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1. News Summary (3 page)

2016년 5월 17일

News		Conclusion
WTI comment	공급부족 기대감에 유가 급등	
Headline	미국 1Q16 PE capacity YoY +0.7%, 올해부터 본격증대 시작	올 해부터 설비증설 차츰 증대, 특히 내년에 많은 것으로 조사됨
News 1.	롯데케미칼, 영국법인(PET) 투자금 1,388억원 전액 손실처리	PET/PTA 공급과잉 개선 가능성 높지 않음, 추가 증자 가능성에 관심
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	47.7	3.3	9.9	18.2	64.3	(19.7)
Dubai	$/bbl	45.4	2.2	5.9	15.2	47.9	(28.7)
Gasoline	$/bbl	60.0	2.2	5.5	10.3	28.6	(30.1)
Diesel	$/bbl	55.4	2.0	5.4	15.4	34.9	(30.6)
Complex margin	$/bbl	5.4	0.1	0.2	0.2	(2.3)	(5.9)
1M lagging	$/bbl	11.1	1.5	(0.5)	1.3	(1.0)	(5.2)
Petrochemical			%	%	%	%	%
Naphtha	$/t	427	2.8	7.3	6.8	26.8	(27.9)
Butadiene	$/t	1,075	0.0	0.0	7.5	33.5	2.4
HDPE	$/t	1,130	0.0	0.0	(5.0)	4.6	(18.7)
MEG	$/t	620	0.2	0.0	(6.2)	(2.8)	(37.4)
PX	$/t	779	1.2	1.0	(0.5)	6.9	(17.9)
SM	$/t	997	0.6	(2.5)	(6.4)	5.4	(30.5)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.03	(3.2)	(3.3)	(0.8)	(6.2)	(35.9)
Natural rubber	$/t	1,400	0.7	0.0	(7.3)	30.8	(6.0)
Cotton	C/lbs	61.0	0.6	(0.6)	(2.0)	3.3	(7.3)

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	05/16	$/t	1,125	0.0	(1.7)	25.7	(19.1)
Propylene	05/16	$/t	695	1.5	(6.4)	6.1	(25.3)
Benzene	05/16	$/t	658	(1.1)	1.2	22.9	(17.3)
Toluene	05/16	$/t	650	(3.0)	(0.8)	12.1	(21.7)
Xylene	05/16	$/t	645	(2.3)	(0.8)	11.2	(21.8)
PP	05/16	$/t	995	(2.5)	(6.6)	17.8	(27.6)
PVC	05/16	$/t	830	0.0	3.8	14.5	(6.2)
ABS	05/16	$/t	1,285	(2.7)	(3.7)	13.7	(24.4)
SBR	05/16	$/t	1,545	0.0	6.9	29.3	5.1
SM	05/16	$/t	1,048	(3.2)	(5.0)	7.4	(27.9)
BPA	05/16	$/t	1,228	(2.8)	(5.0)	5.4	(31.1)
Caustic	05/16	$/t	295	0.9	1.7	2.6	(1.7)
2-EH	05/16	$/t	810	0.0	1.3	18.2	(24.1)
Caprolactam	05/16	$/t	1,340	0.0	1.5	20.7	(23.2)
Solar				%	%	%	%
Polysilicon	05/11	$/kg	16.9	1.9	14.0	30.9	5.9
Module	05/11	$/W	0.52	(0.6)	(2.3)	(6.0)	(7.8)

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	89.6	1.0	1.1	5.4	10.3	2.5
Shell	EUR	1,745	1.1	2.5	(3.8)	11.4	(12.4)
Petrochina	CNY	7.20	0.1	0.0	(7.1)	(2.0)	(40.5)
Gazprom	RUB	158.1	(1.1)	(0.8)	6.8	16.4	3.3
Petrobras	BRL	9.8	3.1	2.8	0.6	119.6	(30.7)
Refinery							
Phillips66	USD	78.7	0.4	0.5	(7.3)	0.5	(2.9)
Valero	USD	55.2	0.1	0.4	(7.2)	(3.8)	(7.4)
JX	JPY	425.0	(2.0)	(5.5)	(6.6)	(6.4)	(21.1)
Neste Oil	EUR	28.5	0.6	2.4	(2.8)	6.0	26.5

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	67.8	0.7	(1.4)	(0.4)	15.5	(21.3)
Dow Chemical	USD	51.6	2.1	1.5	(1.5)	10.2	0.2
SABIC	SAR	83.8	(0.3)	(0.0)	9.5	23.3	(22.1)
Formosa Pla.	TWD	77.2	0.9	(0.5)	(5.9)	1.0	(0.8)
Shin-Etsu	JPY	6,238	1.1	2.9	1.8	8.9	(15.6)
Renewable							
Wacker	EUR	83.1	0.0	0.8	6.7	35.3	(23.7)
Yingli	USD	3.40	5.3	12.6	(33.3)	(22.0)	(80.0)
Tesla	USD	208.3	0.3	(0.3)	(18.2)	34.2	(16.3)
BYD	CNY	60.6	2.3	2.6	4.0	16.3	(0.4)

4. Coverage Summary

	05/16	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,968	0.0	0.0	(2.3)	4.2	(0.3)	(6.6)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,444	0.0	1.0	(2.6)	9.3	9.7	8.3				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	283,500	0.7	2.0	(15.4)	(3.4)	(5.3)	7.0	매수	400,000	41.1	12.49	1.50
롯데케미칼	288,500	(0.2)	1.9	(11.8)	1.1	27.7	25.2	매수	340,000	17.9	9.75	1.12
한화케미칼	23,350	(1.9)	(1.9)	(10.0)	(3.3)	10.9	41.1	매수	30,000	28.5	9.22	0.76
금호석유화학	66,800	0.9	4.4	(1.6)	17.2	16.2	(19.0)	매수	70,000	4.8	13.17	1.32
KCC	403,000	(0.1)	(1.2)	(3.8)	(5.2)	(6.1)	(22.8)	매수	550,000	36.5	14.34	0.62
OCI	109,500	(3.1)	(2.2)	9.9	52.9	44.6	11.5	매수	120,000	9.6	20.57	0.95
SKC	29,050	0.5	6.0	(3.5)	(1.4)	(19.6)	(29.0)	매수	37,000	27.4	9.06	0.71
국도화학	63,100	0.2	1.6	(8.2)	18.4	7.1	(1.7)	매수	100,000	58.5	7.18	0.73
SK이노베이션	154,500	0.7	5.5	(6.9)	12.8	35.5	36.7	매수	180,000	16.5	11.56	0.94
S-Oil	84,900	1.0	3.9	(6.8)	9.7	24.3	27.3	매수	100,000	17.8	11.97	1.47
GS	51,600	0.0	(2.5)	(10.7)	2.2	5.3	3.3	매수	65,000	26.0	7.39	0.86
SK가스	83,800	(0.2)	2.7	2.2	12.2	4.2	(20.2)	매수	100,000	19.3	11.89	0.73
대우인터내셔널	23,200	(2.5)	3.6	(3.9)	17.5	22.4	(18.6)	매수	27,000	16.4	10.73	1.03
LG상사	35,750	(0.8)	1.7	(4.2)	5.6	9.3	(15.7)	매수	42,000	17.5	10.55	0.92

