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1. News Summary (3 page)

2016년 5월 11일

News		Conclusion
WTI comment	캐나다 생산차질 우려 완화로 하락	
Headline	사우디 Aramco & SABIC, 35조원 대규모의 정유/화학 단지 건설	최근 Aramco의 활발한 움직임 주목, 범용화학 시장에서는 우려요인임
News 1.	Solar City 주가 -20.8% 급락, 실적악화 및 방향성 상실 우려	과도한 부채, rooftop 시장성장둔화 등 Solar city의 총체적 위기 지속
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	44.7	2.4	2.3	10.7	62.7	(24.6)
Dubai	$/bbl	41.2	(3.8)	(4.2)	9.1	57.4	(34.4)
Gasoline	$/bbl	55.1	(3.1)	(3.8)	1.0	37.1	(33.9)
Diesel	$/bbl	50.7	(3.5)	(3.4)	10.2	46.3	(35.2)
Complex margin	$/bbl	5.2	(0.0)	0.1	(0.8)	(1.3)	(5.3)
1M lagging	$/bbl	11.0	(0.9)	(0.0)	(1.1)	10.4	(8.5)
Petrochemical			%	%	%	%	%
Naphtha	$/t	387	(2.8)	(3.9)	1.2	36.4	(32.5)
Butadiene	$/t	1,075	0.0	2.4	7.5	34.4	0.0
HDPE	$/t	1,130	0.0	(0.9)	(2.6)	5.6	(18.7)
MEG	$/t	618	(0.3)	(6.1)	(6.4)	1.3	(39.1)
PX	$/t	769	(0.2)	(2.9)	0.0	11.3	(19.2)
SM	$/t	1,009	(1.3)	(4.5)	(7.2)	8.1	(25.8)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.16	2.9	3.5	3.6	(4.6)	(31.5)
Natural rubber	$/t	1,410	0.7	(1.4)	(4.7)	30.6	(6.0)
Cotton	C/lbs	60.9	(0.7)	(3.4)	(0.0)	1.7	(7.1)

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	05/09	$/t	1,125	0.0	(3.0)	26.4	(19.1)
Propylene	05/09	$/t	685	(6.2)	(8.7)	5.4	(28.1)
Benzene	05/09	$/t	665	0.8	5.1	20.9	(21.8)
Toluene	05/09	$/t	670	0.0	2.3	14.5	(20.2)
Xylene	05/09	$/t	660	0.0	1.9	12.3	(19.0)
PP	05/09	$/t	1,020	0.0	(4.7)	21.4	(26.1)
PVC	05/09	$/t	830	1.2	3.8	14.5	(6.2)
ABS	05/09	$/t	1,320	(1.9)	(1.9)	17.9	(21.4)
SBR	05/09	$/t	1,545	0.7	6.6	29.3	3.7
SM	05/09	$/t	1,083	0.0	(3.1)	11.6	(23.4)
BPA	05/09	$/t	1,223	0.0	(2.4)	7.5	(32.6)
Caustic	05/09	$/t	293	0.9	2.6	1.7	(2.5)
2-EH	05/09	$/t	810	0.0	2.2	19.1	(27.0)
Caprolactam	05/09	$/t	1,340	1.5	2.3	20.7	(23.4)
Solar				%	%	%	%
Polysilicon	05/04	$/kg	16.6	3.1	13.9	28.5	2.8
Module	05/04	$/W	0.52	(0.6)	(2.1)	(5.4)	(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	90.0	1.6	2.1	8.1	13.4	1.1
Shell	EUR	1,720	1.0	(2.0)	(0.8)	18.2	(17.0)
Petrochina	CNY	7.19	(0.1)	(4.3)	(4.4)	(0.6)	(42.1)
Gazprom	RUB	156.9	(1.5)	(6.9)	7.7	17.9	0.9
Petrobras	BRL	10.2	7.7	4.4	23.6	136.9	(24.5)
Refinery							
Phillips66	USD	79.3	1.2	(0.9)	(7.9)	5.3	(2.9)
Valero	USD	56.0	1.9	(2.8)	(11.2)	2.0	(5.2)
JX	JPY	447.7	(0.5)	(2.5)	4.0	1.0	(13.0)
Neste Oil	EUR	28.7	3.2	1.1	(3.6)	9.6	24.0

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	69.2	0.7	1.8	9.7	20.7	(21.8)
Dow Chemical	USD	51.5	1.4	(0.4)	1.5	11.7	(0.6)
SABIC	SAR	83.2	(0.8)	1.4	7.2	25.8	(20.8)
Formosa Pla.	TWD	77.1	(0.6)	(2.4)	(2.3)	2.4	(1.9)
Shin-Etsu	JPY	6,215	2.5	1.5	6.8	13.0	(17.0)
Renewable							
Wacker	EUR	82.2	(0.2)	(2.2)	7.0	33.6	(26.9)
Yingli	USD	3.42	13.2	11.4	(24.5)	(13.0)	(79.9)
Tesla	USD	208.7	(0.1)	(10.2)	(16.5)	45.3	(11.8)
BYD	CNY	58.7	(0.5)	(8.7)	1.7	17.2	(1.3)

4. Coverage Summary

	05/10	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	1,983	0.7	(0.2)	0.5	3.4	(2.1)	(4.9)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,429	0.7	(0.6)	(2.2)	3.4	8.5	9.7				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	282,000	1.4	(3.4)	(11.7)	(6.3)	(4.9)	5.2	매수	400,000	41.8	12.43	1.49
롯데케미칼	288,000	1.8	(1.4)	(12.5)	0.2	24.4	18.5	매수	340,000	18.1	9.73	1.12
한화케미칼	24,000	0.8	(3.6)	4.3	(3.0)	8.6	52.4	매수	30,000	25.0	9.48	0.78
금호석유화학	66,800	4.4	(0.7)	9.5	18.2	12.6	(20.4)	매수	70,000	4.8	13.17	1.32
KCC	409,500	0.4	0.0	3.0	(6.1)	(8.2)	(22.3)	매수	550,000	34.3	14.57	0.63
OCI	107,500	(4.0)	(12.6)	5.9	55.8	33.5	11.3	매수	120,000	11.6	20.20	0.93
SKC	27,450	0.2	(3.3)	(7.9)	(8.2)	(26.4)	(33.8)	매수	43,000	56.6	8.55	0.70
국도화학	62,600	0.8	(1.1)	(9.5)	11.0	6.6	(9.1)	매수	100,000	59.7	7.12	0.72
SK이노베이션	151,500	3.4	(4.1)	(11.4)	6.7	30.6	32.3	매수	180,000	18.8	11.34	0.92
S-Oil	83,300	2.0	(6.6)	(13.8)	(0.8)	23.2	17.8	매수	100,000	20.0	11.74	1.45
GS	53,400	0.9	(3.4)	(8.6)	2.5	3.1	7.8	매수	65,000	21.7	7.65	0.89
SK가스	83,700	2.6	0.8	2.6	11.7	3.2	(15.6)	매수	100,000	19.5	11.87	0.73
대우인터내셔널	23,150	3.3	(3.3)	(0.2)	41.2	19.9	(22.4)	매수	27,000	16.6	10.70	1.03
LG상사	35,200	0.1	(4.2)	0.6	7.2	0.4	(10.9)	매수	42,000	19.3	10.39	0.90

