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SK 증권

1. News Summary (3 page)

2018년 3월 30일

News		Conclusion
WTI comment	감산 기대에 반등…WTI 0.9%↑	
Headline	셰일가스 매장량 세계 1위 중국, 대량 상용화 단계 진입	중국은 가스 수요 증대분을 자체 셰일가스로도 상당 부분 충당할 것
News 1.	-	-
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	64.9	0.9	1.0	1.6	7.5	29.0
Dubai	$/bbl	65.3	0.1	(0.2)	2.2	1.6	28.8
Gasoline	$/bbl	80.5	0.4	0.9	3.9	5.3	22.6
Diesel	$/bbl	81.7	0.0	1.5	3.8	3.8	30.8
Complex margin	$/bbl	8.8	0.0	0.9	0.8	1.3	1.5
1M lagging	$/bbl	10.2	(1.0)	(1.4)	5.2	(0.1)	7.4
Petrochemical			%	%	%	%	%
Naphtha	$/t	606	0.6	2.4	7.1	(1.2)	30.5
Butadiene	$/t	1,380	0.0	(3.5)	(0.7)	25.5	(22.5)
HDPE	$/t	1,320	0.0	0.0	(2.2)	3.1	13.3
MEG	$/t	930	0.1	2.5	(9.4)	(2.2)	24.0
PX	$/t	926	0.0	(1.1)	(3.2)	1.6	13.5
SM	$/t	1,268	0.0	0.9	(10.7)	(1.5)	9.6
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.73	1.3	2.9	0.1	0.6	(3.7)
Natural rubber	$/t	1,360	0.0	(2.9)	(7.5)	(6.2)	(24.9)
Cotton	C/lbs	81.5	0.9	(0.8)	(1.3)	3.4	6.9

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	03/26	$/t	1,265	1.2	8.6	(0.6)	21.1
Propylene	03/26	$/t	955	(2.6)	(5.0)	6.4	20.1
Benzene	03/26	$/t	855	(1.4)	(7.6)	(3.9)	8.9
Toluene	03/26	$/t	720	0.0	(4.0)	(2.0)	4.3
Xylene	03/26	$/t	763	0.0	0.3	7.0	7.4
PP	03/26	$/t	1,273	(1.9)	(0.5)	9.9	18.1
PVC	03/26	$/t	965	(0.5)	(1.5)	10.9	3.2
ABS	03/26	$/t	1,970	(2.5)	(4.4)	(3.9)	13.9
SBR	03/26	$/t	1,700	(2.9)	(5.6)	3.0	(34.6)
SM	03/26	$/t	1,288	(3.7)	(10.7)	(0.2)	4.3
BPA	03/26	$/t	1,758	(6.3)	(10.1)	(11.9)	18.4
Caustic	03/26	$/t	631	5.0	10.5	1.9	41.5
2-EH	03/26	$/t	1,130	0.0	4.6	10.8	8.1
Caprolactam	03/26	$/t	2,200	0.9	6.8	6.8	(3.1)
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	74.6	2.5	1.5	(0.8)	(10.8)	(9.0)
Shell	EUR	2,234	0.1	1.3	(2.5)	(9.9)	4.9
Petrochina	CNY	7.70	1.3	(4.3)	(4.0)	(4.8)	(1.9)
Gazprom	RUB	142.8	1.7	2.4	1.9	9.4	10.9
Petrobras	BRL	21.4	1.0	(1.4)	1.8	33.0	48.2
Refinery							
Phillips66	USD	95.9	1.7	1.3	5.6	(5.2)	22.5
Valero	USD	92.8	2.8	(0.3)	2.1	0.9	38.2
JX	JPY	637.6	0.7	(1.9)	(2.1)	(12.3)	19.5
Neste Oil	EUR	56.6	1.4	(0.8)	(4.1)	6.1	53.8

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	82.5	1.5	0.2	(2.0)	(10.1)	(10.1)
DowDuPont	USD	63.7	2.1	(2.9)	(7.3)	(10.5)	(1.1)
SABIC	SAR	116.4	(0.8)	3.2	11.2	14.3	20.5
Formosa Pla.	TWD	103.0	0.0	(1.0)	1.0	4.4	11.2
Shin-Etsu	JPY	10,875	(0.5)	(2.9)	(0.7)	(5.0)	10.7
Renewable							
Wacker	EUR	133.4	0.8	0.1	(0.9)	(17.8)	37.0
First Solar	USD	70.98	2.4	(1.5)	14.3	5.1	153.2
GCL-Poly	HKD	0.97	(1.0)	(4.9)	(19.8)	(30.7)	(7.6)
Tesla Motors	USD	266.1	3.2	(13.9)	(19.6)	(14.5)	(4.1)

4. Coverage Summary

	03/29	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,436	0.7	(2.4)	(0.8)	(1.3)	2.7	12.6				* 추정치는 12M fwd 기준임	
KOSPI화학	6,025	0.4	(1.2)	(2.5)	(0.8)	9.0	17.2				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	386,000	0.0	(5.6)	(3.0)	(4.7)	2.1	32.0	매수	450,000	16.6	12.88	1.82
롯데케미칼	433,000	(0.6)	(1.5)	(7.2)	17.7	16.6	20.3	매수	410,000	(5.3)	11.82	1.30
한화케미칼	29,550	1.4	(3.3)	(12.1)	(6.5)	(11.7)	13.7	매수	39,000	32.0	11.28	0.77
금호석유화학	96,800	0.7	(2.8)	3.8	(2.7)	33.9	28.9	매수	150,000	55.0	11.81	1.55
KCC	331,500	(0.6)	(4.7)	(9.3)	(13.0)	(10.4)	(6.8)	매수	450,000	35.7	12.28	0.49
OCI	158,000	3.3	0.3	(6.2)	16.2	49.1	88.5	매수	180,000	13.9	14.85	1.11
SKC	38,200	0.0	(2.4)	(1.7)	(18.7)	(6.9)	23.6	매수	55,000	44.0	9.61	0.94
SK이노베이션	210,000	1.4	(1.6)	1.4	2.7	7.4	28.8	매수	230,000	9.5	11.12	1.06
S-Oil	119,500	2.1	0.0	(2.8)	2.1	(4.4)	21.8	매수	140,000	17.2	13.66	2.17
GS	61,600	(1.0)	(4.3)	(6.9)	(1.0)	(6.4)	8.3	매수	80,000	29.9	6.02	0.79
SK가스	93,300	1.5	(1.1)	(0.3)	(1.0)	0.1	(23.2)	매수	130,000	39.3	8.08	0.62
포스코대우	22,950	(1.5)	2.2	12.5	26.4	18.9	(0.2)	매수	25,000	8.9	10.47	0.92
LG상사	27,000	(3.7)	(0.4)	(2.4)	(0.6)	(1.1)	(11.9)	매수	38,000	40.7	9.10	0.77
한국전력	32,900	3.5	2.8	(1.3)	(13.8)	(13.9)	(29.6)	매수	50,000	52.0	7.07	0.26
한국가스공사	48,550	(1.8)	1.5	3.6	14.1	14.6	10.3	매수	60,000	23.6	9.17	0.72

