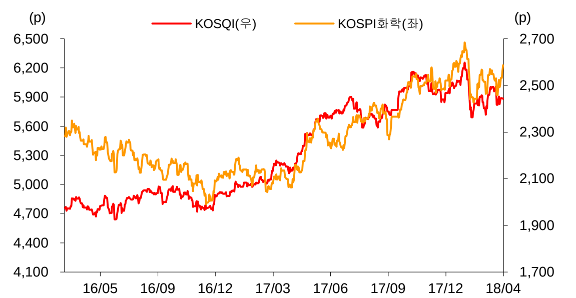
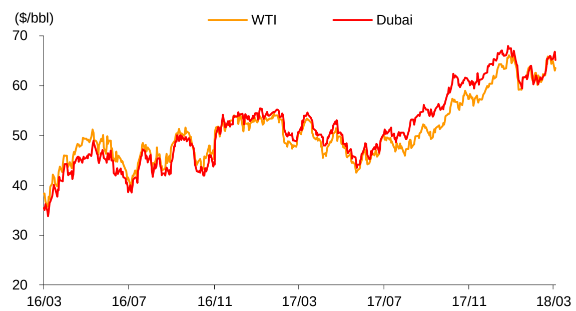
Key Chart

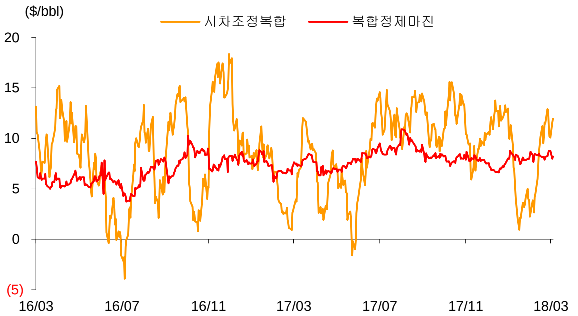
KOSPI/KOSPI화학



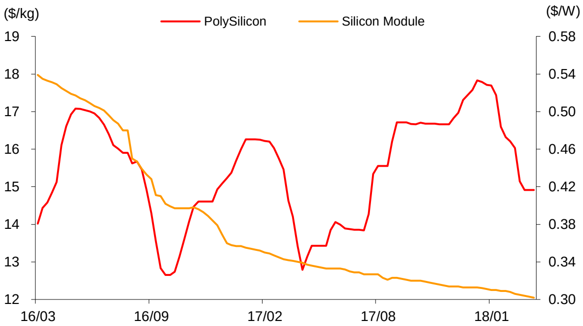
WTI/Dubai



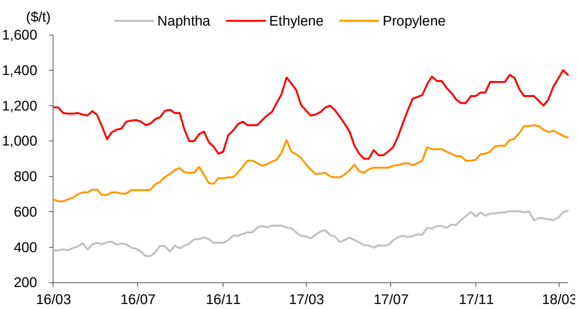
Complex & 1M lagging margin



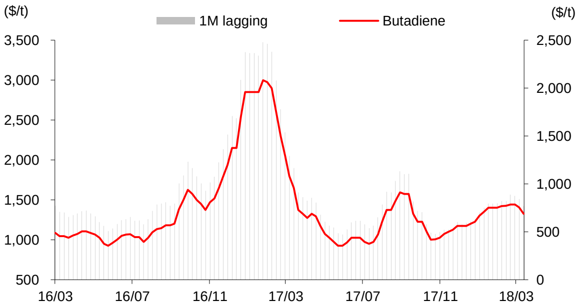
Polysilicon & Module prices



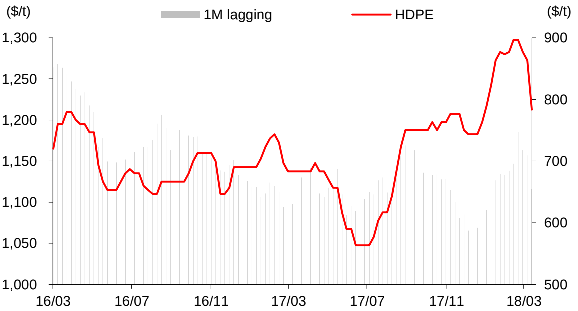
Naphtha/Ethylene/Propylene prices



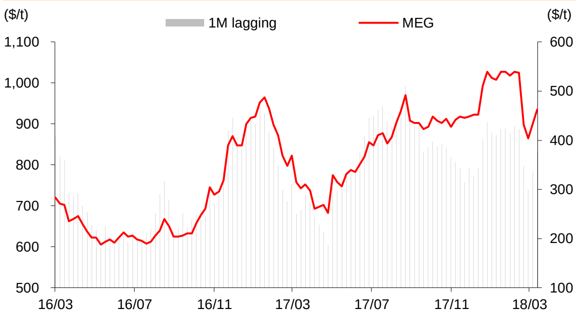
Butadiene price & 1M lagging naphtha spread



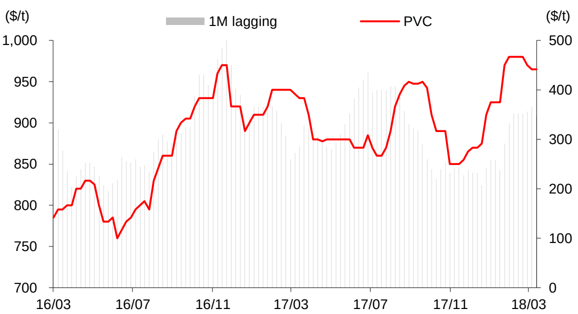
HDPE price & 1M lagging naphtha spread



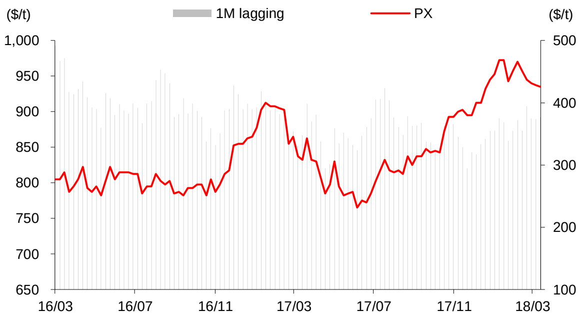
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