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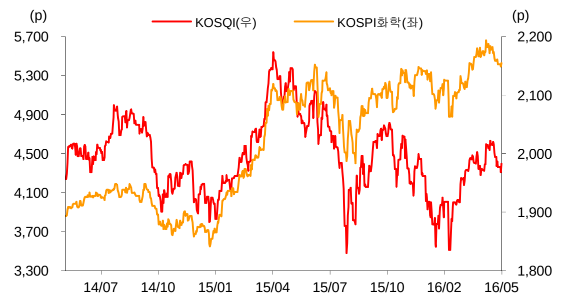
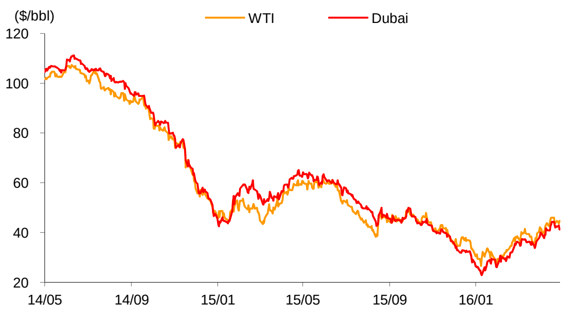
Key Chart

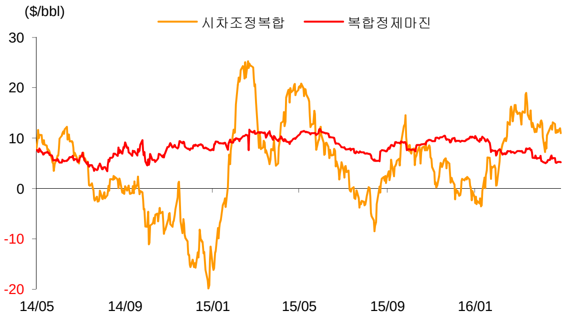
KOSPI/KOSPI화학



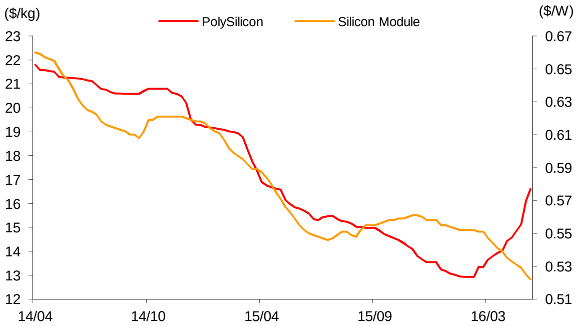
WTI/Dubai



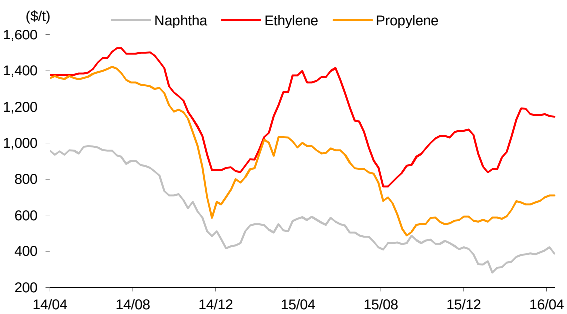
Complex & 1M lagging margin



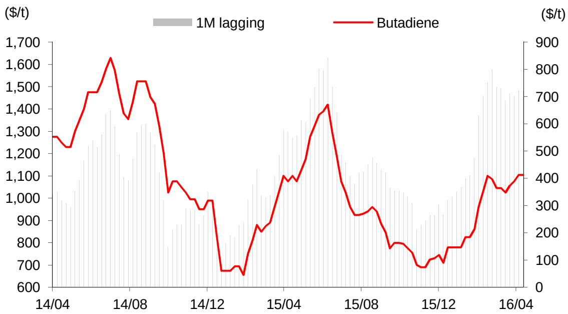
Polysilicon & Module prices



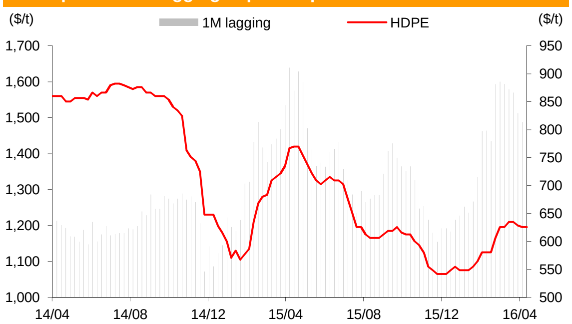
Naphtha/Ethylene/Propylene prices



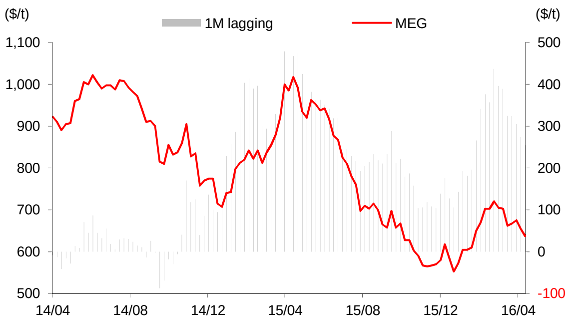
Butadiene price & 1M lagging naphtha spread



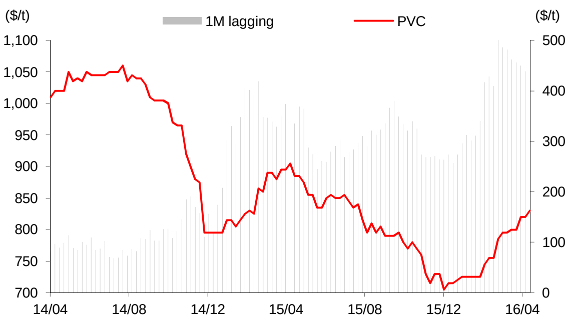
HDPE price & 1M lagging naphtha spread



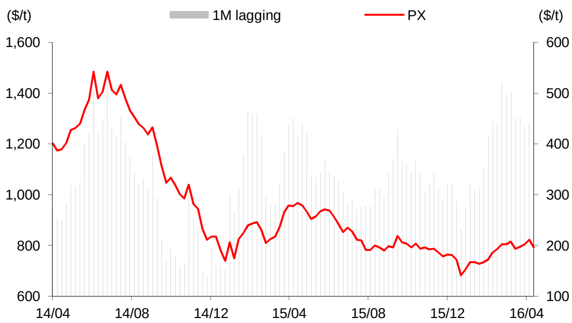
MEG price & 1M lagging naphtha spread



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	사우디 Aramco & SABIC, 35조원 대규모의 정유/화학 단지 건설
결론	최근 Aramco의 활발한 움직임 주목, 범용화학 시장에서는 우려요인임
세부	
	1) Saudi Aramco 직접 언급, SABIC과 MOU 체결 곧 할 예정임
	2) 총 투자금액은 35조원으로 정유설비와 NCC까지 수직계열화 예상됨
	3) 통상적인 투자규모를 훨씬 뛰어넘는 대규모 투자, capa도 클 것으로 예상
	4) Aramco는 E&P/정유, SABIC은 화학 맡을 듯. 10만명 고용효과도 기대
	5) 최근 Aramco의 활발한 움직임 주목, 범용화학 시장에서는 우려요인임

WTI Comment	(출처: 연합뉴스)
제목	캐나다 생산차질 우려 완화로 하락
상승	캐나다 앨버타주 산불, 해당지역 산유량 160만b/d 감소
요인	나이지리아 남부 유전지대 니제르 델타에서 무장괴한 살인사태 발생
하락	
요인	

Issue 1	(출처: 각종언론)
제목	Solar City 주가 -20.8% 급락, 실적악화 및 방향성 상실 우려
결론	과도한 부채, rooftop 시장성장둔화 등 Solar city의 총체적 위기 지속
세부	
	1) Solar City 1분기 EPS -\$2.56, 컨센서스 -\$2.31 하회
	2) 또한 지난 7개월 래 3번째 shipment guidance 하향 조정 있었음
	3) 1분기 신규주문물량은 160MW였는데, 사측 예상치 310MW 크게 하회했음
	4) 컨콜에서 한 애널리스트는 "What is Solar City?"라며 사업 불확실성 지적
	5) 과도한 부채, rooftop 시장성장둔화 등 Solar city의 총체적 위기 지속