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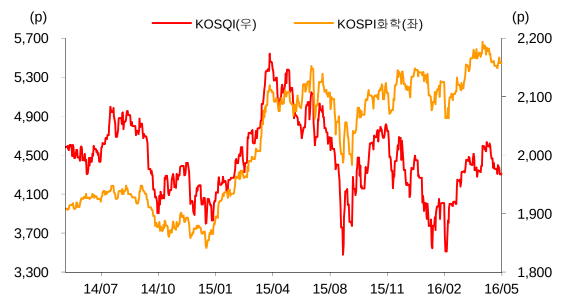
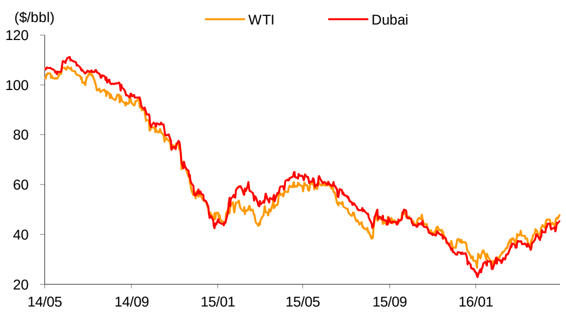
Key Chart

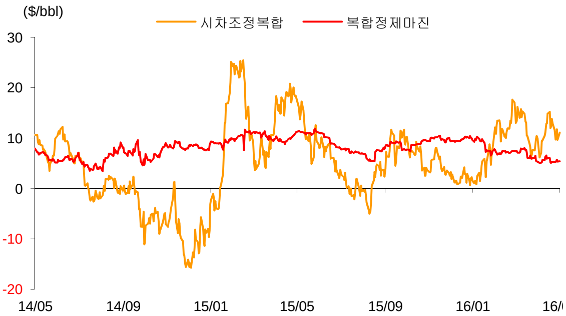
KOSPI/KOSPI화학



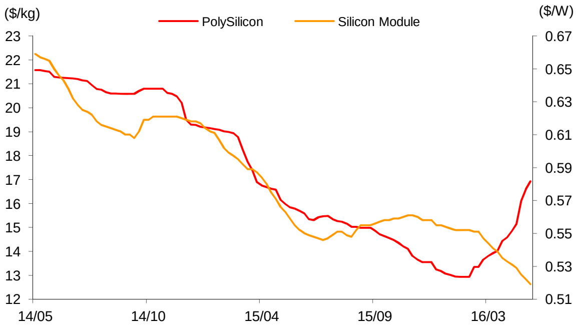
WTI/Dubai



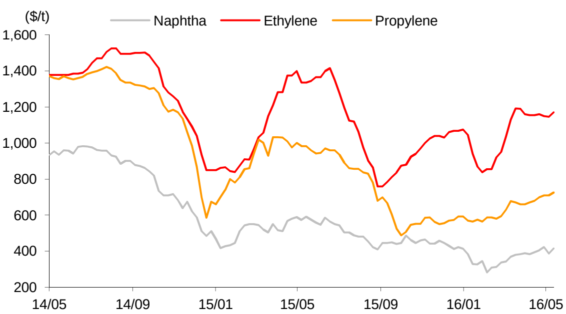
Complex & 1M lagging margin



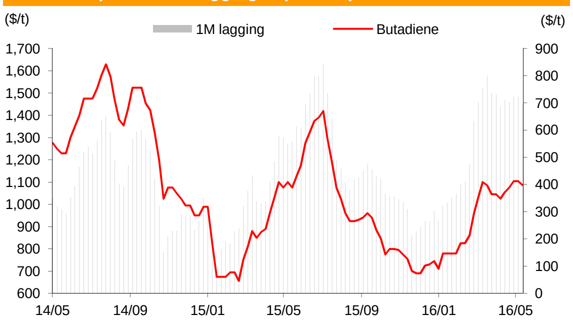
Polysilicon & Module prices



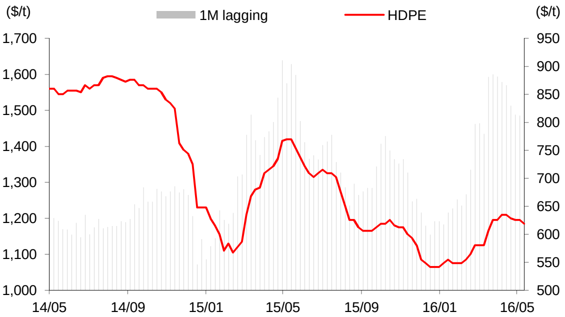
Naphtha/Ethylene/Propylene prices



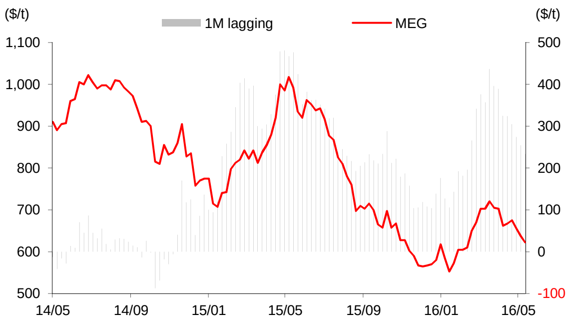
Butadiene price & 1M lagging naphtha spread



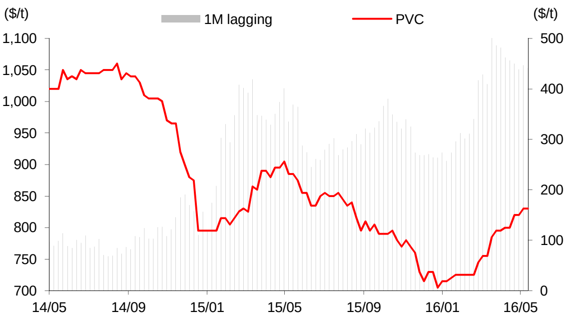
HDPE price & 1M lagging naphtha spread



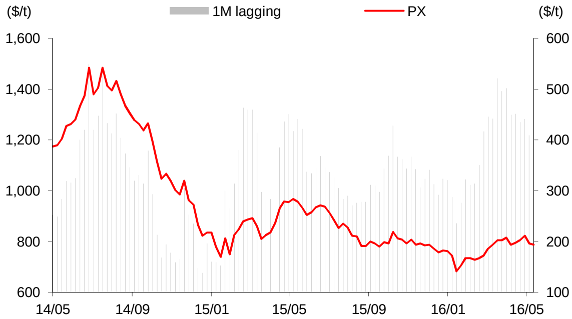
MEG price & 1M lagging naphtha spread



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: Platts)
제목	미국 1Q16 PE capacity YoY +0.7%, 올해부터 본격증대 시작
결론	올 해부터 설비증설 차츰 증대, 특히 내년에 많은 것으로 조사됨
세부	
	1) American Chemistry Council 발표, 전년동기대비 0.74%(323만파운드) 증대
	2) HDPE가 3.69% 증대되면서 견인, 반면 LDPE -0.36%, LLDPE -2.44%
	3) 1분기 현재 정기보수까지 겹치면서 특히 LDPE/LLDPE 수급 타이트함
	4) 금번 자료는 멕시코의 Braskem 설비(PE 100만톤/년)는 포함하지 않았음
	5) 올 해부터 설비증설 차츰 증대, 특히 내년에 많은 것으로 조사됨

WTI Comment	(출처: 연합뉴스)
제목	공급부족 기대감에 유가 급등
상승 요인	나이지리아/캐나다/베네수엘라 생산차질, 최대 375만b/d 감소 가능 골드만삭스, "우리가 예상했던 것보다 훨씬 이른 시기에 공급부족 올 것
하락 요인	

Issue 1	(출처: 더벨)
제목	롯데케미칼, 영국법인(PET) 투자금 1,388억원 전액 손실처리
결론	PET/PTA 공급과잉 개선 가능성 높지 않음, 추가 증자 가능성에 관심
세부	
	1) 롯데케미칼, 2010년 581억원 출자해 영국법인 설립(PET/PTA 생산설비)
	2) 그러나 2012년 이후 대규모 적자 시작, 3년간 누적적자 2,360억원
	3) 이미 14년 영국법인 장부가 "0"되었으며, 추가투입한 522억원도 손상차손
	4) 현재 영국법인은 자산 3,016억원에 부채 3,795억원으로 자본잠식 상황임
	5) PET/PTA 공급과잉 개선 가능성 높지 않음, 추가 증자 가능성에 관심