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News Comment

Headline **(출처: 매일경제)**

제목 SK루브리컨츠 내달 14일 코스피 상장

결론 구주를 내놓으면서 SK이노베이션에는 1조원 넘는 현금이 유입될 전망

세부

1) SK루브리컨츠는 구주 1,021만 2,766주와 신주 255만 3,191주를 공모
2) 희망 공모가 범위는 10만 1,000~12만 2,000원, 공모 규모는 1.3조~16조원
3) 시가총액은 4조2979억~5조1915억원 사이가 될 전망
4) SK이노베이션은 SK루브르컨츠 상장 후에도 70%의 지분을 갖게 됨
5) 구주를 내놓으면서 SK이노베이션에는 1조원 넘는 현금이 유입될 전망

WTI Comment **(출처: 연합뉴스)**

제목 증시 반등에 하루 만에 상승

상승 요인 뉴욕증시가 이날 반등세를 보이면서 유가도 힘을 받음

하락 요인

Issue 1 **(출처: 글로벌이코노믹)**

제목 테슬라 파산 '심판의 날' (day of reckoning) 째각째각…

결론 캐시번이 반복되며 모델3 양산 여의치 않을 것

세부

1) 어제 테슬라 주가는 52주 고점 대비 35.37% 하락한 $251.8에 마감함
2) 모델 X의 생산 차질과 자금난, 무디스의 신용평가 등급 하향조정 영향
3) 테슬라의 시총은 $426.5억, 포드자동차는 $433.7억으로 포드에 역전당함
4) 모델3 대량생산은 여전히 난항, 모델X는 주간 생산량이 2,000대 수준
5) 캐시번이 반복되며 모델3 양산 여의치 않을 것

Issue 2

제목

결론

세부

1)
2)
3)
4)
5)