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)
	2)
	3)
	4)
	5)

Issue 6	
제목	
결론	
세부	
	1)
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	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	0.879	0.879	0.870	0.877	0.886	0.932	0.892	0.921	0.754	0.901	0.898
	Change, %		0.1	1.1	0.2	(0.7)	(5.7)	(1.4)	(4.5)	16.6	(2.4)	(2.1)
	USD/JPY	109.3	108.3	106.6	108.1	113.4	123.2	119.8	120.6	105.9	121.1	113.4
	Change, %		0.9	2.5	1.1	(3.6)	(11.3)	(8.8)	(9.4)	3.2	(9.7)	(3.6)
	USD/KRW	1,172.9	1,165.8	1,140.2	1,153.8	1,198.4	1,156.8	1,088.3	1,172.6	1,053.0	1,131.2	1,185.0
	Change, %		0.6	2.9	1.7	(2.1)	1.4	7.8	0.0	11.4	3.7	(1.0)
Agriculture	Corn	378.5	367.8	378.3	362.3	360.3	359.0	358.5	358.8	415.6	376.8	366.2
	Change, %		2.9	0.1	4.5	5.1	5.4	5.6	5.5	(8.9)	0.4	3.4
	Soybean	1,076.0	1,018.8	1,021.5	916.8	862.3	864.5	984.5	871.3	1,245.5	945.4	911.0
	Change, %		5.6	5.3	17.4	24.8	24.5	9.3	23.5	(13.6)	13.8	18.1
	Wheat	451.5	447.0	459.8	460.3	461.3	490.8	476.5	470.0	588.0	508.1	466.0
	Change, %		1.0	(1.8)	(1.9)	(2.1)	(8.0)	(5.2)	(3.9)	(23.2)	(11.1)	(3.1)
	Rice	11.2	11.0	11.2	10.0	11.1	11.6	9.5	11.6	14.0	11.1	10.7
	Change, %		1.6	0.0	12.3	0.4	(4.0)	17.5	(3.4)	(20.0)	1.0	4.6
	Oats	181.3	177.3	186.8	187.0	189.3	226.5	236.3	217.3	373.1	250.2	191.8
	Change, %		2.3	(2.9)	(3.1)	(4.2)	(20.0)	(23.3)	(16.6)	(51.4)	(27.6)	(5.5)
MYR/mt	Palm Oil	2,670.0	2,675.0	2,520.0	2,647.0	2,487.0	2,235.0	2,146.0	2,398.0	2,415.1	2,190.3	2,519.3
	Change, %		(0.2)	6.0	0.9	7.4	19.5	24.4	11.3	10.6	21.9	6.0
	Cocoa	3,081.0	3,059.0	3,178.0	2,872.0	2,825.0	3,268.0	2,922.0	3,211.0	3,006.8	3,091.6	2,957.4
	Change, %		0.7	(3.1)	7.3	9.1	(5.7)	5.4	(4.0)	2.5	(0.3)	4.2
	Cotton	60.9	61.3	63.1	60.1	58.9	61.9	66.2	63.3	76.4	63.3	60.3
	Change, %		(0.7)	(3.4)	1.4	3.4	(1.7)	(8.0)	(3.8)	(20.2)	(3.7)	1.0
	Sugar	16.0	15.9	16.3	14.7	13.4	14.7	13.4	15.2	16.3	13.1	14.7
	Change, %		0.9	(1.4)	9.1	19.7	8.9	19.4	5.1	(1.9)	21.9	9.1
	Coffee	126.9	125.2	118.6	120.5	114.8	116.3	132.9	126.7	177.1	132.6	120.8
	Change, %		1.4	7.0	5.4	10.6	9.1	(4.5)	0.2	(28.3)	(4.3)	5.1
Energy	WTI	44.7	43.4	43.7	39.7	27.5	44.2	59.4	37.0	92.9	48.8	36.3
	Change, %		2.8	2.3	12.4	62.7	1.0	(24.8)	20.6	(51.9)	(8.6)	23.1
	Brent	45.5	43.6	45.0	41.9	30.8	47.4	65.4	37.3	99.5	53.7	38.0
	Change, %		4.3	1.2	8.5	47.6	(4.0)	(30.4)	22.1	(54.2)	(15.2)	19.8
	Natural Gas	2.2	2.1	2.1	2.0	2.0	2.3	2.9	2.3	4.3	2.6	2.0
	Change, %		2.9	3.5	8.4	5.5	(7.0)	(25.1)	(7.7)	(49.4)	(17.9)	7.4
	Ethanol	1.5	1.5	1.5	1.5	1.4	1.5	1.7	1.4	2.1	1.5	1.4
	Change, %		2.1	0.9	1.3	10.4	2.5	(8.0)	9.1	(25.9)	1.1	6.6
	RBOB Gasoline	148.6	144.3	151.0	146.4	94.3	136.2	199.2	126.7	262.6	163.6	127.5
	Change, %		3.0	(1.6)	1.5	57.6	9.1	(25.4)	17.3	(43.4)	(9.2)	16.5
	Coal	43.6	43.6	43.5	43.6	43.1	41.9	47.0	43.3	57.5	45.2	43.4
	Change, %		0.0	0.3	0.0	1.2	4.3	(7.1)	0.7	(24.2)	(3.5)	0.4
Metal	Gold	1,265.8	1,263.9	1,286.5	1,239.4	1,197.1	1,089.6	1,188.4	1,061.4	1,266.5	1,160.6	1,203.1
	Change, %		0.2	(1.6)	2.1	5.7	16.2	6.5	19.3	(0.1)	9.1	5.2
	Silver	17.1	17.0	17.4	15.4	15.3	14.4	16.5	13.8	19.1	15.7	15.4
	Change, %		0.5	(1.8)	11.4	12.1	18.6	4.0	23.9	(10.3)	8.9	11.2
	Platinum	1,053.6	1,044.9	1,065.7	967.7	934.9	900.7	1,141.5	891.1	1,384.6	1,055.7	946.6
	Change, %		0.8	(1.1)	8.9	12.7	17.0	(7.7)	18.2	(23.9)	(0.2)	11.3
	Palladium	595.9	584.8	606.9	542.3	522.8	597.2	799.3	563.0	803.4	691.9	544.2
	Change, %		1.9	(1.8)	9.9	14.0	(0.2)	(25.4)	5.9	(25.8)	(13.9)	9.5
	Copper	4,680.0	4,686.0	4,920.0	4,650.0	4,444.0	4,925.5	6,387.5	4,705.0	6,828.1	5,503.1	4,733.7
	Change, %		(0.1)	(4.9)	0.6	5.3	(5.0)	(26.7)	(0.5)	(31.5)	(15.0)	(1.1)
	Uranium	27.8	27.7	27.7	28.5	34.2	36.0	36.5	34.4	33.5	36.9	31.1
	Change, %		0.4	0.4	(2.6)	(18.7)	(22.9)	(23.9)	(19.3)	(17.2)	(24.7)	(10.8)
	HR Coil	560.0	560.0	560.0	478.0	397.0	389.0	445.0	391.0	653.2	461.5	436.8
	Change, %		0.0	0.0	17.2	41.1	44.0	25.8	43.2	(14.3)	21.4	28.2
	Scrap	274.9	272.0	275.0	405.0	250.0	161.0	250.0	250.0	401.3	252.9	308.0
	Change, %		1.1	(0.0)	(32.1)	10.0	70.7	10.0	10.0	(31.5)	8.7	(10.7)
	Zinc	1,848.0	1,835.0	1,898.0	1,757.5	1,708.0	1,607.0	2,355.0	1,609.0	2,165.0	1,941.9	1,743.1
	Change, %		0.7	(2.6)	5.1	8.2	15.0	(21.5)	14.9	(14.6)	(4.8)	6.0