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

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

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

Issue 5	
제목	
결론	
세부	
	1)
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Issue 6	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
F/X	**USD/EUR**	0.883	0.884	0.879	0.886	0.897	0.936	0.874	0.921	0.754	0.901	0.897
	Change, %		(0.1)	0.5	(0.3)	(1.5)	(5.6)	1.1	(4.1)	17.2	(2.0)	(1.6)
	USD/JPY	109.0	108.6	108.3	108.8	114.1	123.2	119.3	120.6	105.9	121.1	113.2
	Change, %		0.4	0.7	0.2	(4.4)	(11.5)	(8.6)	(9.6)	2.9	(9.9)	(3.7)
	USD/KRW	1,179.6	1,171.5	1,165.8	1,146.2	1,216.5	1,173.9	1,085.7	1,172.6	1,053.0	1,131.2	1,184.4
	Change, %		0.7	1.2	2.9	(3.0)	0.5	8.7	0.6	12.0	4.3	(0.4)
Agriculture	**Corn**	394.0	382.0	367.8	378.5	363.0	360.0	365.5	358.8	415.6	376.8	367.1
	Change, %		3.1	7.1	4.1	8.5	9.4	7.8	9.8	(5.2)	4.6	7.3
	Soybean	1,064.5	1,055.0	1,018.8	956.0	879.8	859.5	953.3	871.3	1,245.5	945.4	917.5
	Change, %		0.9	4.5	11.3	21.0	23.9	11.7	22.2	(14.5)	12.6	16.0
	Wheat	474.8	465.0	447.0	459.8	464.3	494.0	511.0	470.0	588.0	508.1	466.0
	Change, %		2.1	6.2	3.3	2.3	(3.9)	(7.1)	1.0	(19.3)	(6.6)	1.9
	Rice	11.9	11.5	11.0	10.3	10.8	11.8	9.6	11.6	14.0	11.1	10.7
	Change, %		3.9	8.6	15.7	10.1	0.8	24.6	3.2	(14.5)	7.9	11.3
	Oats	197.0	179.0	177.3	189.5	199.3	235.0	248.5	217.3	373.1	250.2	191.5
	Change, %		10.1	11.1	4.0	(1.1)	(16.2)	(20.7)	(9.3)	(47.2)	(21.3)	2.9
MYR/mt	**Palm Oil**	2,626.0	2,635.0	2,675.0	2,638.0	2,526.0	2,132.0	2,199.0	2,398.0	2,415.1	2,190.3	2,524.6
	Change, %		(0.3)	(1.8)	(0.5)	4.0	23.2	19.4	9.5	8.7	19.9	4.0
	Cocoa	2,927.0	2,961.0	3,059.0	2,941.0	2,793.0	3,369.0	3,133.0	3,211.0	3,006.8	3,091.6	2,957.2
	Change, %		(1.1)	(4.3)	(0.5)	4.8	(13.1)	(6.6)	(8.8)	(2.7)	(5.3)	(1.0)
	Cotton	61.0	60.6	61.3	60.0	59.9	61.7	66.8	63.3	76.4	63.3	60.3
	Change, %		0.6	(0.6)	1.6	1.9	(1.2)	(8.8)	(3.6)	(20.1)	(3.6)	1.1
	Sugar	16.9	16.7	15.9	15.0	13.2	15.2	12.9	15.2	16.3	13.1	14.8
	Change, %		0.9	6.4	12.3	27.8	11.3	31.0	10.8	3.5	28.5	14.3
	Coffee	132.7	128.8	125.2	123.0	114.9	114.4	137.2	126.7	177.1	132.6	121.2
	Change, %		3.0	6.0	7.9	15.5	16.0	(3.3)	4.7	(25.1)	0.0	9.5
Energy	**WTI**	47.7	46.2	43.4	40.4	29.0	41.7	59.7	37.0	92.9	48.8	36.8
	Change, %		3.3	9.9	18.2	64.3	14.3	(20.1)	28.8	(48.7)	(2.3)	29.8
	Brent	49.0	47.8	43.6	43.1	32.2	44.6	66.8	37.3	99.5	53.7	38.5
	Change, %		2.4	12.2	13.6	52.2	9.9	(26.7)	31.4	(50.8)	(8.8)	27.3
	Natural Gas	2.0	2.1	2.1	1.9	1.9	2.4	3.0	2.3	4.3	2.6	2.0
	Change, %		(3.2)	(3.3)	6.7	6.6	(14.9)	(32.7)	(13.2)	(52.4)	(22.8)	0.8
	Ethanol	1.6	1.5	1.5	1.5	1.4	1.5	1.7	1.4	2.1	1.5	1.4
	Change, %		1.6	4.8	1.4	13.6	7.2	(6.7)	12.0	(23.9)	3.9	9.0
	RBOB Gasoline	160.6	158.8	144.3	146.1	97.1	123.9	205.7	126.7	262.6	163.6	129.0
	Change, %		1.1	11.3	9.9	65.4	29.7	(21.9)	26.8	(38.8)	(1.8)	24.6
	Coal	43.5	43.6	43.6	43.6	43.2	41.8	46.8	43.3	57.5	45.2	43.4
	Change, %		(0.3)	(0.3)	(0.3)	0.8	4.2	(7.0)	0.4	(24.4)	(3.7)	0.1
Metal	**Gold**	1,274.2	1,273.1	1,263.9	1,234.2	1,200.4	1,082.8	1,224.1	1,061.4	1,266.5	1,160.6	1,206.2
	Change, %		0.1	0.8	3.2	6.1	17.7	4.1	20.0	0.6	9.8	5.6
	Silver	17.1	17.1	17.0	16.2	15.2	14.3	17.5	13.8	19.1	15.7	15.5
	Change, %		0.2	0.6	5.6	12.6	20.3	(2.0)	24.1	(10.1)	9.0	10.8
	Platinum	1,051.3	1,052.5	1,044.9	985.0	930.4	866.0	1,168.1	891.1	1,384.6	1,055.7	951.2
	Change, %		(0.1)	0.6	6.7	13.0	21.4	(10.0)	18.0	(24.1)	(0.4)	10.5
	Palladium	591.2	593.0	584.8	568.5	508.6	550.9	793.5	563.0	803.4	691.9	546.4
	Change, %		(0.3)	1.1	4.0	16.3	7.3	(25.5)	5.0	(26.4)	(14.6)	8.2
	Copper	4,645.0	4,627.5	4,686.0	4,807.5	4,557.0	4,690.0	6,415.0	4,705.0	6,828.1	5,503.1	4,729.5
	Change, %		0.4	(0.9)	(3.4)	1.9	(1.0)	(27.6)	(1.3)	(32.0)	(15.6)	(1.8)
	Uranium	28.4	28.0	27.7	25.9	34.0	36.0	35.8	34.4	33.5	36.9	31.0
	Change, %		1.3	2.5	9.5	(16.6)	(21.3)	(20.7)	(17.6)	(15.4)	(23.1)	(8.5)
	HR Coil	570.0	570.0	560.0	479.0	398.0	388.0	450.0	391.0	653.2	461.5	442.6
	Change, %		0.0	1.8	19.0	43.2	46.9	26.7	45.8	(12.7)	23.5	28.8
	Scrap	270.0	270.0	272.0	410.0	250.0	190.0	250.0	250.0	401.3	252.9	306.3
	Change, %		0.0	(0.7)	(34.1)	8.0	42.1	8.0	8.0	(32.7)	6.7	(11.8)
	Zinc	1,900.0	1,889.0	1,835.0	1,872.0	1,660.0	1,587.0	2,291.0	1,609.0	2,165.0	1,941.9	1,749.8
	Change, %		0.6	3.5	1.5	14.5	19.7	(17.1)	18.1	(12.2)	(2.2)	8.6