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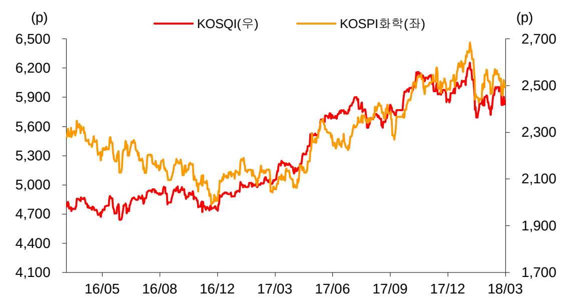
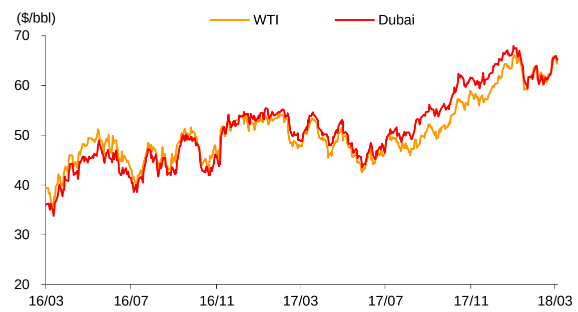
Key Chart

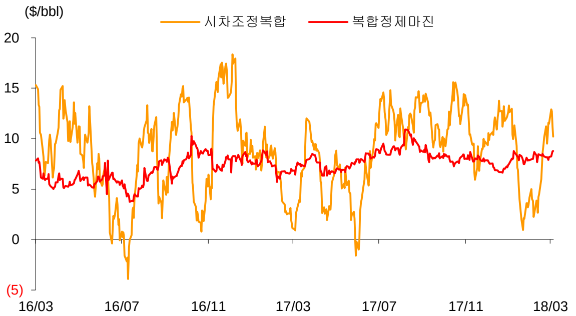
KOSPI/KOSPI화학



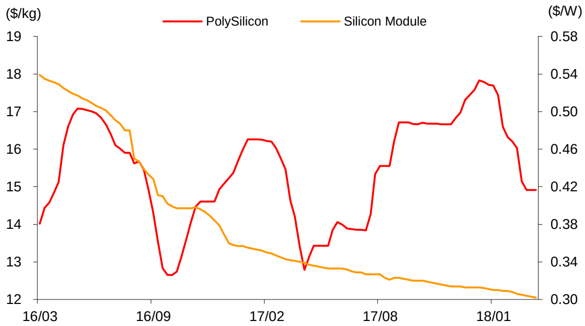
WTI/Dubai



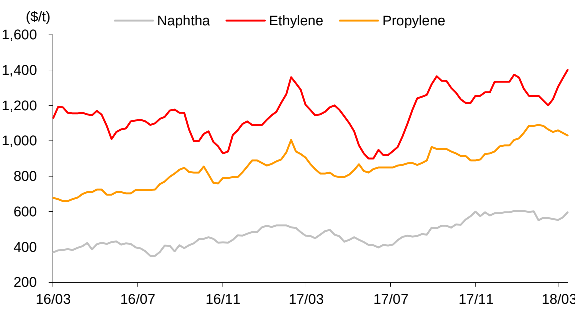
Complex & 1M lagging margin



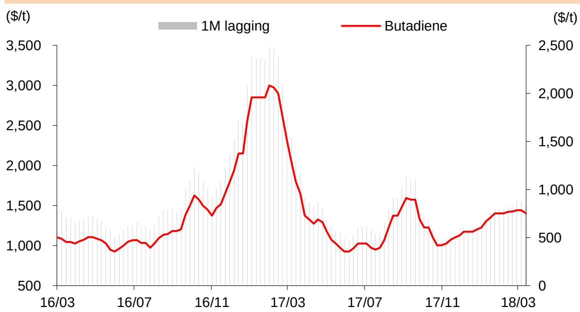
Polysilicon & Module prices



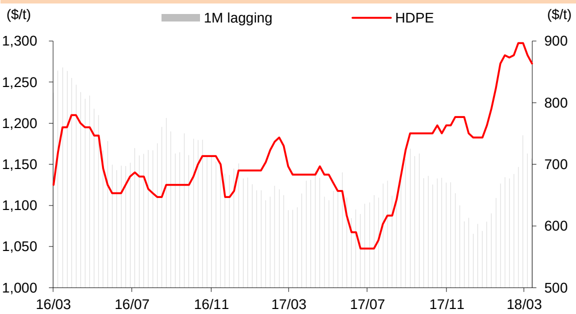
Naphtha/Ethylene/Propylene prices



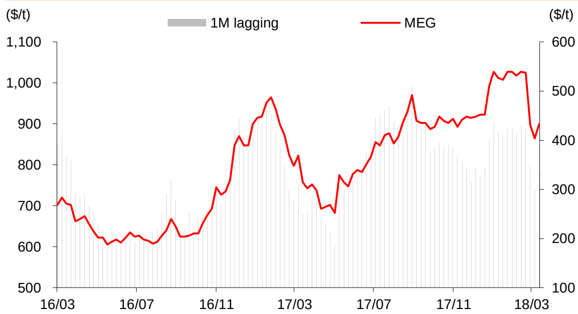
Butadiene price & 1M lagging naphtha spread



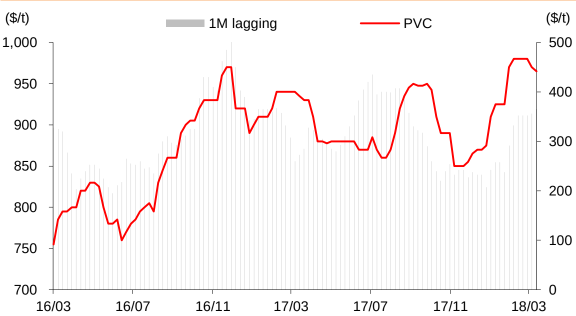
HDPE price & 1M lagging naphtha spread



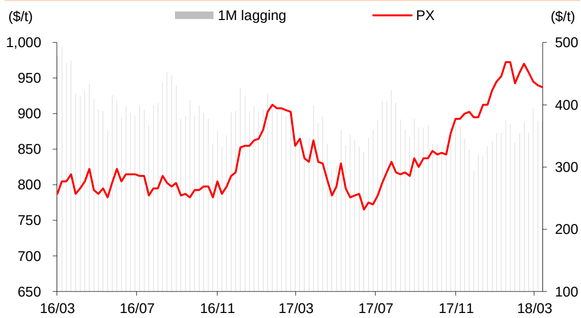
MEG price & 1M lagging naphtha spread



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: 아시아투데이)
제목	셰일가스 매장량 세계 1위 중국, 대량 상용화 단계 진입
결론	중국은 가스 수요 증대분을 자체 셰일가스로도 상당 부분 충당할 것
세부	
	1) 중국 셰일가스 LNG플랜트인 충칭 푸링유전 생산량이 100억㎥/년 도달
	2) 차이나데일리, "중국의 셰일가스 개발이 대량 상용화 단계에 진입함"
	3) 시노펙, "지난해 푸링유전에서 60억㎥ 이상의 셰일가스가 생산됨"
	4) 중국의 셰일가스 매장량은 세계 1위로 36조1000억㎥에 달함
	5) 중국은 가스 수요 증대분을 자체 셰일가스로도 상당 부분 충당할 것