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		05/10	1D	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Crude Oil	**WTI**	44.7	43.6	43.7	40.4	27.5	41.8	59.3	37.0	93.1	48.8	36.1
	Change, %		*2.4*	*2.3*	*10.7*	*62.7*	*7.0*	*(24.6)*	*20.6*	*(52.0)*	*(8.4)*	*23.6*
	Dubai	41.2	42.8	43.0	37.8	26.2	41.7	62.8	32.2	96.7	50.8	33.4
	Change, %		*(3.8)*	*(4.2)*	*9.1*	*57.4*	*(1.1)*	*(34.4)*	*28.1*	*(57.4)*	*(18.8)*	*23.5*
Crude Oil	**Gasoline(휘발유)**	55.1	56.8	57.3	54.6	40.2	59.3	83.4	54.8	110.9	69.5	51.3
Product	*Change, %*		*(3.1)*	*(3.8)*	*1.0*	*37.1*	*(7.1)*	*(33.9)*	*0.5*	*(50.4)*	*(20.8)*	*7.3*
	Kerosene(등유)	50.8	52.8	53.2	48.1	37.1	56.8	76.8	44.2	112.6	64.7	44.8
	Change, %		*(3.7)*	*(4.4)*	*5.7*	*37.0*	*(10.5)*	*(33.8)*	*15.0*	*(54.9)*	*(21.5)*	*13.4*
	Diesel(경유)	50.7	52.6	52.5	46.0	34.7	56.9	78.3	43.2	112.8	64.8	43.1
	Change, %		*(3.5)*	*(3.4)*	*10.2*	*46.3*	*(10.8)*	*(35.2)*	*17.3*	*(55.0)*	*(21.7)*	*17.7*
	Bunker-C	32.1	33.3	33.1	29.2	22.1	34.8	59.4	25.3	86.5	45.3	26.5
	Change, %		*(3.8)*	*(3.2)*	*10.0*	*45.2*	*(7.8)*	*(46.0)*	*26.8*	*(62.9)*	*(29.1)*	*21.2*
	Naphtha	41.2	42.6	43.0	42.0	31.0	47.2	63.1	43.5	94.3	52.6	38.4
	Change, %		*(3.2)*	*(4.2)*	*(2.0)*	*32.8*	*(12.8)*	*(34.7)*	*(5.2)*	*(56.3)*	*(21.7)*	*7.2*
Dubai	**Gasoline(휘발유)**	13.9	14.0	14.2	16.8	14.0	17.6	20.5	22.6	14.2	18.7	17.9
Spread	*Change*		*(0.1)*	*(0.4)*	*(2.9)*	*(0.1)*	*(3.7)*	*(6.7)*	*(8.8)*	*(0.4)*	*(4.9)*	*(4.1)*
	Kerosene(등유)	9.6	10.0	10.1	10.3	10.9	15.1	14.0	12.0	15.9	14.0	11.5
	Change		*(0.3)*	*(0.5)*	*(0.7)*	*(1.3)*	*(5.5)*	*(4.4)*	*(2.4)*	*(6.3)*	*(4.4)*	*(1.9)*
	Diesel(경유)	9.5	9.7	9.5	8.2	8.5	15.2	15.5	11.0	16.0	14.0	9.7
	Change		*(0.2)*	*(0.0)*	*1.3*	*1.0*	*(5.7)*	*(6.0)*	*(1.6)*	*(6.6)*	*(4.5)*	*(0.2)*
	Bunker-C	(9.2)	(9.5)	(9.9)	(8.6)	(4.1)	(6.9)	(3.5)	(6.9)	(10.3)	(5.5)	(6.9)
	Change		*0.4*	*0.7*	*(0.5)*	*(5.1)*	*(2.3)*	*(5.7)*	*(2.3)*	*1.1*	*(3.6)*	*(2.2)*
	Naphtha	(0.0)	(0.3)	(0.0)	4.3	4.8	5.6	0.3	11.3	(2.4)	1.8	5.1
	Change		*0.2*	*(0.0)*	*(4.3)*	*(4.9)*	*(5.6)*	*(0.3)*	*(11.3)*	*2.4*	*(1.9)*	*(5.1)*
Refining	**Simple(단순)**	(0.4)	(0.5)	(0.6)	0.3	2.5	3.3	4.4	3.2	(0.1)	3.3	1.9
Margin	*Change*		*0.1*	*0.3*	*(0.7)*	*(2.9)*	*(3.7)*	*(4.8)*	*(3.5)*	*(0.2)*	*(3.6)*	*(2.2)*
	Complex(복합)	5.2	5.3	5.2	6.0	6.6	9.6	10.5	9.7	7.1	9.3	7.4
	Change		*(0.0)*	*0.1*	*(0.8)*	*(1.3)*	*(4.3)*	*(5.3)*	*(4.5)*	*(1.8)*	*(4.1)*	*(2.2)*
	Complex(lagging)	11.0	11.9	11.1	12.2	0.6	5.9	19.5	2.3	2.2	6.5	8.6
	Change		*(0.9)*	*(0.0)*	*(1.1)*	*10.4*	*5.2*	*(8.5)*	*8.7*	*8.8*	*4.5*	*2.4*