자료: Bloomberg
참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		05/16	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	**WTI**	47.7	46.2	43.4	40.4	29.0	40.8	59.4	37.0	93.1	48.8	36.6
	Change, %		*3.3*	*9.9*	*18.2*	*64.3*	*17.1*	*(19.7)*	*28.8*	*(48.8)*	*(2.2)*	*30.5*
	Dubai	45.4	44.4	42.8	39.4	30.7	39.6	63.6	32.2	96.7	50.8	33.8
	Change, %		*2.2*	*5.9*	*15.2*	*47.9*	*14.4*	*(28.7)*	*40.9*	*(53.1)*	*(10.7)*	*34.1*
Crude Oil Product	**Gasoline(휘발유)**	60.0	58.7	56.8	54.4	46.6	57.8	85.8	54.8	110.9	69.5	51.6
	Change, %		*2.2*	*5.5*	*10.3*	*28.6*	*3.8*	*(30.1)*	*9.5*	*(45.9)*	*(13.7)*	*16.2*
	Kerosene(등유)	55.0	53.9	52.8	49.5	43.4	54.9	78.0	44.2	112.6	64.7	45.2
	Change, %		*2.0*	*4.2*	*11.1*	*26.8*	*0.2*	*(29.5)*	*24.4*	*(51.2)*	*(15.0)*	*21.7*
	Diesel(경유)	55.4	54.3	52.6	48.0	41.1	55.0	79.9	43.2	112.8	64.8	43.6
	Change, %		*2.0*	*5.4*	*15.4*	*34.9*	*0.7*	*(30.6)*	*28.2*	*(50.9)*	*(14.4)*	*27.2*
	Bunker-C	35.4	34.7	33.3	29.3	25.7	33.3	60.1	25.3	86.5	45.3	26.8
	Change, %		*1.9*	*6.2*	*20.9*	*37.5*	*6.1*	*(41.2)*	*39.9*	*(59.1)*	*(21.8)*	*32.1*
	Naphtha	45.2	44.3	42.6	42.4	35.7	46.3	64.2	43.5	94.3	52.6	38.7
	Change, %		*1.9*	*6.1*	*6.6*	*26.6*	*(2.5)*	*(29.6)*	*4.0*	*(52.1)*	*(14.1)*	*16.8*
Dubai Spread	**Gasoline(휘발유)**	14.6	14.3	14.0	15.0	16.0	18.1	22.2	22.6	14.2	18.7	17.8
	Change		*0.3*	*0.6*	*(0.4)*	*(1.3)*	*(3.5)*	*(7.6)*	*(8.0)*	*0.4*	*(4.1)*	*(3.2)*
	Kerosene(등유)	9.7	9.5	10.0	10.2	12.7	15.2	14.4	12.0	15.9	14.0	11.4
	Change		*0.1*	*(0.3)*	*(0.5)*	*(3.1)*	*(5.6)*	*(4.7)*	*(2.4)*	*(6.2)*	*(4.3)*	*(1.7)*
	Diesel(경유)	10.1	9.9	9.7	8.7	10.4	15.4	16.3	11.0	16.0	14.0	9.7
	Change		*0.1*	*0.3*	*1.4*	*(0.3)*	*(5.3)*	*(6.3)*	*(1.0)*	*(6.0)*	*(3.9)*	*0.3*
	Bunker-C	(10.0)	(9.7)	(9.5)	(10.1)	(4.9)	(6.3)	(3.4)	(6.9)	(10.3)	(5.5)	(7.0)
	Change		*(0.3)*	*(0.4)*	*0.1*	*(5.0)*	*(3.7)*	*(6.5)*	*(3.1)*	*0.3*	*(4.4)*	*(2.9)*
	Naphtha	(0.2)	(0.1)	(0.3)	3.0	5.0	6.7	0.6	11.3	(2.4)	1.8	4.8
	Change		*(0.1)*	*0.1*	*(3.2)*	*(5.2)*	*(6.9)*	*(0.7)*	*(11.4)*	*2.2*	*(2.0)*	*(5.0)*
Refining Margin	**Simple(단순)**	(0.6)	(0.5)	(0.5)	(0.6)	2.9	3.9	4.9	3.2	(0.1)	3.3	1.8
	Change		*(0.1)*	*(0.1)*	*0.0*	*(3.5)*	*(4.4)*	*(5.5)*	*(3.7)*	*(0.5)*	*(3.9)*	*(2.4)*
	Complex(복합)	5.4	5.4	5.3	5.3	7.7	10.0	11.4	9.7	7.1	9.3	7.4
	Change		*0.1*	*0.2*	*0.2*	*(2.3)*	*(4.6)*	*(5.9)*	*(4.3)*	*(1.6)*	*(3.9)*	*(1.9)*
	Complex(lagging)	11.1	9.7	11.6	9.8	12.1	3.4	16.3	2.1	2.3	7.3	9.0
	Change		*1.5*	*(0.5)*	*1.3*	*(1.0)*	*7.7*	*(5.2)*	*9.0*	*8.8*	*3.9*	*2.1*