WTI Comment	(출처: 연합뉴스)
제목	감산 기대에 반등…WTI 0.9%↑
상승 요인	OPEC 회원국들과 러시아가 감산 방안을 논의할 것이라는 언론보도
하락 요인	

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

Issue 2	
제목	
결론	
세부	
	1)
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Issue 3	
제목	
결론	
세부	
	1)
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Issue 4	
제목	
결론	
세부	
	1)
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Issue 5	
제목	
결론	
세부	
	1)
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Issue 6	
제목	
결론	
세부	
	1)
	2)
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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.813	0.812	0.813	0.815	0.833	0.846	0.929	0.833	0.904	0.887	0.814
	Change, %		0.1	0.0	(0.3)	(2.4)	(3.9)	(12.5)	(2.4)	(10.1)	(8.3)	(0.1)
	USD/JPY	106.4	106.9	105.3	106.2	112.7	112.5	111.0	112.6	108.8	112.1	108.3
	Change, %		(0.4)	1.1	0.2	(5.6)	(5.4)	(4.2)	(5.5)	(2.1)	(5.1)	(1.8)
	USD/KRW	1,065.9	1,070.7	1,072.2	1,086.3	1,067.4	1,145.4	1,114.3	1,066.7	1,160.5	1,130.9	1,072.4
	Change, %		(0.4)	(0.6)	(1.9)	(0.1)	(6.9)	(4.3)	(0.1)	(8.2)	(5.7)	(0.6)
Agriculture	Corn	387.8	373.5	376.0	378.8	350.8	355.3	358.5	350.8	358.5	359.4	365.8
	Change, %		3.8	3.1	2.4	10.5	9.1	8.2	10.5	8.2	7.9	6.0
	Soybean	1,044.8	1,018.0	1,029.8	1,057.5	951.8	968.3	969.0	951.8	987.5	975.9	1,005.5
	Change, %		2.6	1.5	(1.2)	9.8	7.9	7.8	9.8	5.8	7.1	3.9
	Wheat	451.0	445.5	455.8	505.5	427.0	448.3	425.5	427.0	436.4	436.0	453.1
	Change, %		1.2	(1.0)	(10.8)	5.6	0.6	6.0	5.6	3.3	3.4	(0.5)
	Rice	12.4	12.4	12.3	12.4	11.7	12.0	9.9	11.7	10.3	11.1	12.1
	Change, %		(0.7)	0.2	(0.5)	5.8	3.0	25.2	5.8	19.5	11.7	1.8
	Oats	225.0	221.8	228.8	269.0	241.0	251.3	231.3	241.0	196.3	252.3	255.6
	Change, %		1.5	(1.6)	(16.4)	(6.6)	(10.4)	(2.7)	(6.6)	14.6	(10.8)	(12.0)
MYR/mt	Palm Oil	2,378.0	2,397.0	2,445.0	2,564.0	2,444.0	2,719.0	2,874.0	2,444.0	2,653.8	2,787.3	2,482.1
	Change, %		(0.8)	(2.7)	(7.3)	(2.7)	(12.5)	(17.3)	(2.7)	(10.4)	(14.7)	(4.2)
	Cocoa	2,556.0	2,597.0	2,535.0	2,270.0	1,892.0	2,043.0	2,086.0	1,892.0	2,854.0	2,005.2	2,179.6
	Change, %		(1.6)	0.8	12.6	35.1	25.1	22.5	35.1	(10.4)	27.5	17.3
	Cotton	81.5	80.7	82.2	82.6	78.6	69.1	76.1	78.6	65.6	73.5	80.4
	Change, %		0.9	(0.8)	(1.3)	3.6	17.9	7.0	3.6	24.2	10.8	1.3
	Sugar	12.4	12.2	12.8	13.7	15.2	13.5	17.1	15.2	18.2	15.8	13.5
	Change, %		1.1	(3.3)	(9.9)	(18.5)	(8.8)	(27.9)	(18.5)	(32.0)	(21.9)	(8.3)
	Coffee	118.2	117.8	119.0	122.5	126.2	128.1	139.3	126.2	136.1	133.0	121.2
	Change, %		0.3	(0.7)	(3.5)	(6.4)	(7.7)	(15.2)	(6.4)	(13.2)	(11.2)	(2.5)
Energy	WTI	64.9	64.4	64.3	61.0	60.4	51.7	49.5	60.4	43.4	51.0	62.9
	Change, %		0.9	1.0	6.5	7.5	25.7	31.2	7.5	49.7	27.4	3.2
	Brent	70.3	69.5	68.9	63.8	66.9	57.5	52.4	66.9	45.1	54.9	67.3
	Change, %		1.1	2.0	10.1	5.1	22.1	34.1	5.1	55.9	28.1	4.5
	Natural Gas	2.7	2.7	2.6	2.7	3.0	3.0	3.2	3.0	2.6	3.0	2.8
	Change, %		1.3	4.4	1.3	(7.5)	(9.1)	(13.9)	(7.5)	7.1	(9.6)	(3.9)
	Ethanol	1.5	1.4	1.5	1.5	1.3	1.5	1.6	1.3	1.5	1.5	1.4
	Change, %		2.0	(1.8)	(1.1)	10.2	(3.5)	(7.2)	10.2	(4.0)	(2.9)	2.2
	RBOB Gasoline	201.8	201.2	201.0	189.6	179.9	160.7	167.2	179.9	140.0	162.9	186.3
	Change, %		0.3	0.4	6.4	12.2	25.6	20.7	12.2	44.2	23.9	8.3
	Coal	96.4	96.7	96.7	102.9	100.8	97.3	80.8	100.8	65.5	88.2	102.8
	Change, %		(0.3)	(0.3)	(6.3)	(4.4)	(0.9)	19.4	(4.4)	47.3	9.3	(6.3)
Metal	Gold	1,325.5	1,325.1	1,329.0	1,316.9	1,303.1	1,280.2	1,253.5	1,302.6	1,248.5	1,258.6	1,330.0
	Change, %		0.0	(0.3)	0.7	1.7	3.5	5.7	1.8	6.2	5.3	(0.3)
	Silver	16.4	16.3	16.4	16.5	16.9	16.7	18.2	16.9	17.1	17.1	16.8
	Change, %		0.5	(0.1)	(0.6)	(3.3)	(1.7)	(10.3)	(3.4)	(4.3)	(4.1)	(2.3)
	Copper	6,714.0	6,665.0	6,695.0	6,922.0	7,247.0	6,481.0	5,907.0	7,247.0	4,872.0	6,199.4	6,994.9
	Change, %		0.7	0.3	(3.0)	(7.4)	3.6	13.7	(7.4)	37.8	8.3	(4.0)
	Nickel	841.4	841.4	856.2	873.7	782.9	678.7	646.2	809.1	646.4	680.2	854.3
	Change, %		0.0	(1.7)	(3.7)	7.5	24.0	30.2	4.0	30.2	23.7	(1.5)
	Zinc	3,274.0	3,284.0	3,203.0	3,407.0	3,319.0	3,162.0	2,858.0	3,319.0	2,097.5	2,888.5	3,388.6
	Change, %		(0.3)	2.2	(3.9)	(1.4)	3.5	14.6	(1.4)	56.1	13.3	(3.4)
	Lead	2,399.0	2,429.5	2,368.3	2,444.3	2,482.8	2,494.0	2,347.5	2,482.8	1,868.3	2,315.7	2,518.0
	Change, %		(1.3)	1.3	(1.9)	(3.4)	(3.8)	2.2	(3.4)	28.4	3.6	(4.7)
	Aluminum	13,765.0	13,715.0	13,855.0	14,265.0	15,020.0	16,235.0	13,690.0	15,020.0	12,373.5	14,556.6	14,305.1
	Change, %		0.4	(0.6)	(3.5)	(8.4)	(15.2)	0.5	(8.4)	11.2	(5.4)	(3.8)
	Cobalt	93,550.0	93,300.0	94,300.0	81,000.0	75,205.0	59,094.0	54,750.0	75,205.0	25,480.1	55,906.9	81,820.6
	Change, %		0.3	(0.8)	15.5	24.4	58.3	70.9	24.4	267.1	67.3	14.3
	HR Coil	859.0	860.0	825.0	840.0	662.0	599.0	630.0	662.0	519.3	620.1	747.2
	Change, %		(0.1)	4.1	2.3	29.8	43.4	36.3	29.8	65.4	38.5	15.0
	Scrap	400.0	400.0	410.0	378.0	367.0	340.0	345.0	367.0	275.7	344.7	385.4
	Change, %		0.0	(2.4)	5.8	9.0	17.6	15.9	9.0	45.1	16.0	3.8