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			05/10	05/09	05/06	05/05	05/04	05/03	05/02	04/29	04/28	04/27
Spot Price	**Naphtha**	CFR Japan	387.3	398.3	391.0	395.8	398.0	403.0	426.8	426.8	415.5	420.5
	Ethylene	CFR SE Asia	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0	1,145.0
	Propylene	FOB Korea	698.0	705.0	705.0	705.0	705.0	705.0	705.0	705.0	705.0	705.0
	Butadiene	FOB Korea	1,075.0	1,075.0	1,070.0	1,050.0	1,050.0	1,050.0	1,050.0	1,050.0	1,050.0	1,050.0
	HDPE	CFR FE Asia	1,130.0	1,130.0	1,140.0	1,155.0	1,160.0	1,140.0	1,125.0	1,125.0	1,125.0	1,125.0
	LDPE	CFR FE Asia	1,150.0	1,150.0	1,160.0	1,175.0	1,180.0	1,160.0	1,150.0	1,150.0	1,150.0	1,150.0
	LLDPE	CFR FE Asia	1,130.0	1,135.0	1,150.0	1,165.0	1,170.0	1,130.0	1,120.0	1,120.0	1,120.0	1,120.0
	MEG	CFR China	618.0	620.0	634.0	645.0	648.0	658.0	652.0	652.0	651.0	650.0
	PP	CFR FE Asia	945.0	950.0	955.0	965.0	970.0	970.0	980.0	980.0	980.0	985.0
	PX	CFR China	769.3	770.8	774.0	783.3	786.3	792.0	803.3	803.3	798.7	801.0
	PTA	CFR China	606.0	610.0	610.0	617.0	617.0	619.0	623.0	623.0	625.0	624.0
	Benzene	FOB Korea	647.0	653.0	652.0	658.0	653.5	657.5	661.5	661.5	657.0	656.5
	Toluene	FOB Korea	593.0	603.0	610.0	620.0	616.0	626.0	631.0	631.0	619.5	630.5
	Xylene	FOB Korea	665.0	671.0	657.0	671.0	662.0	669.0	681.0	681.0	681.0	681.0
	SM	FOB Korea	1,009.0	1,022.5	1,044.0	1,056.0	1,056.0	1,056.0	1,066.0	1,066.0	1,051.0	1,046.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**Naphtha**	CFR Japan	387.0	422.5	383.5	283.5	384.5	574.0	413.5	865.9	493.0	363.2
	Change, %			*(8.4)*	*0.9*	*36.5*	*0.7*	*(32.6)*	*(6.4)*	*(55.3)*	*(21.5)*	*6.6*
	Ethylene	CFR SE Asia	1,125.0	1,125.0	1,160.0	890.0	1,095.0	1,390.0	1,090.0	1,401.1	1,103.7	1,055.5
	Change, %			*0.0*	*(3.0)*	*26.4*	*2.7*	*(19.1)*	*3.2*	*(19.7)*	*1.9*	*6.6*
	Propylene	CFR SE Asia	685.0	730.0	750.0	650.0	625.0	952.5	650.0	1,254.2	770.0	630.8
	Change, %			*(6.2)*	*(8.7)*	*5.4*	*9.6*	*(28.1)*	*5.4*	*(45.4)*	*(11.0)*	*8.6*
	Butadiene	CFR SE Asia	1,065.0	1,065.0	985.0	785.0	740.0	1,050.0	720.0	1,281.7	877.5	906.1
	Change, %			*0.0*	*8.1*	*35.7*	*43.9*	*1.4*	*47.9*	*(16.9)*	*21.4*	*17.5*
	Benzene	CFR SE Asia	665.0	660.0	632.5	550.0	582.5	850.0	580.0	1,243.1	690.0	599.3
	Change, %			*0.8*	*5.1*	*20.9*	*14.2*	*(21.8)*	*14.7*	*(46.5)*	*(3.6)*	*11.0*
	Toluene	CFR SE Asia	670.0	670.0	655.0	585.0	630.0	840.0	630.0	1,082.5	700.8	625.5
	Change, %			*0.0*	*2.3*	*14.5*	*6.3*	*(20.2)*	*6.3*	*(38.1)*	*(4.4)*	*7.1*
	Xylene	CFR SE Asia	660.0	660.0	647.5	587.5	640.0	815.0	625.0	1,055.7	699.3	618.2
	Change, %			*0.0*	*1.9*	*12.3*	*3.1*	*(19.0)*	*5.6*	*(37.5)*	*(5.6)*	*6.8*
Spread	**Ethylene**	-Naphtha	738.0	702.5	776.5	606.5	710.5	816.0	676.5	535.2	610.6	692.3
	Change, %			*5.1*	*(5.0)*	*21.7*	*3.9*	*(9.6)*	*9.1*	*37.9*	*20.9*	*6.6*
	Propylene	-Naphtha	298.0	307.5	366.5	366.5	240.5	378.5	236.5	388.3	277.0	267.6
	Change, %			*(3.1)*	*(18.7)*	*(18.7)*	*23.9*	*(21.3)*	*26.0*	*(23.3)*	*7.6*	*11.4*
	Butadiene	-Naphtha	678.0	642.5	601.5	501.5	355.5	476.0	306.5	415.9	384.5	542.9
	Change, %			*5.5*	*12.7*	*35.2*	*90.7*	*42.4*	*121.2*	*63.0*	*76.4*	*24.9*
	Benzene	-Naphtha	278.0	237.5	249.0	266.5	198.0	276.0	166.5	377.3	197.0	236.2
	Change, %			*17.1*	*11.6*	*4.3*	*40.4*	*0.7*	*67.0*	*(26.3)*	*41.1*	*17.7*
	Toluene	-Naphtha	283.0	247.5	271.5	301.5	245.5	266.0	216.5	216.6	207.8	262.3
	Change, %			*14.3*	*4.2*	*(6.1)*	*15.3*	*6.4*	*30.7*	*30.6*	*36.2*	*7.9*
	Xylene	-Naphtha	273.0	237.5	264.0	304.0	255.5	241.0	211.5	189.9	206.3	255.0
	Change, %			*14.9*	*3.4*	*(10.2)*	*6.8*	*13.3*	*29.1*	*43.8*	*32.4*	*7.1*

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