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

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Petrochemical Price Data

Daily Price			05/16	05/13	05/12	05/11	05/10	05/09	05/06	05/05	05/04	05/03
Spot Price	**Naphtha**	CFR Japan	427.3	415.8	419.3	395.0	387.3	398.3	391.0	395.8	398.0	403.0
	Ethylene	CFR SE Asia	1,140.0	1,140.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0
	Propylene	FOB Korea	709.0	715.0	700.0	695.0	698.0	705.0	705.0	705.0	705.0	705.0
	Butadiene	FOB Korea	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,075.0	1,070.0	1,050.0	1,050.0	1,050.0
	HDPE	CFR FE Asia	1,130.0	1,130.0	1,135.0	1,135.0	1,130.0	1,130.0	1,140.0	1,155.0	1,160.0	1,140.0
	LDPE	CFR FE Asia	1,150.0	1,150.0	1,150.0	1,150.0	1,150.0	1,150.0	1,160.0	1,175.0	1,180.0	1,160.0
	LLDPE	CFR FE Asia	1,135.0	1,135.0	1,140.0	1,140.0	1,130.0	1,135.0	1,150.0	1,165.0	1,170.0	1,130.0
	MEG	CFR China	620.0	619.0	627.0	621.0	618.0	620.0	634.0	645.0	648.0	658.0
	PP	CFR FE Asia	940.0	940.0	955.0	950.0	945.0	950.0	955.0	965.0	970.0	970.0
	PX	CFR China	778.7	769.7	776.8	772.3	769.3	770.8	774.0	783.3	786.3	792.0
	PTA	CFR China	600.0	600.0	606.0	606.0	606.0	610.0	610.0	617.0	617.0	619.0
	Benzene	FOB Korea	631.0	644.5	648.3	645.0	647.0	653.0	652.0	658.0	653.5	657.5
	Toluene	FOB Korea	593.5	590.0	593.0	590.5	593.0	603.0	610.0	620.0	616.0	626.0
	Xylene	FOB Korea	686.0	686.0	681.0	671.0	665.0	671.0	657.0	671.0	662.0	669.0
	SM	FOB Korea	996.5	990.5	1,010.0	1,009.0	1,009.0	1,022.5	1,044.0	1,056.0	1,056.0	1,056.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**Naphtha**	CFR Japan	415.5	387.0	395.0	309.0	328.0	591.0	413.5	865.9	493.0	365.8
	Change, %			*7.4*	*5.2*	*34.5*	*26.7*	*(29.7)*	*0.5*	*(52.0)*	*(15.7)*	*13.6*
	Ethylene	CFR SE Asia	1,125.0	1,125.0	1,145.0	895.0	1,000.0	1,390.0	1,090.0	1,401.1	1,103.7	1,059.0
	Change, %			*0.0*	*(1.7)*	*25.7*	*12.5*	*(19.1)*	*3.2*	*(19.7)*	*1.9*	*6.2*
	Propylene	CFR SE Asia	695.0	685.0	742.5	655.0	660.0	930.0	650.0	1,254.2	770.0	635.5
	Change, %			*1.5*	*(6.4)*	*6.1*	*5.3*	*(25.3)*	*6.9*	*(44.6)*	*(9.7)*	*9.4*
	Butadiene	CFR SE Asia	1,045.0	1,065.0	1,015.0	785.0	740.0	1,025.0	720.0	1,281.7	877.5	913.0
	Change, %			*(1.9)*	*3.0*	*33.1*	*41.2*	*2.0*	*45.1*	*(18.5)*	*19.1*	*14.5*
	Benzene	CFR SE Asia	657.5	665.0	650.0	535.0	545.0	795.0	580.0	1,243.1	690.0	602.3
	Change, %			*(1.1)*	*1.2*	*22.9*	*20.6*	*(17.3)*	*13.4*	*(47.1)*	*(4.7)*	*9.2*
	Toluene	CFR SE Asia	650.0	670.0	655.0	580.0	585.0	830.0	630.0	1,082.5	700.8	626.8
	Change, %			*(3.0)*	*(0.8)*	*12.1*	*11.1*	*(21.7)*	*3.2*	*(40.0)*	*(7.2)*	*3.7*
	Xylene	CFR SE Asia	645.0	660.0	650.0	580.0	610.0	825.0	625.0	1,055.7	699.3	619.5
	Change, %			*(2.3)*	*(0.8)*	*11.2*	*5.7*	*(21.8)*	*3.2*	*(38.9)*	*(7.8)*	*4.1*
Spread	**Ethylene**	-Naphtha	709.5	738.0	750.0	586.0	672.0	799.0	676.5	535.2	610.6	693.2
	Change, %			*(3.9)*	*(5.4)*	*21.1*	*5.6*	*(11.2)*	*4.9*	*32.6*	*16.2*	*2.4*
	Propylene	-Naphtha	279.5	298.0	347.5	346.0	332.0	339.0	236.5	388.3	277.0	269.7
	Change, %			*(6.2)*	*(19.6)*	*(19.2)*	*(15.8)*	*(17.6)*	*18.2*	*(28.0)*	*0.9*	*3.6*
	Butadiene	-Naphtha	629.5	678.0	620.0	476.0	412.0	434.0	306.5	415.9	384.5	547.2
	Change, %			*(7.2)*	*1.5*	*32.2*	*52.8*	*45.0*	*105.4*	*51.4*	*63.7*	*15.0*
	Benzene	-Naphtha	242.0	278.0	255.0	226.0	217.0	204.0	166.5	377.3	197.0	236.5
	Change, %			*(12.9)*	*(5.1)*	*7.1*	*11.5*	*18.6*	*45.3*	*(35.9)*	*22.9*	*2.3*
	Toluene	-Naphtha	234.5	283.0	260.0	271.0	257.0	239.0	216.5	216.6	207.8	261.0
	Change, %			*(17.1)*	*(9.8)*	*(13.5)*	*(8.8)*	*(1.9)*	*8.3*	*8.3*	*12.9*	*(10.1)*
	Xylene	-Naphtha	229.5	273.0	255.0	271.0	282.0	234.0	211.5	189.9	206.3	253.7
	Change, %			*(15.9)*	*(10.0)*	*(15.3)*	*(18.6)*	*(1.9)*	*8.5*	*20.9*	*11.3*	*(9.5)*

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

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**HDPE**	CFR SE Asia	1,185.0	1,195.0	1,210.0	1,085.0	1,085.0	1,420.0	1,065.0	1,524.9	1,230.1	1,138.0