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		03/29	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	64.9	64.4	64.3	63.9	60.4	51.6	50.4	53.7	43.4	50.9	62.9
	Change, %		*0.9*	*1.0*	*1.6*	*7.5*	*26.0*	*29.0*	*20.9*	*49.8*	*27.6*	*3.2*
	Dubai	65.3	65.2	65.4	63.9	64.3	55.6	50.7	53.8	41.3	53.1	63.9
	Change, %		*0.1*	*(0.2)*	*2.2*	*1.6*	*17.6*	*28.8*	*21.4*	*58.2*	*23.1*	*2.2*
Crude Oil Product	**Gasoline(휘발유)**	80.5	80.1	79.8	77.5	76.4	70.0	65.6	69.8	56.3	68.0	77.6
	Change, %		*0.4*	*0.9*	*3.9*	*5.3*	*15.0*	*22.6*	*15.2*	*43.1*	*18.3*	*3.7*
	Kerosene(등유)	81.9	81.9	80.9	83.9	79.4	70.6	62.0	66.4	52.9	65.2	80.0
	Change, %		*0.1*	*1.3*	*(2.3)*	*3.2*	*16.1*	*32.2*	*23.3*	*54.9*	*25.6*	*2.5*
	Diesel(경유)	81.7	81.7	80.5	78.7	78.7	70.0	62.4	65.5	52.1	65.6	78.7
	Change, %		*0.0*	*1.5*	*3.8*	*3.8*	*16.7*	*30.8*	*24.7*	*56.8*	*24.5*	*3.8*
	Bunker-C	58.0	58.3	58.4	57.8	58.1	51.7	45.7	52.1	35.5	49.7	57.6
	Change, %		*(0.4)*	*(0.7)*	*0.4*	*(0.1)*	*12.2*	*27.1*	*11.5*	*63.4*	*16.9*	*0.7*
	Naphtha	66.6	66.2	64.8	62.3	67.6	57.0	51.2	53.5	42.6	53.7	63.5
	Change, %		*0.7*	*2.8*	*6.9*	*(1.4)*	*17.0*	*30.3*	*24.7*	*56.4*	*24.0*	*5.0*
Dubai Spread	**Gasoline(휘발유)**	15.2	14.9	14.3	13.6	12.1	14.4	14.9	16.0	14.9	14.9	13.7
	Change		*0.3*	*0.8*	*1.6*	*3.1*	*0.7*	*0.2*	*(0.9)*	*0.2*	*0.2*	*1.5*
	Kerosene(등유)	16.6	16.6	15.4	20.0	15.1	15.0	11.3	12.6	11.6	12.1	16.0
	Change		*0.0*	*1.2*	*(3.4)*	*1.5*	*1.6*	*5.4*	*4.0*	*5.0*	*4.5*	*0.6*
	Diesel(경유)	16.4	16.4	15.0	14.8	14.4	14.5	11.7	11.7	10.8	12.5	14.8
	Change		*(0.0)*	*1.3*	*1.5*	*2.0*	*1.9*	*4.6*	*4.7*	*5.6*	*3.9*	*1.6*
	Bunker-C	(7.3)	(7.0)	(7.0)	(6.1)	(6.3)	(3.8)	(5.1)	(1.8)	(5.8)	(3.4)	(6.3)
	Change		*(0.3)*	*(0.3)*	*(1.2)*	*(1.0)*	*(3.5)*	*(2.2)*	*(5.5)*	*(1.5)*	*(3.9)*	*(1.0)*
	Naphtha	1.3	0.9	(0.6)	(1.6)	3.3	1.4	0.4	(0.4)	1.3	0.6	(0.4)
	Change		*0.4*	*1.9*	*2.9*	*(2.0)*	*(0.1)*	*0.9*	*1.7*	*0.0*	*0.7*	*1.7*
Refining Margin	**Simple(단순)**	2.5	2.6	2.0	2.7	2.1	3.6	2.2	3.8	1.9	3.2	2.3
	Change		*(0.1)*	*0.5*	*(0.2)*	*0.4*	*(1.1)*	*0.3*	*(1.3)*	*0.6*	*(0.6)*	*0.2*
	Complex(복합)	8.8	8.8	7.9	8.0	7.5	8.7	7.3	8.3	7.0	8.0	7.8
	Change		*0.0*	*0.9*	*0.8*	*1.3*	*0.1*	*1.5*	*0.5*	*1.8*	*0.8*	*0.9*
	Complex(lagging)	10.2	11.2	11.6	5.0	10.3	13.7	2.8	18.0	8.5	8.9	8.3
	Change		*(1.0)*	*(1.4)*	*5.2*	*(0.1)*	*(3.5)*	*7.4*	*(7.8)*	*1.7*	*1.3*	*1.9*