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2014avg.	2015avg.	2016acc.
Spot Price	**HDPE**	CFR SE Asia	1,195.0	1,195.0	1,210.0	1,075.0	1,075.0	1,420.0	1,065.0	1,524.9	1,230.1	1,135.5
	Change, %			0.0	(1.2)	11.2	11.2	(15.8)	12.2	(21.6)	(2.9)	5.2
	MEG	CFR SE Asia	637.5	655.0	662.5	605.0	585.0	1,017.5	617.5	934.1	780.8	647.2
	Change, %			(2.7)	(3.8)	5.4	9.0	(37.3)	3.2	(31.8)	(18.4)	(1.5)
	PVC	CFR SE Asia	830.0	820.0	800.0	725.0	715.0	885.0	715.0	1,013.9	820.8	761.8
	Change, %			1.2	3.8	14.5	16.1	(6.2)	16.1	(18.1)	1.1	8.9
	PP	CFR SE Asia	1,020.0	1,020.0	1,070.0	840.0	830.0	1,380.0	835.0	1,503.0	1,109.8	930.3
	Change, %			0.0	(4.7)	21.4	22.9	(26.1)	22.2	(32.1)	(8.1)	9.6
	2-EH	CFR Korea	810.0	810.0	792.5	680.0	685.0	1,110.0	680.0	1,397.1	930.1	737.6
	Change, %			0.0	2.2	19.1	18.2	(27.0)	19.1	(42.0)	(12.9)	9.8
	ABS	CFR SE Asia	1,320.0	1,345.0	1,345.0	1,120.0	1,130.0	1,680.0	1,130.0	1,897.7	1,431.1	1,225.3
	Change, %			(1.9)	(1.9)	17.9	16.8	(21.4)	16.8	(30.4)	(7.8)	7.7
	SBR	CFR SE Asia	1,545.0	1,535.0	1,450.0	1,195.0	1,200.0	1,490.0	1,150.0		1,332.1	1,326.3
	Change, %			0.7	6.6	29.3	28.8	3.7	34.3		16.0	16.5
	SM	CFR SE Asia	1,082.5	1,082.5	1,117.5	970.0	955.0	1,412.5	910.0	1,547.1	1,100.7	1,041.1
	Change, %			0.0	(3.1)	11.6	13.4	(23.4)	19.0	(30.0)	(1.7)	4.0
	Caustic	FOB NEA	292.5	290.0	285.0	287.5	285.0	300.0	285.0	310.0	296.8	286.7
	Change, %			0.9	2.6	1.7	2.6	(2.5)	2.6	(5.7)	(1.4)	2.0
	PX	CFR SE Asia	792.5	822.5	787.5	735.0	745.0	967.5	762.5	1,228.5	842.9	766.3
	Change, %			(3.6)	0.6	7.8	6.4	(18.1)	3.9	(35.5)	(6.0)	3.4
	PO	CFR China	1,222.5	1,222.5	1,252.5	1,137.5	1,205.0	1,812.5	1,257.5	2,179.2	1,683.4	1,213.0
	Change, %			0.0	(2.4)	7.5	1.5	(32.6)	(2.8)	(43.9)	(27.4)	0.8
	Caprolactam	CFR SE Asia	1,340.0	1,320.0	1,310.0	1,110.0	1,250.0	1,750.0	1,260.0	2,233.4	1,581.5	1,232.6
	Change, %			1.5	2.3	20.7	7.2	(23.4)	6.3	(40.0)	(15.3)	8.7
	PTA	CFR SE Asia	627.5	632.5	622.5	580.0	582.5	787.5	585.0	911.7	648.0	597.0
	Change, %			(0.8)	0.8	8.2	7.7	(20.3)	7.3	(31.2)	(3.2)	5.1
Spread	**HDPE**		808.0	772.5	826.5	791.5	690.5	846.0	651.5	659.0	737.1	772.3
	Change, %			4.6	(2.2)	2.1	17.0	(4.5)	24.0	22.6	9.6	4.6
	MEG		250.5	232.5	279.0	321.5	200.5	443.5	204.0	68.2	287.8	284.1
	Change, %			7.7	(10.2)	(22.1)	24.9	(43.5)	22.8	267.1	(13.0)	(11.8)
	PVC		443.0	397.5	416.5	441.5	330.5	311.0	301.5	148.0	327.8	398.7
	Change, %			11.4	6.4	0.3	34.0	42.4	46.9	199.3	35.1	11.1
	PP		633.0	597.5	686.5	556.5	445.5	806.0	421.5	637.1	616.8	567.1
	Change, %			5.9	(7.8)	13.7	42.1	(21.5)	50.2	(0.6)	2.6	11.6
	2-EH		423.0	387.5	409.0	396.5	300.5	536.0	266.5	531.3	437.0	374.4
	Change, %			9.2	3.4	6.7	40.8	(21.1)	58.7	(20.4)	(3.2)	13.0
	ABS		933.0	922.5	961.5	836.5	745.5	1,106.0	716.5	1,031.9	938.1	862.1
	Change, %			1.1	(3.0)	11.5	25.2	(15.6)	30.2	(9.6)	(0.5)	8.2
	SBR	BD spread	480.0	470.0	465.0	410.0	460.0	440.0	430.0		454.7	420.3
	Change, %			2.1	3.2	17.1	4.3	9.1	11.6		5.6	14.2
	SM		695.5	660.0	734.0	686.5	570.5	838.5	496.5	681.2	607.7	677.9
	Change, %			5.4	(5.2)	1.3	21.9	(17.1)	40.1	2.1	14.4	2.6
	Caustic											
	Change, %											
	PX		405.5	400.0	404.0	451.5	360.5	393.5	349.0	362.6	349.9	403.1
	Change, %			1.4	0.4	(10.2)	12.5	3.0	16.2	11.8	15.9	0.6
	PO	propylene sprea	537.5	492.5	502.5	487.5	580.0	860.0	607.5	925.0	913.4	582.2
	Change, %			9.1	7.0	10.3	(7.3)	(37.5)	(11.5)	(41.9)	(41.2)	(7.7)
	Caprolactam	benzene spread	675.0	660.0	677.5	560.0	667.5	900.0	680.0	990.3	891.6	633.3
	Change, %			2.3	(0.4)	20.5	1.1	(25.0)	(0.7)	(31.8)	(24.3)	6.6
	PTA	px spread	72.8	56.8	71.3	65.5	61.0	110.3	51.3	51.8	58.0	60.6
	Change, %			28.2	2.1	11.1	19.3	(34.0)	42.0	40.6	25.4	20.1