Issue 3

제목

결론

세부

1)
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Issue 4

제목

결론

세부

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Issue 5

제목

결론

세부

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Issue 6

제목

결론

세부

1)
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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	**USD/EUR**	0.815	0.813	0.806	0.812	0.832	0.852	0.937	0.833	0.904	0.887	0.814
	Change, %		*0.3*	*1.1*	*0.4*	*(2.1)*	*(4.3)*	*(13.0)*	*(2.2)*	*(9.8)*	*(8.1)*	*0.2*
	USD/JPY	106.6	105.9	105.3	105.8	112.5	112.9	110.9	112.6	108.8	112.1	108.2
	Change, %		*0.7*	*1.2*	*0.8*	*(5.2)*	*(5.5)*	*(3.9)*	*(5.3)*	*(2.0)*	*(4.9)*	*(1.5)*
	USD/KRW	1,054.7	1,056.5	1,070.4	1,080.5	1,064.7	1,147.1	1,115.4	1,066.7	1,160.5	1,130.9	1,071.6
	Change, %		*(0.2)*	*(1.5)*	*(2.4)*	*(0.9)*	*(8.1)*	*(5.4)*	*(1.1)*	*(9.1)*	*(6.7)*	*(1.6)*
Agriculture	**Corn**	388.5	387.3	374.0	377.3	353.0	349.5	367.8	350.8	358.5	359.4	366.9
	Change, %		*0.3*	*3.9*	*3.0*	*10.1*	*11.2*	*5.6*	*10.8*	*8.4*	*8.1*	*5.9*
	Soybean	1,038.0	1,035.5	1,019.5	1,060.8	959.8	955.3	938.3	951.8	987.5	975.9	1,007.4
	Change, %		*0.2*	*1.8*	*(2.1)*	*8.2*	*8.7*	*10.6*	*9.1*	*5.1*	*6.4*	*3.0*
	Wheat	457.5	446.3	449.0	492.0	436.0	448.0	427.8	427.0	436.4	436.0	453.1
	Change, %		*2.5*	*1.9*	*(7.0)*	*4.9*	*2.1*	*7.0*	*7.1*	*4.8*	*4.9*	*1.0*
	Rice	12.4	12.3	12.4	12.3	11.4	12.0	10.1	11.7	10.3	11.1	12.2
	Change, %		*0.6*	*(0.5)*	*1.0*	*8.5*	*3.1*	*23.0*	*6.0*	*19.7*	*12.0*	*1.9*
	Oats	232.5	231.8	226.0	265.0	244.5	251.3	225.5	241.0	196.3	252.3	254.2
	Change, %		*0.3*	*2.9*	*(12.3)*	*(4.9)*	*(7.5)*	*3.1*	*(3.5)*	*18.5*	*(7.8)*	*(8.5)*
MYR/mt	**Palm Oil**	2,410.0	2,430.0	2,400.0	2,496.0	2,555.0	2,704.0	2,862.0	2,444.0	2,653.8	2,787.3	2,477.8
	Change, %		*(0.8)*	*0.4*	*(3.4)*	*(5.7)*	*(10.9)*	*(15.8)*	*(1.4)*	*(9.2)*	*(13.5)*	*(2.7)*
	Cocoa	2,498.0	2,635.0	2,554.0	2,320.0	1,907.0	2,082.0	2,107.0	1,892.0	2,854.0	2,005.2	2,199.2
	Change, %		*(5.2)*	*(2.2)*	*7.7*	*31.0*	*20.0*	*18.6*	*32.0*	*(12.5)*	*24.6*	*13.6*
	Cotton	82.0	81.0	82.0	82.7	78.1	68.2	75.5	78.6	65.6	73.5	80.5
	Change, %		*1.3*	*0.0*	*(0.8)*	*5.0*	*20.4*	*8.7*	*4.3*	*25.1*	*11.5*	*1.9*
	Sugar	12.5	12.5	12.5	13.4	15.3	14.0	16.5	15.2	18.2	15.8	13.4
	Change, %		*(0.4)*	*(0.6)*	*(7.1)*	*(18.5)*	*(11.2)*	*(24.6)*	*(17.7)*	*(31.3)*	*(21.2)*	*(7.1)*
	Coffee	116.6	116.4	119.0	120.4	128.6	125.5	137.9	126.2	136.1	133.0	120.9
	Change, %		*0.2*	*(2.0)*	*(3.1)*	*(9.3)*	*(7.1)*	*(15.4)*	*(7.6)*	*(14.3)*	*(12.3)*	*(3.6)*
Energy	**WTI**	63.5	63.0	65.3	61.3	61.6	50.4	50.2	60.4	43.4	51.0	63.0
	Change, %		*0.8*	*(2.7)*	*3.7*	*3.1*	*26.0*	*26.4*	*5.1*	*46.4*	*24.6*	*0.8*
	Brent	68.1	67.6	70.1	64.4	67.8	56.0	53.1	66.9	45.1	54.9	67.3
	Change, %		*0.7*	*(2.8)*	*5.8*	*0.4*	*21.6*	*28.2*	*1.9*	*51.1*	*24.2*	*1.2*
	Natural Gas	2.7	2.7	2.7	2.7	3.0	2.9	3.1	3.0	2.6	3.0	2.8
	Change, %		*0.5*	*0.2*	*0.1*	*(10.3)*	*(6.8)*	*(13.8)*	*(8.7)*	*5.7*	*(10.8)*	*(4.9)*
	Ethanol	1.4	1.4	1.4	1.5	1.3	1.5	1.6	1.3	1.5	1.5	1.4
	Change, %		*(0.4)*	*(1.4)*	*(3.6)*	*6.6*	*(5.1)*	*(14.1)*	*6.4*	*(7.2)*	*(6.1)*	*(1.3)*
	RBOB Gasoline	197.4	196.6	201.4	190.1	179.7	156.6	169.4	179.9	140.0	162.9	186.9
	Change, %		*0.4*	*(2.0)*	*3.8*	*9.8*	*26.1*	*16.6*	*9.7*	*41.0*	*21.2*	*5.6*
	Coal	92.0	92.3	96.9	102.9	103.8	97.0	89.5	100.8	65.5	88.2	102.4
	Change, %		*(0.3)*	*(5.1)*	*(10.6)*	*(11.4)*	*(5.2)*	*2.8*	*(8.7)*	*40.5*	*4.3*	*(10.1)*
Metal	**Gold**	1,332.8	1,341.2	1,345.1	1,322.8	1,313.2	1,271.7	1,253.4	1,302.6	1,248.5	1,258.6	1,330.0
	Change, %		*(0.6)*	*(0.9)*	*0.8*	*1.5*	*4.8*	*6.3*	*2.3*	*6.8*	*5.9*	*0.2*
	Silver	16.4	16.6	16.5	16.5	17.1	16.6	18.3	16.9	17.1	17.1	16.7
	Change, %		*(1.1)*	*(0.7)*	*(0.6)*	*(4.2)*	*(1.3)*	*(10.1)*	*(3.2)*	*(4.0)*	*(3.9)*	*(1.9)*
	Copper	6,796.0	6,714.0	6,649.0	6,898.0	7,147.0	6,520.0	5,753.0	7,247.0	4,872.0	6,199.4	6,981.7
	Change, %		*1.2*	*2.2*	*(1.5)*	*(4.9)*	*4.2*	*18.1*	*(6.2)*	*39.5*	*9.6*	*(2.7)*
	Nickel	876.8	879.5	838.7	879.9	790.9	701.2	639.4	809.1	646.4	680.2	854.7
	Change, %		*(0.3)*	*4.5*	*(0.4)*	*10.9*	*25.0*	*37.1*	*8.4*	*35.7*	*28.9*	*2.6*
	Zinc	3,280.0	3,274.0	3,275.0	3,355.0	3,327.0	3,264.0	2,708.0	3,319.0	2,097.5	2,888.5	3,382.6
	Change, %		*0.2*	*0.2*	*(2.2)*	*(1.4)*	*0.5*	*21.1*	*(1.2)*	*56.4*	*13.6*	*(3.0)*
	Lead	2,397.8	2,399.0	2,412.0	2,447.3	2,578.5	2,588.0	2,281.5	2,482.8	1,868.3	2,315.7	2,511.6
	Change, %		*(0.1)*	*(0.6)*	*(2.0)*	*(7.0)*	*(7.4)*	*5.1*	*(3.4)*	*28.3*	*3.5*	*(4.5)*
	Aluminum	14,040.0	13,845.0	13,725.0	14,300.0	14,970.0	16,235.0	13,785.0	15,020.0	12,373.5	14,556.6	14,281.8
	Change, %		*1.4*	*2.3*	*(1.8)*	*(6.2)*	*(13.5)*	*1.8*	*(6.5)*	*13.5*	*(3.5)*	*(1.7)*
	Cobalt	93,050.0	93,550.0	93,300.0	79,250.0	75,205.0	59,651.0	55,750.0	75,205.0	25,480.1	55,906.9	82,433.9
	Change, %		*(0.5)*	*(0.3)*	*17.4*	*23.7*	*56.0*	*66.9*	*23.7*	*265.2*	*66.4*	*12.9*
	HR Coil	865.0	860.0	825.0	836.0	660.0	595.0	640.0	662.0	519.3	620.1	753.3
	Change, %		*0.6*	*4.8*	*3.5*	*31.1*	*45.4*	*35.2*	*30.7*	*66.6*	*39.5*	*14.8*
	Scrap	400.0	400.0	400.0	389.0	369.0	335.0	350.0	367.0	275.7	344.7	386.1
	Change, %		*0.0*	*0.0*	*2.8*	*8.4*	*19.4*	*14.3*	*9.0*	*45.1*	*16.0*	*3.6*