	Change, %			*(0.8)*	*(2.1)*	*9.2*	*9.2*	*(16.5)*	*11.3*	*(22.3)*	*(3.7)*	*4.1*
	MEG	CFR SE Asia	622.5	637.5	667.5	610.0	552.5	992.5	617.5	934.1	780.8	646.0
	Change, %			*(2.4)*	*(6.7)*	*2.0*	*12.7*	*(37.3)*	*0.8*	*(33.4)*	*(20.3)*	*(3.6)*
	PVC	CFR SE Asia	830.0	830.0	800.0	725.0	720.0	885.0	715.0	1,013.9	820.8	765.3
	Change, %			*0.0*	*3.8*	*14.5*	*15.3*	*(6.2)*	*16.1*	*(18.1)*	*1.1*	*8.5*
	PP	CFR SE Asia	995.0	1,020.0	1,065.0	845.0	835.0	1,375.0	835.0	1,503.0	1,109.8	933.5
	Change, %			*(2.5)*	*(6.6)*	*17.8*	*19.2*	*(27.6)*	*19.2*	*(33.8)*	*(10.3)*	*6.6*
	2-EH	CFR Korea	810.0	810.0	800.0	685.0	685.0	1,067.5	680.0	1,397.1	930.1	741.3
	Change, %			*0.0*	*1.3*	*18.2*	*18.2*	*(24.1)*	*19.1*	*(42.0)*	*(12.9)*	*9.3*
	ABS	CFR SE Asia	1,285.0	1,320.0	1,335.0	1,130.0	1,100.0	1,700.0	1,130.0	1,897.7	1,431.1	1,228.3
	Change, %			*(2.7)*	*(3.7)*	*13.7*	*16.8*	*(24.4)*	*13.7*	*(32.3)*	*(10.2)*	*4.6*
	SBR	CFR SE Asia	1,545.0	1,545.0	1,445.0	1,195.0	1,195.0	1,470.0	1,150.0		1,332.1	1,337.3
	Change, %			*0.0*	*6.9*	*29.3*	*29.3*	*5.1*	*34.3*		*16.0*	*15.5*
	SM	CFR SE Asia	1,047.5	1,082.5	1,102.5	975.0	935.0	1,452.5	910.0	1,547.1	1,100.7	1,041.4
	Change, %			*(3.2)*	*(5.0)*	*7.4*	*12.0*	*(27.9)*	*15.1*	*(32.3)*	*(4.8)*	*0.6*
	Caustic	FOB NEA	295.0	292.5	290.0	287.5	285.0	300.0	285.0	310.0	296.8	287.1
	Change, %			*0.9*	*1.7*	*2.6*	*3.5*	*(1.7)*	*3.5*	*(4.8)*	*(0.6)*	*2.7*
	PX	CFR SE Asia	787.5	792.5	795.0	727.5	682.5	957.5	762.5	1,228.5	842.9	767.4
	Change, %			*(0.6)*	*(0.9)*	*8.2*	*15.4*	*(17.8)*	*3.3*	*(35.9)*	*(6.6)*	*2.6*
	PO	CFR China	1,227.5	1,262.5	1,292.5	1,165.0	1,110.0	1,782.5	1,257.5	2,179.2	1,683.4	1,215.8
	Change, %			*(2.8)*	*(5.0)*	*5.4*	*10.6*	*(31.1)*	*(2.4)*	*(43.7)*	*(27.1)*	*1.0*
	Caprolactam	CFR SE Asia	1,340.0	1,340.0	1,320.0	1,110.0	1,250.0	1,745.0	1,260.0	2,233.4	1,581.5	1,238.0
	Change, %			*0.0*	*1.5*	*20.7*	*7.2*	*(23.2)*	*6.3*	*(40.0)*	*(15.3)*	*8.2*
	PTA	CFR SE Asia	625.0	627.5	625.0	577.5	562.5	772.5	585.0	911.7	648.0	598.4
	Change, %			*(0.4)*	*0.0*	*8.2*	*11.1*	*(19.1)*	*6.8*	*(31.4)*	*(3.6)*	*4.4*
Spread	**HDPE**		769.5	808.0	815.0	776.0	757.0	829.0	651.5	659.0	737.1	772.2
	Change, %			*(4.8)*	*(5.6)*	*(0.8)*	*1.7*	*(7.2)*	*18.1*	*16.8*	*4.4*	*(0.3)*
	MEG		207.0	250.5	272.5	301.0	224.5	401.5	204.0	68.2	287.8	280.2
	Change, %			*(17.4)*	*(24.0)*	*(31.2)*	*(7.8)*	*(48.4)*	*1.5*	*203.4*	*(28.1)*	*(26.1)*
	PVC		414.5	443.0	405.0	416.0	392.0	294.0	301.5	148.0	327.8	399.5
	Change, %			*(6.4)*	*2.3*	*(0.4)*	*5.7*	*41.0*	*37.5*	*180.0*	*26.4*	*3.8*
	PP		579.5	633.0	670.0	536.0	507.0	784.0	421.5	637.1	616.8	567.7
	Change, %			*(8.5)*	*(13.5)*	*8.1*	*14.3*	*(26.1)*	*37.5*	*(9.0)*	*(6.0)*	*2.1*
	2-EH		394.5	423.0	405.0	376.0	357.0	476.5	266.5	531.3	437.0	375.5
	Change, %			*(6.7)*	*(2.6)*	*4.9*	*10.5*	*(17.2)*	*48.0*	*(25.7)*	*(9.7)*	*5.1*
	ABS		869.5	933.0	940.0	821.0	772.0	1,109.0	716.5	1,031.9	938.1	862.5
	Change, %			*(6.8)*	*(7.5)*	*5.9*	*12.6*	*(21.6)*	*21.4*	*(15.7)*	*(7.3)*	*0.8*
	SBR	BD spread	500.0	480.0	430.0	410.0	455.0	445.0	430.0		454.7	424.3
	Change, %			*4.2*	*16.3*	*22.0*	*9.9*	*12.4*	*16.3*		*10.0*	*17.9*
	SM		632.0	695.5	707.5	666.0	607.0	861.5	496.5	681.2	607.7	675.6
	Change, %			*(9.1)*	*(10.7)*	*(5.1)*	*4.1*	*(26.6)*	*27.3*	*(7.2)*	*4.0*	*(6.5)*
	Caustic											
	Change, %											
	PX		372.0	405.5	400.0	418.5	354.5	366.5	349.0	362.6	349.9	401.6
	Change, %			*(8.3)*	*(7.0)*	*(11.1)*	*4.9*	*1.5*	*6.6*	*2.6*	*6.3*	*(7.4)*
	PO	propylene sprea	532.5	577.5	550.0	510.0	450.0	852.5	607.5	925.0	913.4	580.3
	Change, %			*(7.8)*	*(3.2)*	*4.4*	*18.3*	*(37.5)*	*(12.3)*	*(42.4)*	*(41.7)*	*(8.2)*
	Caprolactam	benzene sprea	682.5	675.0	670.0	575.0	705.0	950.0	680.0	990.3	891.6	635.8
	Change, %			*1.1*	*1.9*	*18.7*	*(3.2)*	*(28.2)*	*0.4*	*(31.1)*	*(23.4)*	*7.4*
	PTA	px spread	73.8	72.8	68.5	68.3	84.8	102.3	51.3	51.8	58.0	61.2
	Change, %			*1.4*	*7.7*	*8.1*	*(13.0)*	*(27.9)*	*43.9*	*42.5*	*27.1*	*20.5*