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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Global peers

	Currency	05/10	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	51.5	1.4	(0.4)	1.5	11.7	(0.3)	(0.6)	0.1	57,871	14.8	13.2	2.4	2.3	8.1	7.5
Du Pont	USD	65.0	1.4	0.2	2.8	12.2	(2.0)	(9.1)	(2.4)	56,770	20.7	17.6	6.0	4.7	11.8	10.2
Eastman	USD	75.8	1.4	(0.5)	5.4	29.3	10.5	(5.3)	12.3	11,209	10.8	9.8	2.4	2.1	8.2	7.9
BASF	EUR	69.2	0.7	1.8	9.7	20.7	(8.9)	(21.8)	(2.2)	72,303	15.3	13.6	2.0	1.9	7.8	7.2
Akzo Nobel	EUR	62.0	0.8	0.5	6.7	18.4	(4.3)	(10.5)	0.5	17,570	14.8	14.1	2.3	2.1	8.1	7.7
Arkema	EUR	68.1	0.7	(1.0)	3.7	34.8	2.6	(5.7)	5.4	5,846	14.1	11.8	1.3	1.3	6.0	5.5
Lanxess	EUR	44.2	0.2	(1.0)	6.1	28.7	(8.3)	(14.3)	3.6	4,604	20.7	16.3	1.6	1.5	5.8	5.3
Sumitomo Chemical	JPY	492	2.7	1.2	6.3	0.0	(28.1)	(24.7)	(29.8)	7,453	8.9	7.9	0.9	0.8	7.0	6.5
Mitsubishi Chemical	JPY	572	3.0	1.8	7.6	(4.7)	(28.5)	(22.9)	(26.1)	7,884	9.3	8.3	0.8	0.8	5.7	5.5
Shin-Etsu Chemical	JPY	6,215	2.5	1.5	6.8	13.0	(14.2)	(17.0)	(6.1)	24,575	17.5	16.3	1.2	1.2	6.0	5.6
Asahi Kasei	JPY	754	2.2	1.8	4.6	8.0	1.1	(33.2)	(8.3)	9,683	11.2	10.0	0.9	0.8	5.5	5.2
JSR	JPY	1,549	4.7	4.8	2.4	(1.5)	(17.9)	(24.1)	(18.4)	3,205	12.8	12.0	0.9	0.9	5.1	4.8
Nitto Denko	JPY	6,840	8.2	4.0	17.4	19.6	(22.1)	(16.6)	(23.2)	10,876	15.3	14.4	1.6	1.5	6.3	6.0
SABIC	SAR	83.2	(0.8)	1.4	7.2	25.8	1.7	(20.8)	8.8	66,567	17.5	14.8	1.5	1.4	8.1	7.0
Yansab	SAR	38.9	(1.4)	(3.7)	(1.2)	40.9	(8.2)	(27.9)	20.1	5,836	16.5	14.3	1.4	1.4	8.4	7.9
Formosa Plastics	TWD	77.1	(0.6)	(2.4)	(2.3)	2.4	4.0	(1.9)	0.1	15,081	15.8	14.6	1.6	1.6	23.2	21.0
Formosa Fiber	TWD	80.3	0.0	(0.6)	0.2	13.9	12.8	4.6	8.5	14,462	16.4	15.9	1.5	1.5	13.6	12.7
Nan Ya Plastics	TWD	61.9	0.7	(1.3)	(5.6)	5.3	(0.2)	(17.8)	1.5	15,085	14.1	14.2	1.4	1.4	14.5	13.8
Sinopec Shanghai	CNY	6.13	(1.1)	(10.5)	(18.8)	11.9	(20.6)	(26.6)	(5.4)	8,476	17.1	17.7	2.9	2.6	8.3	8.6
Sinopec Yizheng(Fibe	CNY	4.14	(0.5)	(9.8)	(17.5)	(34.5)	(58.7)	(51.1)	(49.3)	8,067	#N/A N/A	414.0	2.4	2.4	16.7	14.0
Reliance	INR	983	(0.1)	0.7	(5.2)	2.1	6.5	10.4	(3.2)	47,738	11.1	9.5	1.2	1.1	9.0	7.4
Industries Qatar	QAR	99.0	(0.9)	(2.2)	(5.9)	(1.8)	(11.1)	(33.0)	(10.9)	16,454	14.1	12.9	1.8	1.7	52.6	50.6
PTT Chemical	THB	58.8	(1.3)	(3.3)	0.9	11.4	6.3	(7.5)	17.5	7,434	10.9	9.7	1.1	1.0	5.4	5.1
Petronas	MYR	6.4	5.1	(3.7)	(4.2)	(7.5)	(1.8)	9.6	(11.7)	12,675	18.6	17.0	2.0	1.9	9.1	8.3
LG화학	KRW	282,000	1.4	(3.4)	(11.7)	(6.3)	(4.9)	5.2	(14.2)	15,956	0.0	13.9	0.0	1.5	0.0	5.5
롯데케미칼	KRW	288,000	1.8	(1.4)	(12.5)	0.2	25.5	18.5	18.3	8,428	0.0	7.2	0.0	1.1	0.0	4.0
한화케미칼	KRW	24,000	0.8	(3.6)	4.3	(3.0)	15.4	52.4	(11.8)	3,377	0.0	9.5	0.0	0.8	0.0	8.6
금호석유	KRW	66,800	4.4	(0.7)	9.5	18.2	17.2	(20.4)	28.2	1,738	0.0	17.0	0.0	1.3	0.0	10.7
SKC	KRW	27,450	0.2	(3.3)	(7.9)	(8.2)	(25.1)	(33.8)	(18.8)	866	0.0	8.2	0.0	0.7	0.0	7.2
국도화학	KRW	62,600	0.8	(1.1)	(9.5)	11.0	10.0	(9.1)	5.6	311	0.0	7.2	0.0	0.8	0.0	3.9
효성	KRW	4,115	5.5	(2.8)	35.4	53.8	41.9	(3.1)	57.7	3,448	0.0	7.1	0.0	1.1	0.0	6.9
Average			**1.4**	**(1.2)**	**1.2**	**10.5**	**(3.5)**	**(11.6)**	**(1.7)**							
Refinery																
Valero	USD	56.0	1.9	(2.8)	(11.2)	2.0	(21.5)	(5.2)	(20.8)	26,309	9.1	7.9	1.2	1.1	4.8	4.5
Conoco Phillips	USD	42.9	2.9	(4.9)	4.0	32.6	(21.6)	(36.2)	(8.2)	53,090	#N/A N/A	182.4	1.4	1.4	14.5	7.8
Formosa Petrochemi	TWD	88.4	(2.4)	(3.2)	(1.7)	10.0	15.3	11.2	12.2	25,876	18.0	17.6	3.0	2.9	11.3	11.2
Tesoro	USD	77.1	1.8	(2.0)	(7.3)	4.2	(33.0)	(14.8)	(26.8)	9,251	10.2	10.0	1.6	1.4	5.8	5.5
Marathon Petroleum	USD	35.5	1.4	(6.7)	(8.4)	11.9	(35.3)	(32.4)	(31.6)	18,783	9.4	8.0	1.4	1.2	6.4	5.8
Devon Energy	USD	31.5	5.0	(3.7)	9.6	45.8	(34.0)	(53.5)	(1.4)	16,527	#N/A N/A	49.5	2.7	2.6	15.8	9.6
Hollyfrontier	USD	29.0	3.5	(15.7)	(17.8)	(4.6)	(42.5)	(31.3)	(27.2)	5,123	11.6	8.6	1.0	0.9	6.0	5.2
Phillips 66	USD	79.3	1.2	(0.9)	(7.9)	5.3	(14.0)	(2.9)	(3.1)	41,652	13.9	11.3	1.7	1.6	8.0	6.9
Murphy Oil	USD	29.9	3.7	(10.5)	16.4	78.5	(2.8)	(35.9)	33.2	5,150	#N/A N/A	#N/A N/A	1.1	1.1	9.6	6.6
JX Holdings	JPY	447.7	(0.5)	(2.5)	4.0	1.0	(5.5)	(13.0)	(11.9)	10,224	8.3	7.6	0.7	0.6	10.0	9.6
Cosmo Oil	JPY	164.0	0.0	0.0	0.0	0.0	0.0	(8.9)	0.0	1,151	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Idemitsu	JPY	2,263.0	(2.6)	(3.3)	19.0	33.0	14.1	(2.2)	16.8	3,313	6.6	6.1	0.6	0.5	7.0	6.7
Tonengeneral	JPY	996.0	(1.3)	(2.4)	5.1	6.6	(21.1)	(12.9)	(2.5)	3,336	11.1	9.1	1.4	1.3	12.8	7.2
Nesteoil	EUR	28.7	3.2	1.1	(3.6)	9.6	19.1	24.0	3.8	0	11.0	11.8	2.1	1.9	6.9	7.3
Ashland	USD	112.8	2.0	0.7	3.4	24.7	1.5	(13.5)	9.9	7,003	15.8	14.6	2.6	2.5	9.0	8.7
Fuchs Petrolub	EUR	37.1	1.2	(0.8)	(3.6)	6.2	(12.1)	(2.3)	(14.7)	5,583	20.7	19.7	4.2	3.8	12.0	11.4
SK이노베이션	KRW	151,500	3.4	(4.1)	(11.4)	6.7	30.6	32.3	16.5	11,960	0.0	7.8	0.0	0.8	0.0	4.6
S-Oil	KRW	83,300	2.0	(6.6)	(13.8)	(0.8)	23.8	17.8	4.9	8,007	0.0	7.6	0.0	1.5	0.0	5.3
GS	KRW	53,400	0.9	(3.4)	(8.6)	2.5	3.7	7.8	5.3	4,236	0.0	7.1	0.0	0.7	0.0	8.0
Average			**1.4**	**(3.8)**	**(1.8)**	**14.5**	**(7.1)**	**(9.0)**	**(2.4)**							