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		04/03	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	63.5	63.0	65.3	62.6	61.6	50.4	51.0	53.7	43.4	50.9	62.9
	Change, %		*0.8*	*(2.7)*	*1.5*	*3.1*	*26.0*	*24.5*	*18.2*	*46.5*	*24.8*	*0.9*
	Dubai	65.2	66.8	65.8	61.3	64.2	54.5	51.1	53.8	41.3	53.1	64.0
	Change, %		*(2.4)*	*(1.0)*	*6.3*	*1.6*	*19.7*	*27.5*	*21.0*	*57.8*	*22.7*	*1.8*
Crude Oil Product	**Gasoline(휘발유)**	79.0	80.8	80.7	75.9	75.4	68.1	66.9	69.8	56.3	68.0	77.7
	Change, %		*(2.2)*	*(2.1)*	*4.2*	*4.8*	*16.1*	*18.1*	*13.1*	*40.5*	*16.2*	*1.7*
	Kerosene(등유)	82.1	83.3	82.2	79.5	78.9	67.4	62.0	66.4	52.9	65.2	80.1
	Change, %		*(1.4)*	*(0.1)*	*3.3*	*4.2*	*21.9*	*32.5*	*23.6*	*55.3*	*25.9*	*2.6*
	Diesel(경유)	81.2	82.8	81.9	75.7	78.6	67.6	62.6	65.5	52.1	65.6	78.8
	Change, %		*(1.9)*	*(0.9)*	*7.2*	*3.3*	*20.0*	*29.6*	*23.9*	*55.7*	*23.7*	*3.0*
	Bunker-C	57.8	58.6	58.7	56.0	57.8	50.8	46.3	52.1	35.5	49.7	57.6
	Change, %		*(1.3)*	*(1.4)*	*3.2*	*0.1*	*13.8*	*25.0*	*11.1*	*62.8*	*16.5*	*0.3*
	Naphtha	65.4	66.8	65.8	61.9	66.5	55.1	51.8	53.5	42.6	53.7	63.6
	Change, %		*(2.1)*	*(0.7)*	*5.7*	*(1.7)*	*18.7*	*26.4*	*22.4*	*53.6*	*21.7*	*2.8*
Dubai Spread	**Gasoline(휘발유)**	13.9	14.0	14.9	14.5	11.2	13.6	15.8	16.0	14.9	14.9	13.7
	Change		*(0.1)*	*(1.0)*	*(0.7)*	*2.6*	*0.3*	*(1.9)*	*(2.2)*	*(1.1)*	*(1.1)*	*0.2*
	Kerosene(등유)	17.0	16.5	16.4	18.2	14.7	13.0	10.9	12.6	11.6	12.1	16.1
	Change		*0.5*	*0.6*	*(1.2)*	*2.3*	*4.0*	*6.1*	*4.4*	*5.4*	*4.8*	*0.9*
	Diesel(경유)	16.0	16.0	16.1	14.4	14.4	13.2	11.5	11.7	10.8	12.5	14.8
	Change		*0.0*	*(0.0)*	*1.6*	*1.6*	*2.8*	*4.5*	*4.3*	*5.2*	*3.5*	*1.2*
	Bunker-C	(7.3)	(8.2)	(7.2)	(5.3)	(6.4)	(3.7)	(4.8)	(1.8)	(5.8)	(3.4)	(6.4)
	Change		*0.8*	*(0.2)*	*(2.0)*	*(0.9)*	*(3.7)*	*(2.5)*	*(5.6)*	*(1.5)*	*(3.9)*	*(1.0)*
	Naphtha	0.2	0.0	0.0	0.6	2.3	0.6	0.6	(0.4)	1.3	0.6	(0.4)
	Change		*0.2*	*0.2*	*(0.3)*	*(2.1)*	*(0.4)*	*(0.4)*	*0.6*	*(1.0)*	*(0.4)*	*0.6*
Refining Margin	**Simple(단순)**	2.2	1.7	2.4	3.1	1.9	3.1	2.3	3.8	1.9	3.2	2.3
	Change		*0.5*	*(0.1)*	*(0.8)*	*0.4*	*(0.9)*	*(0.1)*	*(1.6)*	*0.3*	*(0.9)*	*(0.0)*
	Complex(복합)	8.2	8.0	8.5	8.3	7.2	7.9	7.5	8.3	7.0	8.0	7.9
	Change		*0.2*	*(0.3)*	*(0.1)*	*1.0*	*0.4*	*0.7*	*(0.0)*	*1.2*	*0.2*	*0.4*
	Complex(lagging)	11.9	11.6	12.7	3.9	10.4	13.0	3.7	18.0	8.5	8.9	8.4
	Change		*0.4*	*(0.8)*	*8.1*	*1.6*	*(1.1)*	*8.2*	*(6.0)*	*3.5*	*3.0*	*3.5*