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			03/29	03/28	03/27	03/26	03/23	03/22	03/21	03/20	03/19	03/16
Spot Price	**Naphtha**	CFR Japan	606.3	602.5	601.3	601.3	596.0	592.0	582.9	578.5	575.5	572.0
	Ethylene	CFR SE Asia	1,285.0	1,285.0	1,285.0	1,285.0	1,285.0	1,280.0	1,280.0	1,280.0	1,280.0	1,280.0
	Propylene	FOB Korea	1,000.0	1,010.0	1,020.0	1,020.0	1,020.0	1,020.0	1,020.0	1,020.0	1,025.0	1,025.0
	Butadiene	FOB Korea	1,380.0	1,380.0	1,395.0	1,410.0	1,410.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0
	HDPE	CFR FE Asia	1,320.0	1,320.0	1,320.0	1,320.0	1,320.0	1,320.0	1,320.0	1,340.0	1,340.0	1,340.0
	LDPE	CFR FE Asia	1,190.0	1,190.0	1,190.0	1,190.0	1,215.0	1,215.0	1,215.0	1,220.0	1,225.0	1,225.0
	LLDPE	CFR FE Asia	1,160.0	1,160.0	1,160.0	1,175.0	1,190.0	1,190.0	1,190.0	1,200.0	1,205.0	1,205.0
	MEG	CFR China	930.0	929.0	928.0	915.0	898.0	907.0	899.0	908.0	911.0	865.0
	PP	CFR FE Asia	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,210.0	1,190.0	1,200.0	1,220.0	1,200.0
	PX	CFR China	926.0	925.7	928.7	930.8	928.0	936.0	932.0	931.0	933.0	929.0
	PTA	CFR China	760.0	760.0	760.0	761.0	761.0	770.0	769.0	769.0	770.0	770.0
	Benzene	FOB Korea	826.0	827.0	830.3	831.8	836.3	852.3	841.3	850.3	858.3	835.3
	Toluene	FOB Korea	683.0	677.0	677.0	677.0	677.0	678.5	678.0	677.0	677.0	677.0
	Xylene	FOB Korea	737.0	736.5	736.0	734.0	738.0	738.0	737.0	738.0	738.0	744.0
	SM	FOB Korea	1,267.5	1,267.5	1,260.5	1,256.5	1,246.0	1,256.0	1,231.0	1,251.0	1,276.0	1,259.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	596.0	568.0	563.5	597.0	595.5	449.0	484.5	399.5	493.5	580.4
	Change, %			*4.9*	*5.8*	*(0.2)*	*0.1*	*32.7*	*23.0*	*49.2*	*20.8*	*2.7*
	Ethylene	CFR SE Asia	1,265.0	1,250.0	1,165.0	1,272.5	1,195.0	1,045.0	990.0	1,040.9	1,090.9	1,241.9
	Change, %			*1.2*	*8.6*	*(0.6)*	*5.9*	*21.1*	*27.8*	*21.5*	*16.0*	*1.9*
	Propylene	CFR SE Asia	955.0	980.0	1,005.0	897.5	835.0	795.0	815.0	705.7	823.6	1,055.0
	Change, %			*(2.6)*	*(5.0)*	*6.4*	*14.4*	*20.1*	*17.2*	*35.3*	*16.0*	*(9.5)*
	Butadiene	CFR SE Asia	1,355.0	1,390.0	1,370.0	1,125.0	1,025.0	1,750.0	2,100.0	1,116.8	1,481.1	1,317.1
	Change, %			*(2.5)*	*(1.1)*	*20.4*	*32.2*	*(22.6)*	*(35.5)*	*21.3*	*(8.5)*	*2.9*
	Benzene	CFR SE Asia	855.0	867.5	925.0	890.0	877.5	785.0	822.5	646.7	838.8	908.8
	Change, %			*(1.4)*	*(7.6)*	*(3.9)*	*(2.6)*	*8.9*	*4.0*	*32.2*	*1.9*	*(5.9)*
	Toluene	CFR SE Asia	720.0	720.0	750.0	735.0	715.0	690.0	690.0	630.5	689.5	744.6
	Change, %			*0.0*	*(4.0)*	*(2.0)*	*0.7*	*4.3*	*4.3*	*14.2*	*4.4*	*(3.3)*
	Xylene	CFR SE Asia	762.5	762.5	760.0	712.5	695.0	710.0	675.0	627.7	668.8	755.0
	Change, %			*0.0*	*0.3*	*7.0*	*9.7*	*7.4*	*13.0*	*21.5*	*14.0*	*1.0*
Spread	**Ethylene**	-Naphtha	669.0	682.0	601.5	675.5	599.5	596.0	505.5	641.4	597.4	661.5
	Change, %			*(1.9)*	*11.2*	*(1.0)*	*11.6*	*12.2*	*32.3*	*4.3*	*12.0*	*1.1*
	Propylene	-Naphtha	359.0	412.0	441.5	300.5	239.5	346.0	330.5	306.2	330.1	474.6
	Change, %			*(12.9)*	*(18.7)*	*19.5*	*49.9*	*3.8*	*8.6*	*17.3*	*8.8*	*(24.4)*
	Butadiene	-Naphtha	759.0	822.0	806.5	528.0	429.5	1,301.0	1,615.5	717.3	987.6	736.7
	Change, %			*(7.7)*	*(5.9)*	*43.8*	*76.7*	*(41.7)*	*(53.0)*	*5.8*	*(23.1)*	*3.0*
	Benzene	-Naphtha	259.0	299.5	361.5	293.0	282.0	336.0	338.0	247.2	345.3	328.4
	Change, %			*(13.5)*	*(28.4)*	*(11.6)*	*(8.2)*	*(22.9)*	*(23.4)*	*4.8*	*(25.0)*	*(21.1)*
	Toluene	-Naphtha	124.0	152.0	186.5	138.0	119.5	241.0	205.5	231.0	196.0	164.2
	Change, %			*(18.4)*	*(33.5)*	*(10.1)*	*3.8*	*(48.5)*	*(39.7)*	*(46.3)*	*(36.7)*	*(24.5)*
	Xylene	-Naphtha	166.5	194.5	196.5	115.5	99.5	261.0	190.5	228.2	175.3	174.6