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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	Currency	05/16	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
Petrochemical																
Dow Chemical	USD	51.6	2.1	1.5	(1.5)	10.2	(0.1)	0.2	0.2	57,938	14.7	13.2	2.4	2.3	8.1	7.5
Du Pont	USD	64.3	2.3	0.4	(1.4)	9.3	(4.3)	(3.6)	(3.4)	56,202	20.6	17.5	5.9	4.6	11.7	10.1
Eastman	USD	73.9	1.6	(1.2)	(1.0)	18.5	6.1	(5.6)	9.4	10,922	10.5	9.6	2.4	2.1	8.1	7.7
BASF	EUR	67.8	0.7	(1.4)	(0.4)	15.5	(9.3)	(21.3)	(4.2)	69,798	14.9	13.3	2.0	1.9	7.7	7.1
Akzo Nobel	EUR	61.4	0.0	(0.2)	0.9	17.7	(4.0)	(8.4)	(0.5)	17,317	14.6	14.0	2.2	2.1	8.0	7.7
Arkema	EUR	70.9	0.2	4.9	1.4	40.7	10.6	2.6	9.7	6,062	14.3	12.2	1.4	1.3	6.1	5.7
Lanxess	EUR	42.3	0.0	(4.1)	(4.0)	21.8	(8.4)	(17.5)	(0.8)	4,375	19.8	15.2	1.5	1.5	5.6	5.1
Sumitomo Chemical	JPY	478	(0.6)	(0.2)	(4.2)	(2.8)	(26.9)	(30.7)	(31.8)	7,262	8.7	7.7	0.9	0.8	6.6	6.2
Mitsubishi Chemical	JPY	561	(0.7)	1.0	(1.0)	(7.7)	(28.9)	(26.1)	(27.5)	7,757	9.1	8.1	0.8	0.7	5.5	5.2
Shin-Etsu Chemical	JPY	6,238	1.1	2.9	1.8	8.9	(11.5)	(15.6)	(5.7)	24,736	17.6	16.4	1.2	1.2	6.0	5.6
Asahi Kasei	JPY	727	1.3	(1.5)	(1.3)	2.0	(1.8)	(34.5)	(11.7)	9,354	10.8	9.7	0.9	0.8	5.1	4.8
JSR	JPY	1,536	1.2	3.8	(1.0)	(2.7)	(18.1)	(25.7)	(19.1)	3,187	12.8	12.0	0.9	0.9	5.2	4.8
Nitto Denko	JPY	6,997	2.8	10.7	10.9	22.0	(17.3)	(20.2)	(21.5)	11,157	16.8	15.0	1.7	1.6	6.9	6.3
SABIC	SAR	83.8	(0.3)	(0.0)	9.5	23.3	1.8	(22.1)	9.6	67,070	17.2	14.9	1.5	1.4	8.0	7.2
Yansab	SAR	40.4	1.7	2.4	(2.8)	37.6	(8.0)	(25.4)	24.7	6,064	16.7	14.7	1.5	1.5	8.6	8.1
Formosa Plastics	TWD	77.2	0.9	(0.5)	(5.9)	1.0	5.9	(0.8)	0.3	15,056	15.8	14.6	1.6	1.6	23.2	21.0
Formosa Fiber	TWD	80.9	(1.1)	0.7	(4.6)	13.0	16.4	6.4	9.3	14,527	16.5	16.0	1.6	1.5	13.7	12.7
Nan Ya Plastics	TWD	59.7	0.3	(2.9)	(10.0)	(0.5)	(0.5)	(17.8)	(2.1)	14,506	13.7	13.7	1.4	1.3	13.5	13.3
Sinopec Shanghai	CNY	6.15	0.2	(0.8)	(17.3)	8.5	(16.8)	(27.6)	(5.1)	8,465	17.2	17.7	2.9	2.6	8.3	8.6
Sinopec Yizheng(Fibe	CNY	4.02	0.5	(3.4)	(21.9)	(39.0)	(57.3)	(54.1)	(50.7)	7,824	#N/A N/A	402.0	2.3	2.3	16.3	13.6
Reliance	INR	976	(0.2)	(0.7)	(8.5)	4.9	4.5	11.7	(3.9)	47,358	11.0	9.4	1.1	1.0	8.9	7.3
Industries Qatar	QAR	100.9	(0.1)	1.0	(5.0)	(3.2)	(10.2)	(29.2)	(9.2)	16,771	14.4	13.2	1.8	1.8	53.7	51.7
PTT Chemical	THB	60.3	(0.4)	1.3	2.1	13.1	4.8	(4.4)	20.5	7,592	11.1	10.1	1.1	1.1	5.4	5.1
Petronas	MYR	6.2	0.3	1.8	(7.9)	(13.4)	(4.3)	(1.7)	(14.4)	12,380	18.1	16.5	1.9	1.8	8.8	8.0
LG화학	KRW	283,500	0.7	2.0	(15.4)	(3.4)	(3.6)	7.0	(13.7)	15,961	0.0	14.0	0.0	1.5	0.0	5.5
롯데케미칼	KRW	288,500	(0.2)	1.9	(11.8)	1.1	28.5	25.2	18.5	8,401	0.0	7.2	0.0	1.1	0.0	4.1
한화케미칼	KRW	23,350	(1.9)	(1.9)	(10.0)	(3.3)	(0.2)	41.1	(14.2)	3,269	0.0	9.0	0.0	0.8	0.0	8.4
금호석유	KRW	66,800	0.9	4.4	(1.6)	17.2	16.6	(19.0)	28.2	1,729	0.0	17.0	0.0	1.3	0.0	10.7
SKC	KRW	29,050	0.5	6.0	(3.5)	(1.4)	(20.5)	(29.0)	(14.1)	912	0.0	8.7	0.0	0.7	0.0	7.7
국도화학	KRW	63,100	0.2	1.6	(8.2)	18.4	5.0	(1.7)	6.4	311	0.0	7.3	0.0	0.8	0.0	3.9
효성	KRW	4,080	(2.7)	4.6	2.0	60.6	54.5	3.3	56.3	3,446	0.0	7.2	0.0	1.1	0.0	6.9
Average			**0.4**	**1.1**	**(3.9)**	**9.3**	**(3.1)**	**(11.1)**	**(1.9)**							
Refinery																
Valero	USD	55.2	0.1	0.4	(7.2)	(3.8)	(20.8)	(7.4)	(21.9)	25,928	9.1	7.8	1.2	1.1	4.8	4.4
Conoco Phillips	USD	44.1	2.5	5.8	0.9	34.6	(18.9)	(33.0)	(5.6)	54,588	#N/A N/A	156.9	1.4	1.4	14.9	7.8
Formosa Petrochemi	TWD	85.5	0.2	(5.6)	(9.0)	6.2	12.6	12.4	8.5	24,953	17.7	17.6	3.0	2.9	11.0	11.1
Tesoro	USD	77.7	2.1	2.7	(4.0)	10.4	(31.5)	(14.9)	(26.2)	9,326	10.3	10.1	1.6	1.4	5.9	5.6
Marathon Petroleum	USD	35.6	0.4	1.9	(6.0)	9.5	(33.7)	(31.1)	(31.3)	18,878	9.6	8.1	1.4	1.2	6.5	5.9
Devon Energy	USD	33.8	3.9	12.5	7.6	58.9	(27.3)	(48.7)	5.6	17,706	#N/A N/A	46.3	2.8	2.7	16.4	10.0
Hollyfrontier	USD	27.7	(1.4)	(1.1)	(18.6)	(10.1)	(42.9)	(35.6)	(30.5)	4,897	11.5	8.1	0.9	0.9	6.0	4.9
Phillips 66	USD	78.7	0.4	0.5	(7.3)	0.5	(13.6)	(2.9)	(3.8)	41,353	14.1	11.2	1.7	1.6	8.0	6.8
Murphy Oil	USD	30.1	3.2	4.3	5.5	79.0	(0.1)	(32.5)	33.9	5,178	#N/A N/A	#N/A N/A	1.1	1.1	9.7	6.7
JX Holdings	JPY	425.0	(2.0)	(5.5)	(6.6)	(6.4)	(11.8)	(21.1)	(16.4)	9,733	7.9	7.3	0.6	0.6	8.9	8.6
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	0.0	(18.0)	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	2,127.0	(1.5)	(8.4)	4.4	14.8	7.0	(8.4)	9.8	3,123	6.2	5.7	0.6	0.5	6.3	6.1
Tonengeneral	JPY	953.0	(1.7)	(5.6)	(6.3)	(2.5)	(25.0)	(15.7)	(6.8)	3,201	10.4	8.7	1.4	1.3	13.0	7.4
Nesteoil	EUR	28.5	0.6	2.4	(2.8)	6.0	16.2	26.5	3.0	0	11.0	11.7	2.0	1.9	6.9	7.3
Ashland	USD	112.8	0.9	2.0	(0.1)	18.1	3.1	(11.4)	9.9	7,002	15.8	14.6	2.6	2.5	9.0	8.7
Fuchs Petrolub	EUR	36.5	0.0	(0.6)	(6.6)	3.6	(14.7)	(3.6)	(16.2)	5,402	20.3	19.4	4.2	3.7	11.7	11.1
SK이노베이션	KRW	154,500	0.7	5.5	(6.9)	12.8	32.1	36.7	18.8	12,136	0.0	8.0	0.0	0.8	0.0	4.7
S-Oil	KRW	84,900	1.0	3.9	(6.8)	9.7	23.0	27.3	6.9	8,120	0.0	7.8	0.0	1.6	0.0	5.4
GS	KRW	51,600	0.0	(2.5)	(10.7)	2.2	4.9	3.3	1.8	4,073	0.0	7.2	0.0	0.7	0.0	8.0
Average			**0.5**	**0.7**	**(4.2)**	**12.8**	**(7.4)**	**(9.4)**	**(3.2)**							