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

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Petrochemical Price Data

Daily Price			04/03	04/02	03/30	03/29	03/28	03/27	04/02	03/30	03/29	03/28
Spot Price	**Naphtha**	CFR Japan	596.8	609.8	606.3	606.3	602.5	601.3	609.8	606.3	606.3	602.5
	Ethylene	CFR SE Asia	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0
	Propylene	FOB Korea	1,000.0	1,000.0	1,000.0	1,000.0	1,010.0	1,020.0	1,000.0	1,000.0	1,000.0	1,010.0
	Butadiene	FOB Korea	1,380.0	1,380.0	1,380.0	1,380.0	1,380.0	1,395.0	1,380.0	1,380.0	1,380.0	1,380.0
	HDPE	CFR FE Asia	1,310.0	1,310.0	1,320.0	1,320.0	1,320.0	1,320.0	1,310.0	1,320.0	1,320.0	1,320.0
	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	1,190.0
	LLDPE	CFR FE Asia	1,170.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0	1,160.0
	MEG	CFR China	960.0	950.0	930.0	930.0	929.0	928.0	950.0	930.0	930.0	929.0
	PP	CFR FE Asia	1,190.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0
	PX	CFR China	936.5	934.7	926.0	926.0	925.7	928.7	934.7	926.0	926.0	925.7
	PTA	CFR China	763.0	765.0	760.0	760.0	760.0	760.0	765.0	760.0	760.0	760.0
	Benzene	FOB Korea	836.7	841.0	826.0	826.0	827.0	830.3	841.0	826.0	826.0	827.0
	Toluene	FOB Korea	696.0	696.0	683.0	683.0	677.0	677.0	696.0	683.0	683.0	677.0
	Xylene	FOB Korea	744.0	744.0	737.0	737.0	736.5	736.0	744.0	737.0	737.0	736.5
	SM	FOB Korea	1,315.0	1,310.0	1,267.5	1,267.5	1,267.5	1,260.5	1,310.0	1,267.5	1,267.5	1,267.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	607.0	596.0	558.0	597.0	579.0	469.5	484.5	399.5	493.5	582.4
	Change, %			1.8	8.8	1.7	4.8	29.3	25.3	51.9	23.0	4.2
	Ethylene	CFR SE Asia	1,265.0	1,265.0	1,187.5	1,272.5	1,200.0	1,045.0	990.0	1,040.9	1,090.9	1,243.7
	Change, %			0.0	6.5	(0.6)	5.4	21.1	27.8	21.5	16.0	1.7
	Propylene	CFR SE Asia	945.0	955.0	985.0	897.5	845.0	775.0	815.0	705.7	823.6	1,052.3
	Change, %			(1.0)	(4.1)	5.3	11.8	21.9	16.0	33.9	14.7	(10.2)
	Butadiene	CFR SE Asia	1,275.0	1,355.0	1,375.0	1,125.0	1,050.0	1,600.0	2,100.0	1,116.8	1,481.1	1,313.8
	Change, %			(5.9)	(7.3)	13.3	21.4	(20.3)	(39.3)	14.2	(13.9)	(3.0)
	Benzene	CFR SE Asia	832.5	855.0	905.0	890.0	892.5	815.0	822.5	646.7	838.8	902.9
	Change, %			(2.6)	(8.0)	(6.5)	(6.7)	2.1	1.2	28.7	(0.8)	(7.8)
	Toluene	CFR SE Asia	725.0	720.0	750.0	735.0	715.0	675.0	690.0	630.5	689.5	743.1
	Change, %			0.7	(3.3)	(1.4)	1.4	7.4	5.1	15.0	5.2	(2.4)
	Xylene	CFR SE Asia	762.5	762.5	762.5	712.5	695.0	710.0	675.0	627.7	668.8	755.6
	Change, %			0.0	0.0	7.0	9.7	7.4	13.0	21.5	14.0	0.9
Spread	**Ethylene**	-Naphtha	658.0	669.0	629.5	675.5	621.0	575.5	505.5	641.4	597.4	661.2
	Change, %			(1.6)	4.5	(2.6)	6.0	14.3	30.2	2.6	10.1	(0.5)
	Propylene	-Naphtha	338.0	359.0	427.0	300.5	266.0	305.5	330.5	306.2	330.1	469.9
	Change, %			(5.8)	(20.8)	12.5	27.1	10.6	2.3	10.4	2.4	(28.1)
	Butadiene	-Naphtha	668.0	759.0	817.0	528.0	471.0	1,130.5	1,615.5	717.3	987.6	731.4
	Change, %			(12.0)	(18.2)	26.5	41.8	(40.9)	(58.7)	(6.9)	(32.4)	(8.7)
	Benzene	-Naphtha	225.5	259.0	347.0	293.0	313.5	345.5	338.0	247.2	345.3	320.5
	Change, %			(12.9)	(35.0)	(23.0)	(28.1)	(34.7)	(33.3)	(8.8)	(34.7)	(29.6)
	Toluene	-Naphtha	118.0	124.0	192.0	138.0	136.0	205.5	205.5	231.0	196.0	160.7
	Change, %			(4.8)	(38.5)	(14.5)	(13.2)	(42.6)	(42.6)	(48.9)	(39.8)	(26.6)
	Xylene	-Naphtha	155.5	166.5	204.5	115.5	116.0	240.5	190.5	228.2	175.3	173.2
	Change, %			(6.6)	(24.0)	34.6	34.1	(35.3)	(18.4)	(31.9)	(11.3)	(10.2)