	Change, %			*(14.4)*	*(15.3)*	*44.2*	*67.3*	*(36.2)*	*(12.6)*	*(27.0)*	*(5.0)*	*(4.7)*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,272.5	1,282.5	1,282.5	1,182.5	1,207.5	1,137.5	1,142.5	1,134.6	1,142.5	1,259.0
	Change, %			(0.8)	(0.8)	7.6	5.4	11.9	11.4	12.2	11.4	1.1
	MEG	CFR SE Asia	900.0	865.0	1,027.5	922.5	910.0	757.5	847.5	660.8	850.6	985.6
	Change, %			4.0	(12.4)	(2.4)	(1.1)	18.8	6.2	36.2	5.8	(8.7)
	PVC	CFR SE Asia	965.0	970.0	980.0	870.0	850.0	935.0	920.0	823.4	899.9	948.8
	Change, %			(0.5)	(1.5)	10.9	13.5	3.2	4.9	17.2	7.2	1.7
	PP	CFR SE Asia	1,272.5	1,297.5	1,278.5	1,157.5	1,147.5	1,077.5	1,032.5	978.4	1,099.6	1,258.6
	Change, %			(1.9)	(0.5)	9.9	10.9	18.1	23.2	30.1	15.7	1.1
	2-EH	CFR Korea	1,130.0	1,130.0	1,080.0	1,020.0	1,020.0	1,045.0	865.0	772.4	970.0	1,086.7
	Change, %			0.0	4.6	10.8	10.8	8.1	30.6	46.3	16.5	4.0
	ABS	CFR SE Asia	1,970.0	2,020.0	2,060.0	2,050.0	1,960.0	1,730.0	1,635.0	1,347.1	1,844.7	2,042.5
	Change, %			(2.5)	(4.4)	(3.9)	0.5	13.9	20.5	46.2	6.8	(3.5)
	SBR	CFR SE Asia	1,700.0	1,750.0	1,800.0	1,650.0	1,610.0	2,600.0	2,000.0	1,483.0	1,980.5	1,726.7
	Change, %			(2.9)	(5.6)	3.0	5.6	(34.6)	(15.0)	14.6	(14.2)	(1.5)
	SM	CFR SE Asia	1,287.5	1,337.5	1,442.5	1,290.0	1,305.0	1,235.0	1,205.0	1,064.6	1,253.8	1,394.4
	Change, %			(3.7)	(10.7)	(0.2)	(1.3)	4.3	6.8	20.9	2.7	(7.7)
	Caustic	FOB NEA	631.0	601.0	571.0	619.0	700.0	446.0	422.5	316.6	491.2	583.7
	Change, %			5.0	10.5	1.9	(9.9)	41.5	49.3	99.3	28.5	8.1
	PX	CFR SE Asia	937.5	940.0	970.0	912.5	900.0	837.5	855.0	790.4	844.4	952.1
	Change, %			(0.3)	(3.4)	2.7	4.2	11.9	9.6	18.6	11.0	(1.5)
	PO	CFR China	1,757.5	1,875.0	1,955.0	1,995.0	1,677.5	1,485.0	1,562.5	1,396.8	1,601.2	1,926.3
	Change, %			(6.3)	(10.1)	(11.9)	4.8	18.4	12.5	25.8	9.8	(8.8)
	Caprolactam	CFR SE Asia	2,200.0	2,180.0	2,060.0	2,060.0	2,020.0	2,270.0	1,850.0	1,344.9	1,936.4	2,084.2
	Change, %			0.9	6.8	6.8	8.9	(3.1)	18.9	63.6	13.6	5.6
	PTA	CFR SE Asia	776.0	790.0	790.0	717.5	712.5	667.5	642.5	613.7	667.8	773.0
	Change, %			(1.8)	(1.8)	8.2	8.9	16.3	20.8	26.4	16.2	0.4
Spread	HDPE		676.5	714.5	719.0	585.5	612.0	688.5	658.0	735.1	649.0	678.6
	Change, %			(5.3)	(5.9)	15.5	10.5	(1.7)	2.8	(8.0)	4.2	(0.3)
	MEG		304.0	297.0	464.0	325.5	314.5	308.5	363.0	261.3	357.1	405.3
	Change, %			2.4	(34.5)	(6.6)	(3.3)	(1.5)	(16.3)	16.4	(14.9)	(25.0)
	PVC		369.0	402.0	416.5	273.0	254.5	486.0	435.5	423.9	406.4	368.4
	Change, %			(8.2)	(11.4)	35.2	45.0	(24.1)	(15.3)	(12.9)	(9.2)	0.2
	PP		676.5	729.5	715.0	560.5	552.0	628.5	548.0	578.9	606.1	678.3
	Change, %			(7.3)	(5.4)	20.7	22.6	7.6	23.4	16.9	11.6	(0.3)
	2-EH		534.0	562.0	516.5	423.0	424.5	596.0	380.5	372.9	476.5	506.3
	Change, %			(5.0)	3.4	26.2	25.8	(10.4)	40.3	43.2	12.1	5.5
	ABS		1,374.0	1,452.0	1,496.5	1,453.0	1,364.5	1,281.0	1,150.5	947.6	1,351.2	1,462.1
	Change, %			(5.4)	(8.2)	(5.4)	0.7	7.3	19.4	45.0	1.7	(6.0)
	SBR	BD spread	345.0	360.0	430.0	525.0	585.0	850.0	(100.0)	366.2	499.4	409.6
	Change, %			(4.2)	(19.8)	(34.3)	(41.0)	(59.4)	(445.0)	(5.8)	(30.9)	(15.8)
	SM		691.5	769.5	879.0	693.0	709.5	786.0	720.5	665.1	760.3	814.0
	Change, %			(10.1)	(21.3)	(0.2)	(2.5)	(12.0)	(4.0)	4.0	(9.0)	(15.0)
	Caustic											
	Change, %											
	PX		341.5	372.0	406.5	315.5	304.5	388.5	370.5	390.9	351.0	371.7
	Change, %			(8.2)	(16.0)	8.2	12.2	(12.1)	(7.8)	(12.6)	(2.7)	(8.1)
	PO	propylene sprea	802.5	895.0	950.0	1,097.5	842.5	690.0	747.5	691.1	777.6	871.3
	Change, %			(10.3)	(15.5)	(26.9)	(4.7)	16.3	7.4	16.1	3.2	(7.9)
	Caprolactam	benzene spread	1,345.0	1,312.5	1,135.0	1,170.0	1,142.5	1,485.0	1,027.5	698.2	1,097.6	1,175.4
	Change, %			2.5	18.5	15.0	17.7	(9.4)	30.9	92.6	22.5	14.4
	PTA	px spread	119.8	132.0	111.0	78.8	82.5	81.3	44.0	60.4	76.7	106.5
	Change, %			(9.3)	7.9	52.1	45.2	47.4	172.2	98.2	56.1	12.4