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

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Global peers

	Currency	05/16	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	90	1.0	1.1	5.4	10.3	10.7	2.5	14.9	371,412	34.9	21.3	2.2	2.1	11.7	8.8
BP	GBP	366	1.0	4.1	2.8	8.5	(0.7)	(19.1)	3.4	98,345	30.0	14.1	1.1	1.1	6.1	4.9
Shell	EUR	1,745	1.1	2.5	(3.8)	11.4	10.7	(12.4)	14.4	201,942	21.7	12.5	0.9	1.0	7.1	5.2
Chevron	USD	102	1.5	1.9	5.2	20.6	11.9	(5.3)	13.7	192,786	81.4	22.3	1.3	1.3	9.5	6.6
Total	EUR	43	0.8	2.5	1.4	11.3	(3.6)	(7.1)	4.6	121,166	16.5	11.8	1.2	1.2	7.6	5.8
Sinopec	CNY	5	0.6	0.6	(6.8)	5.9	(10.0)	(36.1)	(5.8)	85,193	18.3	12.7	0.8	0.8	5.5	4.8
Petrochina	CNY	7	0.1	0.0	(7.1)	(2.0)	(19.8)	(40.5)	(13.8)	193,157	75.8	22.2	1.1	1.1	8.0	6.4
CNOOC	CNY	12	0.2	0.5	(7.5)	(5.6)	(29.9)	(50.7)	(20.3)	7,034	90.3	41.5	1.3	1.2	14.1	11.6
Gazprom	RUB	158	(1.1)	(0.8)	6.8	16.4	15.2	3.3	16.2	57,767	3.9	3.4	0.3	0.3	4.2	3.8
Rosneft	RUB	323	(0.0)	(1.9)	4.1	16.3	22.4	25.3	27.4	52,780	10.7	7.1	1.1	0.9	4.7	4.1
Anadarko	USD	49	3.0	9.3	0.5	25.8	(20.8)	(41.9)	1.2	25,098	#N/A N/A	#N/A N/A	2.1	2.2	13.6	8.7
Petrobras	BRL	10	3.1	2.8	0.6	119.6	26.6	(30.7)	45.5	42,256	41.7	7.0	0.5	0.5	6.0	5.2
Lukoil	USD	2,662	(1.4)	1.3	(5.7)	8.7	7.5	2.6	13.5	35,107	6.7	5.2	0.4	0.4	N/A	N/A
Kinder	USD	17	0.5	1.2	(5.2)	10.2	(28.3)	(59.6)	15.4	47,497	26.4	22.2	1.1	1.1	11.3	10.6
Statoil	NOK	135	0.0	1.0	3.5	15.6	3.4	(12.4)	9.4	52,492	36.4	16.5	1.3	1.2	4.4	3.2
BHP	AUD	19	2.0	0.8	(3.7)	11.9	(7.7)	(38.9)	3.9	69,025	35.9	20.1	1.3	1.2	7.9	6.6
PTT E&P	THB	76	1.3	2.4	8.2	23.8	4.5	(35.5)	31.9	8,468	27.9	15.9	0.8	0.7	3.0	2.6
Petronas gas	MYR	21	(1.9)	0.1	(5.3)	(6.8)	(8.8)	(4.6)	(7.8)	10,299	22.6	22.2	3.5	3.3	13.2	12.8
Chesapeake	USD	4	(3.9)	(4.9)	(35.3)	109.7	(38.5)	(74.0)	(13.3)	2,670	#N/A N/A	11.9	3.9	2.5	15.6	10.0
Noble Energy	USD	36	2.6	2.5	12.3	26.1	(2.4)	(19.5)	9.7	15,517	#N/A N/A	#N/A N/A	1.6	1.7	11.1	9.4
Average		**0**	**0.5**	**1.4**	**(1.5)**	**21.9**	**(2.9)**	**(22.7)**	**8.2**							
PV																
WACKER	EUR	83.1	0.0	0.8	6.7	35.3	1.9	(23.7)	7.1	4,892	30.8	17.9	1.6	1.5	5.5	5.0
GCL-Poly	HKD	1.1	(1.8)	(5.2)	(13.5)	3.8	(28.6)	(49.6)	(6.0)	2,610	7.0	6.2	0.8	0.7	6.1	5.3
REC	NOK	107.5	0.0	0.0	0.0	0.0	0.0	2.4	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
SunPower	USD	16.7	0.7	(0.8)	(20.2)	(29.0)	(30.3)	(48.2)	(44.3)	2,308	12.3	10.3	1.5	1.5	7.7	6.2
Canadian Solar	USD	17.5	3.5	13.2	(2.9)	(9.3)	(18.8)	(55.0)	(39.6)	1,005	8.0	6.4	0.9	0.8	8.3	6.9
JA Solar	USD	8.0	2.4	0.6	(9.8)	(9.8)	(6.4)	(20.6)	(17.2)	382	5.2	4.3	0.4	0.4	2.5	2.2
Trina Solar	USD	8.2	2.6	(3.8)	(16.3)	(14.5)	(16.0)	(33.8)	(26.0)	754	5.8	5.2	0.6	0.5	5.6	4.9
Solar City	USD	20.1	2.3	(10.9)	(30.9)	9.2	(27.9)	(67.9)	(60.7)	1,972	#N/A N/A	#N/A N/A	5.4	#N/A N/A	#N/A N/A	#N/A N/A
Yingli	USD	3.4	5.3	12.6	(33.3)	(22.0)	(50.1)	(80.0)	(24.9)	62	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	6.4	12.9
First Solar	USD	49.1	1.1	(3.0)	(17.7)	(22.2)	(9.4)	(13.5)	(25.6)	5,017	11.4	15.5	0.8	0.8	5.8	6.5
한화솔라원	USD	11.5	5.2	2.9	(18.7)	(26.2)	(35.6)	(50.6)	(47.7)	964	8.6	7.1	#N/A N/A	#N/A N/A	6.2	5.5
OCI	KRW	109,500	(3.1)	(2.2)	9.9	52.9	48.4	11.5	46.0	2,219	0.0	8.3	0.0	0.8	0.0	9.0
웅진에너지	KRW	1,135	(0.4)	(0.4)	(12.7)	(33.8)	(17.2)	(25.3)	(34.4)	104	N/A	0.0	0.8	0.0	9.0	0.0
신성솔라에너지	KRW	1,670	1.8	5.7	0.3	(3.9)	30.3	24.9	(10.0)	143	N/A	0.8	0.0	9.0	0.0	7.2
Average			**1.4**	**0.7**	**(11.4)**	**(5.0)**	**(11.4)**	**(30.7)**	**(20.2)**							
Gas Company																
Towngas China	HKD	4.1	0.2	0.7	(7.2)	11.9	(14.8)	(52.1)	(8.2)	1,418	8.6	8.5	0.8	0.7	10.6	10.0
Kulun	HKD	6.0	(0.5)	(3.4)	(10.6)	1.4	1.7	(34.2)	(13.0)	6,239	12.4	9.7	0.9	0.9	5.2	4.7
Beijing Enterprise	HKD	38.5	(0.4)	2.1	(10.6)	12.8	(18.3)	(46.6)	(18.1)	6,291	7.7	7.3	0.8	0.7	13.1	11.5
ENN Energy	HKD	37.7	1.1	(0.3)	(19.6)	7.1	(4.2)	(35.1)	(8.9)	5,249	11.7	10.4	2.1	1.9	7.6	6.9
China Resources Gas	HKD	21.8	(0.9)	2.6	(9.0)	9.8	6.1	(15.0)	(6.0)	6,231	14.1	12.6	2.4	2.1	9.0	8.1
China Gas Holdings	HKD	10.6	0.4	0.9	(15.0)	4.7	(4.3)	(23.6)	(4.8)	6,730	11.8	10.5	2.1	1.9	10.0	8.9
Shenzen Gas	HKD	12.1	0.3	(3.2)	(5.3)	(0.5)	(4.6)	(12.1)	(15.8)	2,955	11.3	10.4	1.1	1.0	7.6	7.0
Shann Xi	CNY	10.0	1.3	4.0	(6.3)	7.0	(25.7)	(37.1)	(20.7)	1,704	15.9	13.5	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Suntien	HKD	0.8	0.0	(6.8)	(4.7)	(2.4)	(35.9)	(57.3)	(33.9)	392	8.6	6.6	0.3	0.3	8.7	7.2
China Oil & Gas	HKD	0.5	0.0	(1.9)	(7.1)	10.6	2.0	(44.4)	(1.9)	390	10.4	9.5	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.2**	**(0.5)**	**(9.5)**	**6.2**	**(9.8)**	**(35.7)**	**(13.1)**							
EV																
LG화학	KRW	283,500	0.7	2.0	(15.4)	(3.4)	(3.6)	7.0	(13.7)	15,961	13.2	11.8	1.4	1.3	5.6	5.1
삼성SDI	KRW	107,500	0.5	(7.7)	0.9	12.6	0.9	(11.5)	(5.7)	6,280	17.1	23.4	0.7	0.6	452.5	8.3
Panasonic	JPY	933.7	1.6	1.5	(6.4)	4.5	(32.5)	(44.3)	(24.7)	21,019	11.4	9.8	1.0	1.0	3.2	2.9
GS Yuasa	JPY	442.0	(3.9)	0.0	(12.5)	(1.6)	(1.1)	(15.6)	(2.2)	1,678	12.4	10.7	1.0	1.0	5.9	5.3
NEC	JPY	249.0	0.0	(1.2)	(11.7)	(9.8)	(36.3)	(39.4)	(35.3)	5,952	9.6	8.5	0.7	0.7	5.3	5.1
BYD Auto	CNY	60.6	2.3	2.6	4.0	16.3	(12.9)	(0.4)	(6.0)	19,494	37.7	29.8	4.2	3.7	15.7	13.5
Tesla Motors	USD	208.3	0.3	(0.3)	(18.2)	34.2	(2.8)	(16.3)	(13.2)	27,899	290.5	77.3	16.8	13.7	37.5	21.3
Kandi Technologies	USD	6.4	3.4	(7.0)	(18.6)	(11.3)	(38.3)	(30.2)	(41.6)	304	#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			**0.6**	**(1.3)**	**(9.7)**	**5.2**	**(15.8)**	**(18.9)**	**(17.8)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임