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

SK Energy Daily

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,212.5	1,272.5	1,297.5	1,182.5	1,207.5	1,137.5	1,142.5	1,134.6	1,142.5	1,255.4
	Change, %			*(4.7)*	*(6.6)*	*2.5*	*0.4*	*6.6*	*6.1*	*6.9*	*6.1*	*(3.4)*
	MEG	CFR SE Asia	935.0	900.0	1,025.0	922.5	917.5	742.5	847.5	660.8	850.6	981.7
	Change, %			*3.9*	*(8.8)*	*1.4*	*1.9*	*25.9*	*10.3*	*41.5*	*9.9*	*(4.8)*
	PVC	CFR SE Asia	965.0	965.0	980.0	870.0	850.0	930.0	920.0	823.4	899.9	950.0
	Change, %			*0.0*	*(1.5)*	*10.9*	*13.5*	*3.8*	*4.9*	*17.2*	*7.2*	*1.6*
	PP	CFR SE Asia	1,227.5	1,272.5	1,307.5	1,157.5	1,147.5	1,057.5	1,032.5	978.4	1,099.6	1,256.2
	Change, %			*(3.5)*	*(6.1)*	*6.0*	*7.0*	*16.1*	*18.9*	*25.5*	*11.6*	*(2.3)*
	2-EH	CFR Korea	1,190.0	1,130.0	1,125.0	1,020.0	1,030.0	1,035.0	865.0	772.4	970.0	1,094.6
	Change, %			*5.3*	*5.8*	*16.7*	*15.5*	*15.0*	*37.6*	*54.1*	*22.7*	*8.7*
	ABS	CFR SE Asia	1,960.0	1,970.0	2,120.0	2,050.0	2,000.0	1,660.0	1,635.0	1,347.1	1,844.7	2,036.2
	Change, %			*(0.5)*	*(7.5)*	*(4.4)*	*(2.0)*	*18.1*	*19.9*	*45.5*	*6.3*	*(3.7)*
	SBR	CFR SE Asia	1,670.0	1,700.0	1,750.0	1,650.0	1,640.0	2,545.0	2,000.0	1,483.0	1,980.5	1,722.3
	Change, %			*(1.8)*	*(4.6)*	*1.2*	*1.8*	*(34.4)*	*(16.5)*	*12.6*	*(15.7)*	*(3.0)*
	SM	CFR SE Asia	1,320.0	1,287.5	1,452.5	1,290.0	1,327.5	1,185.0	1,205.0	1,064.6	1,253.8	1,388.7
	Change, %			*2.5*	*(9.1)*	*2.3*	*(0.6)*	*11.4*	*9.5*	*24.0*	*5.3*	*(4.9)*
	Caustic	FOB NEA	639.0	631.0	590.0	619.0	705.0	449.0	422.5	316.6	491.2	587.9
	Change, %			*1.3*	*8.3*	*3.2*	*(9.4)*	*42.3*	*51.2*	*101.8*	*30.1*	*8.7*
	PX	CFR SE Asia	935.0	937.5	957.5	912.5	902.5	832.5	855.0	790.4	844.4	950.8
	Change, %			*(0.3)*	*(2.3)*	*2.5*	*3.6*	*12.3*	*9.4*	*18.3*	*10.7*	*(1.7)*
	PO	CFR China	1,722.5	1,757.5	1,962.5	1,995.0	1,732.5	1,537.5	1,562.5	1,396.8	1,601.2	1,910.6
	Change, %			*(2.0)*	*(12.2)*	*(13.7)*	*(0.6)*	*12.0*	*10.2*	*23.3*	*7.6*	*(9.8)*
	Caprolactam	CFR SE Asia	2,200.0	2,200.0	2,130.0	2,060.0	2,020.0	2,250.0	1,850.0	1,344.9	1,936.4	2,093.1
	Change, %			*0.0*	*3.3*	*6.8*	*8.9*	*(2.2)*	*18.9*	*63.6*	*13.6*	*5.1*
	PTA	CFR SE Asia	772.5	785.0	790.0	717.5	715.0	662.5	642.5	613.7	667.8	773.7
	Change, %			*(1.6)*	*(2.2)*	*7.7*	*8.0*	*16.6*	*20.2*	*25.9*	*15.7*	*(0.1)*
Spread	HDPE		605.5	676.5	739.5	585.5	628.5	668.0	658.0	735.1	649.0	673.0
	Change, %			*(10.5)*	*(18.1)*	*3.4*	*(3.7)*	*(9.4)*	*(8.0)*	*(17.6)*	*(6.7)*	*(10.0)*
	MEG		328.0	304.0	467.0	325.5	338.5	273.0	363.0	261.3	357.1	399.3
	Change, %			*7.9*	*(29.8)*	*0.8*	*(3.1)*	*20.1*	*(9.6)*	*25.5*	*(8.1)*	*(17.9)*
	PVC		358.0	369.0	422.0	273.0	271.0	460.5	435.5	423.9	406.4	367.6
	Change, %			*(3.0)*	*(15.2)*	*31.1*	*32.1*	*(22.3)*	*(17.8)*	*(15.5)*	*(11.9)*	*(2.6)*
	PP		620.5	676.5	749.5	560.5	568.5	588.0	548.0	578.9	606.1	673.8
	Change, %			*(8.3)*	*(17.2)*	*10.7*	*9.1*	*5.5*	*13.2*	*7.2*	*2.4*	*(7.9)*
	2-EH		583.0	534.0	567.0	423.0	451.0	565.5	380.5	372.9	476.5	512.2
	Change, %			*9.2*	*2.8*	*37.8*	*29.3*	*3.1*	*53.2*	*56.4*	*22.3*	*13.8*
	ABS		1,353.0	1,374.0	1,562.0	1,453.0	1,421.0	1,190.5	1,150.5	947.6	1,351.2	1,453.7
	Change, %			*(1.5)*	*(13.4)*	*(6.9)*	*(4.8)*	*13.6*	*17.6*	*42.8*	*0.1*	*(6.9)*
	SBR	BD spread	395.0	345.0	375.0	525.0	590.0	945.0	(100.0)	366.2	499.4	408.5
	Change, %			*14.5*	*5.3*	*(24.8)*	*(33.1)*	*(58.2)*	*(495.0)*	*7.9*	*(20.9)*	*(3.3)*
	SM		713.0	691.5	894.5	693.0	748.5	715.5	720.5	665.1	760.3	806.2
	Change, %			*3.1*	*(20.3)*	*2.9*	*(4.7)*	*(0.3)*	*(1.0)*	*7.2*	*(6.2)*	*(11.6)*
	Caustic											
	Change, %											
	PX		328.0	341.5	399.5	315.5	323.5	363.0	370.5	390.9	351.0	368.3
	Change, %			*(4.0)*	*(17.9)*	*4.0*	*1.4*	*(9.6)*	*(11.5)*	*(16.1)*	*(6.5)*	*(11.0)*
	PO	propylene sprea	777.5	802.5	977.5	1,097.5	887.5	762.5	747.5	691.1	777.6	858.3
	Change, %			*(3.1)*	*(20.5)*	*(29.2)*	*(12.4)*	*2.0*	*4.0*	*12.5*	*(0.0)*	*(9.4)*
	Caprolactam	benzene spreac	1,367.5	1,345.0	1,225.0	1,170.0	1,127.5	1,435.0	1,027.5	698.2	1,097.6	1,190.2
	Change, %			*1.7*	*11.6*	*16.9*	*21.3*	*(4.7)*	*33.1*	*95.9*	*24.6*	*14.9*
	PTA	px spread	118.0	128.8	119.8	78.8	83.3	79.8	44.0	60.4	76.7	108.1
	Change, %			*(8.3)*	*(1.5)*	*49.8*	*41.7*	*48.0*	*168.2*	*95.3*	*53.8*	*9.1*