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

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Global peers

	Currency	05/10	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	1.6	2.1	8.1	13.4	9.3	1.1	15.4	373,154	35.1	21.1	2.2	2.2	11.6	8.6
BP	GBP	358	1.7	(2.9)	2.1	8.3	(6.5)	(22.5)	1.0	96,255	29.7	13.7	1.0	1.0	6.2	4.8
Shell	EUR	1,720	1.0	(2.0)	(0.8)	18.2	2.0	(17.0)	12.7	199,666	21.8	12.3	0.9	0.9	7.1	5.2
Chevron	USD	101	0.9	(0.0)	5.1	22.0	8.6	(6.8)	12.6	190,864	80.8	22.0	1.3	1.3	9.3	6.5
Total	EUR	43	1.4	(0.1)	6.6	16.8	(7.3)	(11.1)	3.4	120,372	16.5	12.1	1.2	1.2	7.5	5.8
Sinopec	CNY	5	0.2	(4.1)	(4.5)	7.1	(13.7)	(38.7)	(6.2)	85,217	18.2	12.6	0.8	0.8	5.5	4.8
Petrochina	CNY	7	(0.1)	(4.3)	(4.4)	(0.6)	(22.4)	(42.1)	(13.9)	193,149	75.7	22.1	1.1	1.1	8.0	6.4
CNOOC	CNY	12	0.5	(6.6)	(3.9)	(2.6)	(32.1)	(51.6)	(20.3)	6,994	90.3	41.5	1.3	1.2	14.0	11.6
Gazprom	RUB	157	(1.5)	(6.9)	7.7	17.9	15.7	0.9	15.3	56,035	3.9	3.4	0.3	0.3	4.4	4.1
Rosneft	RUB	324	(1.7)	(7.8)	2.2	21.8	25.6	24.7	27.7	51,739	11.1	7.1	1.1	0.9	4.8	4.1
Anadarko	USD	47	4.5	(6.2)	(2.7)	25.7	(25.9)	(46.9)	(3.2)	23,995	#N/A N/A	#N/A N/A	2.0	2.1	13.1	8.3
Petrobras	BRL	10	7.7	4.4	23.6	136.9	34.2	(24.5)	52.4	43,843	38.0	6.5	0.5	0.5	6.2	5.4
Lukoil	USD	2,586	(1.7)	(6.1)	(6.9)	8.5	2.6	(3.9)	10.2	33,295	6.6	5.0	0.3	0.4	N/A	N/A
Kinder	USD	17	1.0	(0.5)	(4.2)	17.7	(32.5)	(60.1)	15.1	47,497	26.2	21.9	1.1	1.1	11.3	10.6
Statoil	NOK	134	0.0	(1.8)	5.8	18.0	(3.6)	(14.1)	8.2	52,064	36.4	16.3	1.3	1.2	4.4	3.1
BHP	AUD	18	(3.2)	(14.0)	10.2	13.9	(17.3)	(39.0)	(0.2)	66,893	35.6	19.3	1.2	1.2	7.9	6.5
PTT E&P	THB	74	0.3	0.0	7.6	28.1	1.0	(37.3)	29.3	8,335	27.9	15.7	0.7	0.7	2.9	2.6
Petronas gas	MYR	21	1.9	(2.7)	(2.7)	(4.6)	(7.1)	(6.5)	(6.2)	10,401	23.0	22.6	3.5	3.4	13.4	13.0
Chesapeake	USD	4	4.9	(25.9)	14.4	152.9	(39.1)	(71.9)	(4.4)	2,944	#N/A N/A	12.9	3.0	2.2	16.1	10.4
Noble Energy	USD	36	3.1	3.2	14.5	29.4	(3.9)	(26.0)	10.4	15,616	#N/A N/A	#N/A N/A	1.6	1.7	11.3	9.5
Average		**0**	**1.1**	**(4.1)**	**3.9**	**27.5**	**(5.6)**	**(24.7)**	**8.0**							
PV																
WACKER	EUR	82.2	(0.2)	(2.2)	7.0	33.6	0.5	(26.9)	6.1	4,880	30.4	17.7	1.6	1.5	5.5	4.9
GCL-Poly	HKD	1.2	0.0	1.8	(3.4)	13.9	(28.4)	(47.5)	(0.9)	2,754	7.4	6.6	0.8	0.7	6.2	5.5
REC	NOK	107.5	0.0	0.0	0.0	0.0	0.0	1.9	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	16.6	(1.5)	(9.4)	(22.3)	(24.2)	(36.7)	(49.0)	(44.7)	#N/A N/A	12.4	9.5	1.5	1.4	7.7	6.1
Canadian Solar	USD	15.5	0.0	(6.7)	(10.7)	(11.1)	(30.5)	(58.3)	(46.6)	888	8.2	5.8	0.9	0.7	5.1	4.3
JA Solar	USD	8.2	2.6	(2.5)	(6.6)	(0.7)	0.1	(18.9)	(15.6)	390	5.3	4.4	0.4	0.4	2.5	2.2
Trina Solar	USD	8.5	0.8	(5.2)	(11.8)	(2.6)	(11.8)	(29.5)	(22.5)	790	6.1	5.5	0.6	0.5	5.7	5.0
Solar City	USD	17.8	(20.8)	(32.6)	(36.3)	(4.3)	(32.7)	(70.9)	(65.1)	1,752	#N/A N/A	#N/A N/A	6.4	#N/A N/A	#N/A N/A	#N/A N/A
Yingli	USD	3.4	13.2	11.4	(24.5)	(13.0)	(49.7)	(79.9)	(24.5)	62	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	9.2	8.8
First Solar	USD	51.3	1.3	(3.0)	(15.4)	(20.4)	(8.2)	(9.0)	(22.3)	5,242	11.9	16.3	0.9	0.8	6.1	6.9
한화솔라원	USD	11.0	(1.8)	(12.5)	(19.7)	(27.0)	(36.0)	(48.3)	(50.1)	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
OCI	KRW	107,500	(4.0)	(12.6)	5.9	55.8	37.6	11.3	43.3	2,189	0.0	8.1	0.0	0.8	0.0	8.9
웅진에너지	KRW	1,120	(1.8)	(7.8)	(20.0)	(30.9)	(24.6)	(27.5)	(35.3)	103	N/A	0.0	0.8	0.0	8.9	0.0
신성솔라에너지	KRW	1,590	0.6	(5.1)	3.6	(2.3)	28.1	20.2	(14.3)	136	N/A	0.8	0.0	8.9	0.0	7.1
Average			**(0.8)**	**(6.2)**	**(11.0)**	**(2.4)**	**(13.7)**	**(30.9)**	**(20.9)**							
Gas Company																
Towngas China	HKD	4.1	(0.2)	2.8	2.3	8.5	(17.0)	(51.3)	(9.1)	1,404	8.4	8.3	0.8	0.7	10.4	9.7
Kulun	HKD	6.2	(1.0)	(7.9)	(8.9)	5.5	0.5	(30.9)	(10.9)	6,396	12.6	9.9	0.9	0.9	5.2	4.8
Beijing Enterprise	HKD	38.5	2.3	(4.9)	(3.6)	9.5	(18.0)	(46.5)	(18.0)	6,300	7.8	7.3	0.8	0.7	13.0	11.6
ENN Energy	HKD	38.6	2.3	0.5	(12.3)	12.4	(3.7)	(29.6)	(6.7)	5,382	12.0	10.6	2.2	1.9	7.8	7.0
China Resources Gas	HKD	21.7	2.4	(1.6)	(5.0)	9.3	5.9	(11.8)	(6.3)	6,217	14.0	12.6	2.4	2.1	8.9	8.1
China Gas Holdings	HKD	10.7	1.1	(4.0)	(7.1)	11.7	(6.0)	(19.5)	(4.7)	6,743	11.8	10.5	2.2	1.9	9.9	8.8
Shenzen Gas	HKD	12.5	0.2	(2.8)	(2.3)	2.3	0.2	(10.8)	(12.8)	3,058	11.3	10.3	1.1	1.1	6.4	5.9
Shann Xi	CNY	9.5	(0.9)	(5.1)	(7.0)	6.4	(30.1)	(38.5)	(24.4)	1,624	15.1	12.9	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Suntien	HKD	0.9	(1.1)	0.0	2.4	(1.1)	(34.6)	(53.7)	(29.8)	416	9.1	7.0	0.4	0.3	8.7	7.2
China Oil & Gas	HKD	0.5	1.9	(5.3)	11.3	13.7	1.9	(42.9)	1.9	405	10.8	9.8	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.7**	**(2.8)**	**(3.0)**	**7.8**	**(10.1)**	**(33.6)**	**(12.1)**							
EV																
LG화학	KRW	282,000	1.4	(3.4)	(11.7)	(6.3)	(4.9)	5.2	(14.2)	15,956	13.2	11.7	1.4	1.3	5.7	5.3
삼성SDI	KRW	115,000	(1.3)	0.4	15.3	20.4	4.5	(3.0)	0.9	6,752	15.7	25.2	0.7	0.7	185.1	9.0
Panasonic	JPY	952.4	3.6	3.4	5.3	11.2	(33.6)	(42.7)	(23.2)	21,379	11.2	9.8	1.0	1.0	3.2	3.0
GS Yuasa	JPY	449.0	1.6	2.5	(4.7)	1.6	(2.0)	(19.7)	(0.7)	1,699	12.6	10.9	1.0	1.0	5.9	5.4
NEC	JPY	257.0	2.0	0.4	(3.7)	(4.5)	(34.1)	(37.6)	(33.2)	6,126	9.9	8.8	0.8	0.7	5.4	5.2
BYD Auto	CNY	58.7	(0.5)	(8.7)	1.7	17.2	(15.9)	(1.3)	(8.9)	19,006	36.6	28.9	4.0	3.6	15.4	13.2
Tesla Motors	USD	208.7	(0.1)	(10.2)	(16.5)	45.3	(3.6)	(11.8)	(13.0)	27,953	281.3	74.6	17.9	14.6	37.5	21.3
Kandi Technologies	USD	6.6	(4.2)	(7.5)	(8.5)	0.3	(32.3)	(47.9)	(39.8)	313	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**0.3**	**(2.9)**	**(2.9)**	**10.7**	**(15.2)**	**(19.8)**	**(16.5)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임