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

SK Energy Daily

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SK 증권

Global peers

	Currency	03/29	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	63.7	2.1	(2.9)	(7.3)	(10.5)	(8.0)	(1.1)	(10.5)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	105.6	1.3	1.5	5.1	14.0	16.7	31.2	14.0	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	82.5	1.5	0.2	(2.0)	(10.1)	(8.1)	(10.1)	(10.1)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	76.7	(1.9)	(1.1)	(1.3)	5.1	(1.8)	(0.2)	5.1	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	106.0	(0.3)	(1.4)	0.3	4.4	2.2	15.3	4.4	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	62.2	0.9	(1.3)	(7.9)	(6.2)	(6.8)	(1.0)	(6.2)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	608	0.3	(1.0)	(7.3)	(24.9)	(13.5)	(3.2)	(24.9)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,020	0.8	(0.3)	(5.3)	(17.5)	(4.9)	18.1	(17.5)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,875	(0.5)	(2.9)	(0.7)	(5.0)	8.1	10.7	(5.0)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,399	(0.6)	0.0	3.9	(3.8)	1.0	27.0	(3.8)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,363	(0.5)	(1.7)	(6.3)	6.5	10.5	21.9	6.5	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	7,912	1.2	(2.3)	(9.9)	(21.0)	(15.7)	(8.8)	(21.0)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	116.4	(0.8)	3.2	11.2	14.3	13.2	20.5	14.8	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	73.1	(0.0)	3.8	8.0	25.5	23.1	27.1	23.8	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	103.0	0.0	(1.0)	1.0	4.4	12.2	11.2	4.4	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	109.0	0.0	(1.8)	2.8	5.8	18.2	16.0	5.8	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	81.8	(0.8)	(1.6)	3.4	5.0	9.5	12.7	5.0	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	6.02	0.7	(1.1)	2.0	(4.9)	(4.6)	(6.5)	(4.9)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.13	(4.9)	(8.2)	(7.4)	(20.2)	(32.4)	(43.2)	(20.2)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	883	0.0	(2.8)	(6.9)	(4.2)	13.0	40.5	(3.0)	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	105.1	(0.7)	(3.0)	1.0	7.2	14.6	(5.0)	8.4	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	94.8	(2.1)	(3.3)	(4.5)	11.5	23.1	31.6	11.5	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.2	(1.2)	(0.7)	0.6	5.8	11.8	7.0	5.8	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	386,000	0.0	(5.6)	0.8	(4.7)	(1.5)	28.9	(4.7)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	433,000	(0.6)	(1.5)	(5.7)	17.7	14.6	19.4	17.7	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	29,550	1.4	(3.3)	(11.0)	(6.5)	(8.9)	13.0	(6.5)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	96,800	0.7	(2.8)	6.8	(2.7)	34.3	22.2	(2.7)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	38,200	0.0	(2.4)	(2.7)	(18.7)	(7.4)	24.4	(18.7)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	59,800	0.7	(3.9)	(2.6)	(5.2)	8.3	22.0	(5.2)	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	9,710	0.6	(1.4)	1.3	28.1	46.0	12.3	28.1	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**(0.1)**	**(1.7)**	**(1.4)**	**(0.4)**	**5.6**	**11.8**	**(0.3)**							
Refinery																
Valero	USD	92.8	2.8	(0.3)	2.1	0.9	20.6	38.2	0.9	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	59.3	1.0	4.9	10.0	8.0	18.5	29.0	8.0	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	118.5	0.0	1.7	3.5	2.6	13.4	11.3	2.6	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	100.6	1.5	(0.4)	10.4	(12.1)	(2.5)	21.1	(12.1)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	73.1	1.8	0.2	12.8	10.8	30.4	44.6	10.8	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	31.8	1.9	(1.5)	4.1	(23.2)	(13.4)	(22.9)	(23.2)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	48.9	2.7	1.4	12.5	(4.6)	35.8	71.6	(4.6)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	95.9	1.7	1.3	5.6	(5.2)	4.7	22.5	(5.2)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	25.8	1.9	0.6	0.1	(16.8)	(2.7)	(8.5)	(16.8)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	637.6	0.7	(1.9)	(2.1)	(12.3)	10.1	19.5	(12.3)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,000.0	0.4	(3.5)	(0.7)	(11.6)	26.0	3.0	(11.6)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	56.6	1.4	(0.8)	(4.1)	6.1	53.2	53.8	6.1	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	69.8	1.0	2.4	(0.4)	(2.0)	6.7	15.6	(2.0)	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	44.1	(0.1)	(2.9)	(4.3)	(0.3)	(12.0)	(1.5)	(0.3)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	210,000	1.4	(1.6)	2.2	2.7	5.5	28.8	2.7	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	119,500	2.1	0.0	(3.2)	2.1	(6.3)	21.3	2.1	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	61,600	(1.0)	(4.3)	(6.8)	(1.0)	(6.1)	8.3	(1.0)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**1.3**	**(0.3)**	**2.5**	**(3.3)**	**10.7**	**20.9**	**(3.3)**							