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	04/03	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
Petrochemical																
DowDuPont	USD	63.3	2.1	(0.5)	(7.5)	(13.3)	(10.0)	0.4	(11.1)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	103.0	0.3	(1.9)	2.2	8.0	12.8	28.8	11.1	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	82.4	(0.1)	0.8	(1.2)	(10.4)	(8.2)	(11.4)	(10.2)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	76.9	0.2	(1.1)	0.7	4.6	(1.8)	(1.1)	5.3	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	105.8	(0.2)	(1.4)	1.8	3.2	1.7	14.3	4.2	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	62.0	(0.3)	(0.4)	(5.0)	(8.2)	(7.1)	(1.2)	(6.5)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	608	(1.3)	(1.5)	(3.6)	(24.9)	(13.3)	(1.6)	(24.9)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,013	(0.7)	(0.4)	(4.4)	(18.1)	(7.4)	17.0	(18.1)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,885	(0.9)	(0.7)	1.9	(4.9)	7.3	12.5	(4.9)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,402	0.1	(1.7)	7.0	(3.5)	0.6	28.2	(3.5)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,369	(0.3)	(0.9)	(4.7)	6.8	11.5	27.8	6.8	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	7,885	(0.6)	0.5	(7.3)	(21.2)	(17.4)	(9.4)	(21.2)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	114.8	(0.5)	(2.2)	9.6	13.1	13.1	18.3	13.1	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	70.6	(1.8)	(1.6)	4.5	19.5	20.7	22.1	19.7	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	102.0	(0.5)	(2.9)	1.5	3.6	11.8	12.7	3.3	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	107.5	0.0	(2.3)	2.4	3.9	17.4	13.9	4.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	81.3	(0.4)	(2.2)	3.8	4.0	9.9	13.1	4.4	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.80	(1.9)	(4.0)	(0.3)	(14.2)	(8.1)	(9.4)	(8.4)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.02	(1.0)	(9.8)	(11.8)	(26.3)	(35.9)	(44.8)	(24.3)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	900	0.7	(0.0)	(5.2)	(1.7)	12.7	30.9	(1.1)	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	108.0	(0.9)	(1.1)	3.8	11.8	16.1	(0.6)	11.3	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	95.8	(0.8)	(1.5)	(3.3)	11.0	19.7	30.7	12.6	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.3	(0.5)	(0.4)	1.9	3.8	13.2	8.0	7.1	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	378,500	(2.3)	(6.1)	(1.3)	(7.6)	(3.4)	29.2	(6.5)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	434,000	1.0	(2.8)	(8.5)	19.6	14.8	17.8	17.9	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	29,500	0.7	(1.5)	(8.4)	(10.3)	(9.1)	13.0	(6.6)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	98,300	2.6	2.3	9.8	(4.6)	36.3	24.9	(1.2)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	38,000	3.7	(0.5)	(1.4)	(22.4)	(7.9)	23.4	(19.1)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	60,300	1.3	2.6	(3.1)	(5.8)	9.2	21.7	(4.4)	359	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
효성	KRW	9,880	1.8	5.0	7.3	32.6	48.6	17.6	30.3	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(0.0)**	**(1.3)**	**(0.6)**	**(1.7)**	**4.9**	**11.6**	**(0.7)**							
Refinery																
Valero	USD	92.7	1.2	0.5	0.5	(0.6)	19.5	40.0	0.9	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	60.0	3.3	1.5	11.0	6.5	21.9	21.4	9.4	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	116.0	(0.9)	(2.9)	3.1	(1.3)	8.4	9.4	0.4	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	102.7	2.2	1.2	11.7	(11.8)	(1.9)	27.6	(10.2)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	72.6	1.1	(0.4)	11.4	5.8	29.3	45.4	10.0	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	31.4	3.4	(1.1)	0.0	(26.6)	(14.1)	(25.4)	(24.2)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	49.7	2.9	1.4	12.7	(3.3)	36.2	79.3	(3.0)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	96.2	1.3	0.5	5.3	(6.1)	2.7	22.9	(4.9)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	25.7	2.3	0.0	(2.5)	(20.7)	(3.3)	(9.0)	(17.1)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	625.2	(2.0)	(3.9)	(3.1)	(14.0)	8.6	16.1	(14.0)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	3,835.0	(3.9)	(5.7)	(4.2)	(15.2)	22.9	(0.8)	(15.2)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	56.5	(0.2)	(1.2)	(1.4)	4.1	49.0	52.8	5.8	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	68.7	0.5	(0.4)	(1.6)	(6.6)	2.5	13.4	(3.5)	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	44.0	(0.3)	(0.6)	(4.1)	(1.1)	(12.0)	(3.8)	(0.7)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	211,000	(1.4)	0.7	1.7	4.2	6.0	27.1	3.2	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	120,000	(0.8)	1.7	(4.8)	5.7	(5.9)	20.5	2.6	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	63,400	(0.9)	1.8	(2.8)	3.4	(3.4)	9.1	1.9	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.5**	**(0.4)**	**1.9**	**(4.6)**	**9.8**	**20.4**	**(3.4)**							

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

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Global peers

	Currency	04/03	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	18E	19E	18E	19E	18E	19E
E&P/Shale																
Exxon Mobil	USD	75	2.5	1.8	(0.7)	(13.5)	(8.2)	(8.6)	(10.3)	317,894	16.1	16.0	1.7	1.6	7.4	7.1
BP	GBP	480	0.1	0.9	3.3	(8.5)	(1.4)	5.1	(8.3)	134,480	14.9	14.2	1.4	1.3	5.3	5.1
Shell	EUR	2,234	0.0	(1.2)	(0.7)	(11.0)	(2.7)	7.6	(9.9)	263,915	13.2	12.3	1.3	1.3	5.8	5.6
Chevron	USD	115	2.3	0.1	2.9	(10.6)	(2.5)	6.5	(8.3)	219,354	18.5	18.2	1.5	1.5	6.5	6.3
Total	EUR	47	1.2	1.3	2.6	0.3	2.4	(0.6)	1.4	150,899	12.0	11.7	1.3	1.2	5.3	4.9
Sinopec	CNY	6	(0.8)	(3.9)	0.8	(1.4)	8.1	11.1	4.1	119,959	11.2	10.6	1.0	1.0	3.9	3.8
Petrochina	CNY	7	(2.1)	(3.9)	(5.9)	(9.4)	(6.3)	(4.8)	(7.4)	206,900	25.0	20.5	1.1	1.1	5.5	5.3
CNOOC	CNY	11	0.8	(1.2)	6.7	7.9	1.2	(9.2)	8.8	63,368	8.8	8.7	1.0	0.9	3.4	3.4
Gazprom	RUB	141	0.6	0.2	1.8	6.8	16.8	10.9	8.1	57,958	3.9	4.0	0.3	0.2	3.6	3.5
Rosneft	RUB	313	1.4	1.2	(2.0)	5.1	(0.9)	(4.6)	7.5	57,591	7.6	6.6	0.8	0.7	4.8	4.4
Anadarko	USD	59	1.8	(2.6)	3.0	8.1	20.2	(4.2)	10.4	30,507	37.7	37.0	2.5	2.4	6.2	5.7
Petrobras	BRL	21	(0.9)	(3.4)	(3.7)	24.0	29.6	41.2	28.6	86,092	10.0	8.3	0.8	0.8	5.4	5.0
Lukoil	USD	3,951	(0.1)	1.9	5.4	15.5	29.4	30.5	18.5	58,042	6.1	6.1	0.8	0.7	N/A	N/A
Kinder	USD	15	0.7	(0.5)	(6.8)	(20.8)	(20.4)	(30.5)	(16.9)	47,497	18.1	16.4	1.0	1.0	9.8	9.4
Statoil	NOK	184	(0.1)	0.1	5.5	2.6	15.0	24.5	5.3	78,366	15.6	15.0	1.9	1.8	3.6	3.4
BHP	AUD	29	1.8	(1.0)	(3.1)	(4.9)	9.8	19.6	(2.9)	112,664	15.1	15.8	1.9	1.8	5.9	6.0
PTT E&P	THB	115	(1.3)	(2.6)	(0.4)	12.8	26.2	20.5	14.5	14,564	13.0	12.4	1.2	1.1	3.7	3.5
Petronas gas	MYR	18	0.0	0.9	3.2	0.2	(0.6)	(9.3)	2.9	9,183	18.9	18.5	2.7	2.6	10.5	10.3
Chesapeake	USD	3	(1.7)	(1.0)	(1.4)	(28.3)	(31.9)	(50.7)	(26.3)	2,655	3.8	4.0	#N/A N/A	4.7	5.9	5.9
Noble Energy	USD	30	2.4	(1.3)	(2.1)	(3.9)	5.7	(12.2)	2.3	14,672	38.0	25.7	1.4	1.3	7.4	6.3
Average		**0**	**0.4**	**(0.7)**	**0.4**	**(1.5)**	**4.5**	**2.2**	**1.1**							
PV																
WACKER	EUR	134.1	0.5	(1.1)	2.9	(19.5)	8.4	36.5	(17.4)	8,576	19.5	16.6	2.0	2.0	6.8	6.5
GCL-Poly	HKD	1.0	2.1	(2.9)	(20.2)	(32.7)	(10.8)	(3.9)	(29.3)	2,345	6.2	5.5	0.6	0.5	6.2	5.7
SunPower	USD	7.6	(1.0)	(4.2)	5.0	(14.5)	4.3	25.0	(10.4)	1,056	#N/A N/A	46.6	4.4	3.9	13.0	8.8
Canadian Solar	USD	15.9	(2.8)	(3.8)	0.0	(7.1)	(5.3)	29.6	(6.0)	919	12.7	10.2	0.9	0.8	9.0	8.8
JA Solar	USD	6.9	(1.3)	5.8	(6.9)	(6.5)	(8.6)	6.0	(7.1)	330	13.1	10.9	1.5	1.5	3.9	3.6
Yingli	USD	1.7	(2.9)	(4.1)	0.0	(4.6)	(27.3)	(35.3)	(2.4)	30	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
First Solar	USD	69.8	0.5	(2.4)	8.4	(0.1)	47.7	164.9	3.3	7,288	41.9	21.3	1.3	1.2	12.3	7.3
한화큐셀	USD	7.4	(0.1)	(2.9)	(11.0)	0.5	(11.8)	0.3	4.7	612	33.4	23.7	#N/A N/A	#N/A N/A	8.1	7.3
OCI	KRW	160,000	1.9	(0.9)	(2.4)	10.7	56.1	88.2	17.6	3,614	0.0	14.6	0.0	1.1	0.0	6.7
웅진에너지	KRW	6,740	0.6	(1.6)	(6.0)	(19.9)	(10.7)	27.7	(18.0)	190	N/A	0.0	1.1	0.0	6.7	0.0
신성솔라에너지	KRW	1,680	(1.2)	(2.9)	(7.4)	(13.4)	(6.7)	(11.6)	(12.3)	275	N/A	1.1	0.0	6.7	0.0	8.3
Average			**(0.3)**	**(1.9)**	**(3.4)**	**(9.7)**	**3.2**	**29.8**	**(7.0)**							
Gas Company																
Towngas China	HKD	6.9	1.3	(3.2)	8.8	10.5	24.7	55.5	10.2	2,441	13.7	12.3	1.1	1.1	12.0	10.9
Kulun	HKD	6.8	0.9	0.4	(5.4)	(17.5)	(12.1)	(11.6)	(16.1)	7,024	9.2	8.0	1.0	1.0	5.5	5.0
Beijing Enterprise	HKD	42.2	2.8	(0.8)	(0.9)	(10.6)	(2.0)	(0.5)	(9.2)	6,777	7.4	6.7	0.7	0.7	12.3	11.7
ENN Energy	HKD	73.2	4.4	2.4	20.4	29.8	30.5	62.3	31.3	10,114	15.9	13.6	3.1	2.7	9.4	8.5
China Resources Gas	HKD	27.4	0.4	1.3	3.4	(0.7)	0.0	(2.1)	(3.5)	7,750	14.6	13.3	2.5	2.2	8.2	7.6
China Gas Holdings	HKD	28.5	(0.2)	(2.1)	17.5	30.1	14.2	123.4	31.9	18,041	19.4	16.5	4.7	4.0	14.9	12.8
Shenzen Gas	HKD	16.9	(1.6)	(2.2)	6.7	9.3	10.6	32.9	13.6	4,375	11.2	9.6	1.4	1.3	7.5	6.5
Shann Xi	CNY	7.1	3.3	3.0	(2.9)	(17.3)	(13.8)	(23.8)	(15.4)	1,260	13.5	15.4	1.3	1.2	#N/A N/A	#N/A N/A
Suntien	HKD	2.2	(0.9)	(2.7)	17.8	3.3	10.7	29.8	5.3	1,032	5.9	5.2	0.7	0.6	7.7	6.7
China Oil & Gas	HKD	0.6	0.0	(10.0)	(10.0)	(18.2)	12.5	6.8	(25.9)	468	9.7	8.4	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**1.0**	**(1.4)**	**5.5**	**1.9**	**7.5**	**27.3**	**2.2**							
EV																
LG화학	KRW	378,500	(2.3)	(6.1)	(1.3)	(7.6)	(3.4)	29.2	(6.5)	25,303	13.2	12.2	1.6	1.5	6.0	5.6
삼성SDI	KRW	197,500	(1.0)	(1.7)	15.8	(4.8)	(0.5)	43.1	(3.4)	12,861	15.7	11.5	1.1	1.0	12.6	10.1
Panasonic	JPY	1494.5	(1.3)	(9.4)	(7.8)	(9.4)	(8.0)	17.6	(9.4)	34,443	14.1	12.2	1.9	1.7	5.5	5.1
GS Yuasa	JPY	563.0	(1.4)	(2.8)	(0.7)	0.4	(6.0)	7.6	0.4	2,188	15.2	13.8	1.3	1.2	7.1	6.6
NEC	JPY	2935.0	(0.7)	(4.6)	(7.7)	(3.5)	(4.2)	9.1	(3.5)	7,182	19.8	13.9	0.8	0.8	6.5	5.8
BYD Auto	CNY	54.3	(2.5)	(11.5)	(13.7)	(17.9)	(20.5)	13.0	(16.6)	22,692	24.0	19.3	2.4	2.2	12.1	10.6
Tesla Motors	USD	267.5	6.0	(4.2)	(20.2)	(15.7)	(23.2)	(10.4)	(14.1)	45,191	#N/A N/A	113.9	9.6	8.7	41.3	15.6
Kandi Technologies	USD	4.8	6.7	(3.0)	(6.8)	(31.4)	(28.4)	26.3	(29.4)	259	#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			**0.4**	**(5.4)**	**(5.3)**	**(11.2)**	**(11.8)**	**16.9**	**(10.3)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임