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

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SK 증권

Global peers

	Currency	03/29	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
E&P/Shale																
Exxon Mobil	USD	75	2.5	1.5	(0.8)	(10.8)	(9.0)	(9.0)	(10.8)	316,157	16.0	15.9	1.7	1.6	7.3	7.1
BP	GBP	479	1.7	3.4	1.2	(8.3)	0.4	3.9	(8.3)	134,037	14.9	14.1	1.4	1.3	5.3	5.1
Shell	EUR	2,234	0.1	1.3	(2.5)	(9.9)	(0.7)	4.9	(9.9)	263,466	13.2	12.3	1.3	1.3	5.8	5.6
Chevron	USD	114	1.7	0.3	1.8	(8.9)	(2.9)	5.5	(8.9)	217,845	18.4	18.1	1.5	1.5	6.5	6.3
Total	EUR	46	0.6	(0.3)	(0.6)	0.2	1.5	(1.0)	0.2	149,333	11.9	11.6	1.2	1.2	5.2	4.9
Sinopec	CNY	7	3.0	(3.2)	3.6	8.0	12.2	16.3	8.0	122,753	11.8	11.1	1.0	1.0	4.0	4.0
Petrochina	CNY	8	1.3	(4.3)	(4.0)	(4.8)	(3.6)	(1.9)	(4.8)	212,285	25.7	21.0	1.1	1.1	5.6	5.4
CNOOC	CNY	11	2.4	(2.1)	3.1	7.6	0.1	(10.8)	7.6	65,761	9.1	9.0	1.0	0.9	3.6	3.5
Gazprom	RUB	143	1.7	2.4	1.9	9.4	16.9	10.9	9.4	58,981	3.9	4.0	0.3	0.2	3.6	3.6
Rosneft	RUB	316	2.4	0.1	(2.2)	8.5	(0.8)	(1.8)	8.5	58,495	7.7	6.6	0.8	0.7	4.8	4.5
Anadarko	USD	60	2.6	(0.4)	5.8	12.6	23.7	(3.3)	12.6	31,131	40.6	37.9	2.5	2.4	6.3	5.8
Petrobras	BRL	21	1.0	(1.4)	1.8	33.0	39.9	48.2	33.0	88,937	10.4	8.6	0.9	0.8	5.4	5.0
Lukoil	USD	3,992	1.6	3.5	6.3	19.7	30.3	30.4	19.7	58,604	6.2	6.1	0.8	0.7	N/A	N/A
Kinder	USD	15	1.7	(2.0)	(7.1)	(16.7)	(21.5)	(29.7)	(16.7)	47,497	18.3	16.6	1.0	1.0	9.8	9.5
Statoil	NOK	185	0.0	2.6	3.2	5.4	15.9	27.4	5.4	78,559	15.8	15.0	1.9	1.8	3.6	3.5
BHP	AUD	28	(1.6)	(5.0)	(6.3)	(4.6)	9.4	17.7	(4.6)	111,090	14.8	15.6	1.9	1.8	5.8	5.9
PTT E&P	THB	115	(1.7)	(1.3)	(0.9)	14.5	27.9	24.1	14.5	14,548	13.1	12.4	1.2	1.1	3.7	3.6
Petronas gas	MYR	18	(0.1)	(1.0)	2.2	1.9	(0.4)	(10.0)	1.9	9,113	18.7	18.4	2.7	2.6	10.4	10.2
Chesapeake	USD	3	1.0	(2.9)	7.9	(23.7)	(29.8)	(48.0)	(23.7)	2,746	4.0	4.2	#N/A N/A	4.9	5.9	5.9
Noble Energy	USD	30	3.2	(0.8)	0.8	4.0	6.8	(12.8)	4.0	14,913	38.7	25.4	1.4	1.3	7.5	6.5
Average		**0**	**1.3**	**(0.5)**	**0.8**	**1.9**	**5.8**	**3.0**	**1.9**							
PV																
WACKER	EUR	133.4	0.8	0.1	(0.9)	(17.8)	9.9	37.0	(17.8)	8,548	19.4	16.5	2.0	1.9	6.7	6.4
GCL-Poly	HKD	1.0	(1.0)	(4.9)	(19.8)	(30.7)	(9.3)	(7.6)	(30.7)	2,298	6.1	5.4	0.6	0.5	6.2	5.7
SunPower	USD	8.0	4.2	2.8	13.0	(5.3)	9.5	30.2	(5.3)	1,117	#N/A N/A	49.3	4.7	4.1	13.3	9.0
Canadian Solar	USD	16.3	2.2	(4.0)	3.2	(3.5)	(3.4)	40.7	(3.5)	944	10.8	9.7	1.0	0.9	8.6	8.9
JA Solar	USD	6.6	4.8	(1.8)	(11.5)	(12.1)	(13.9)	3.1	(12.1)	312	12.4	10.3	1.4	1.4	3.8	3.5
Yingli	USD	1.7	(1.2)	8.4	1.8	(0.6)	(26.0)	(22.2)	(0.6)	31	#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	71.0	2.4	(1.5)	14.3	5.1	54.7	153.2	5.1	7,416	42.6	21.7	1.4	1.3	12.7	7.5
한화큐셀	USD	7.6	3.3	(4.9)	(5.4)	8.0	(7.7)	5.6	8.0	631	34.5	24.5	#N/A N/A	#N/A N/A	8.2	7.4
OCI	KRW	158,000	3.3	0.3	(4.0)	16.2	54.1	86.1	16.2	3,549	0.0	14.3	0.0	1.0	0.0	6.8
웅진에너지	KRW	6,670	1.1	(5.0)	(8.0)	(18.9)	(11.7)	32.6	(18.9)	187	N/A	0.0	1.0	0.0	6.8	0.0
신성솔라에너지	KRW	1,730	1.5	(2.0)	(4.4)	(9.7)	(3.9)	(5.2)	(9.7)	282	N/A	1.0	0.0	6.8	0.0	8.2
Average			**1.9**	**(1.1)**	**(2.0)**	**(6.3)**	**4.8**	**32.1**	**(6.3)**							
Gas Company																
Towngas China	HKD	6.8	(1.4)	(3.0)	7.1	8.8	24.6	56.7	8.8	2,409	13.5	12.1	1.1	1.1	11.9	10.8
Kulun	HKD	6.8	1.0	(1.3)	(8.3)	(16.8)	(11.3)	(4.8)	(16.8)	6,963	9.1	8.0	1.0	0.9	5.5	5.0
Beijing Enterprise	HKD	41.0	(1.7)	(2.1)	(5.2)	(11.6)	(2.4)	0.0	(11.6)	6,593	7.2	6.5	0.7	0.7	12.6	12.2
ENN Energy	HKD	70.1	3.0	9.3	14.4	25.7	23.9	58.4	25.7	9,686	15.3	13.1	3.0	2.6	9.2	8.2
China Resources Gas	HKD	27.3	3.2	0.9	2.1	(3.9)	0.2	2.8	(3.9)	7,722	14.6	13.2	2.5	2.2	8.2	7.6
China Gas Holdings	HKD	28.6	0.9	2.5	15.4	32.2	22.0	127.7	32.2	18,074	19.5	16.5	4.8	4.0	14.9	12.8
Shenzen Gas	HKD	17.2	0.0	2.5	7.2	15.5	17.0	48.6	15.5	4,448	11.3	9.7	1.4	1.3	7.6	6.6
Shann Xi	CNY	6.9	1.0	(4.7)	(6.6)	(17.9)	(16.3)	(27.0)	(17.9)	1,223	13.1	14.9	1.3	1.2	#N/A N/A	#N/A N/A
Suntien	HKD	2.2	0.5	1.4	16.4	6.3	13.4	49.7	6.3	1,041	6.0	5.2	0.7	0.6	7.7	6.7
China Oil & Gas	HKD	0.6	(4.5)	(10.0)	(8.7)	(25.9)	18.9	1.6	(25.9)	468	9.7	8.4	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.2**	**(0.5)**	**3.4**	**1.2**	**9.0**	**31.4**	**1.2**							
EV																
LG화학	KRW	386,000	0.0	(5.6)	0.8	(4.7)	(1.5)	28.9	(4.7)	25,661	13.6	12.5	1.6	1.5	6.2	5.7
삼성SDI	KRW	191,000	(3.0)	(8.2)	11.7	(6.6)	(3.8)	36.9	(6.6)	12,369	15.0	11.1	1.1	1.0	12.1	9.7
Panasonic	JPY	1503.5	(4.0)	(8.6)	(8.9)	(8.9)	(7.8)	18.6	(8.9)	34,657	14.2	12.3	1.9	1.7	5.5	5.1
GS Yuasa	JPY	571.0	0.7	(0.9)	(1.7)	1.8	(3.4)	9.0	1.8	2,219	15.4	14.0	1.3	1.2	7.1	6.6
NEC	JPY	2960.0	(2.0)	(6.9)	(8.6)	(2.6)	(3.0)	7.2	(2.6)	7,245	20.0	14.0	0.8	0.8	6.6	5.9
BYD Auto	CNY	56.0	(0.4)	(10.5)	(11.5)	(13.9)	(18.0)	14.7	(13.9)	23,240	24.7	20.0	2.5	2.3	12.3	10.7
Tesla Motors	USD	266.1	3.2	(13.9)	(19.6)	(14.5)	(22.0)	(4.1)	(14.5)	44,955	#N/A N/A	112.9	9.5	8.7	41.1	15.5
Kandi Technologies	USD	4.9	(1.0)	(2.0)	(4.9)	(28.7)	(15.7)	27.6	(28.7)	262	#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			**(0.8)**	**(7.1)**	**(5.4)**	**(9.8)**	**(9.4)**	**17.4**	**(9.8)**							

＊ Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임