SK Energy Daily

에너지/Commodity/정유화학, 손지우 | 3773-8827, jwshon@sk.com
R.A. 유승우 | 3773-9180, yswbest@sk.com
SK증권

1. News Summary (3 page)

2018년 3월 22일

News		Conclusion
WTI comment	미 재고 감소에 강세…WTI 2.6%↑	
Headline	가스프롬의 Power of Siberia I 건설이 75.5% 완료됨	Power of Siberia I 가동 개시 전까지 스팟성 LNG 수입으로 수요 충당
News 1.	러시아와 중국이 새로운 Siberian 석유화학 플랜트 건설로 관계 증진	중국이 가스 사용량을 늘리며 ECC 증설도 지속적으로 증가할 전망
News 2.	-	-
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	65.2	2.8	6.9	5.3	12.2	35.7
Dubai	$/bbl	63.9	1.4	4.3	3.0	3.7	30.3
Gasoline	$/bbl	78.4	1.7	4.9	3.1	4.6	24.6
Diesel	$/bbl	78.9	1.1	2.7	3.2	4.1	30.3
Complex margin	$/bbl	8.1	(0.1)	(0.4)	0.1	0.0	1.1
1M lagging	$/bbl	10.3	0.8	1.7	6.7	0.3	8.4
Petrochemical			%	%	%	%	%
Naphtha	$/t	583	0.8	3.0	5.8	(2.6)	25.6
Butadiene	$/t	1,430	0.0	0.0	5.5	30.0	(31.9)
HDPE	$/t	1,320	(1.5)	(1.5)	(2.2)	3.1	14.8
MEG	$/t	899	(1.0)	(2.0)	(11.4)	(2.3)	14.1
PX	$/t	932	0.1	(0.1)	(1.9)	4.7	10.0
SM	$/t	1,231	(1.6)	(7.2)	(13.1)	(2.3)	(1.2)
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.64	(1.4)	(3.4)	(1.6)	3.7	(8.1)
Natural rubber	$/t	1,420	0.7	(2.1)	(1.4)	0.0	(24.5)
Cotton	C/lbs	82.6	(0.6)	(1.0)	4.7	9.1	6.8

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	03/19	$/t	1,250	2.5	6.6	0.4	16.3
Propylene	03/19	$/t	980	(1.5)	(3.4)	10.1	13.3
Benzene	03/19	$/t	868	(1.7)	(3.1)	(5.7)	4.5
Toluene	03/19	$/t	720	0.0	(4.0)	(2.0)	4.3
Xylene	03/19	$/t	763	(0.3)	0.7	7.4	5.9
PP	03/19	$/t	1,298	(0.8)	1.8	12.1	17.2
PVC	03/19	$/t	970	(1.0)	(1.0)	12.1	3.2
ABS	03/19	$/t	2,020	(2.4)	(1.9)	(2.4)	12.2
SBR	03/19	$/t	1,750	0.0	(0.3)	6.1	(36.2)
SM	03/19	$/t	1,338	(4.3)	(7.0)	0.4	3.7
BPA	03/19	$/t	1,875	(4.5)	(1.7)	0.1	30.9
Caustic	03/19	$/t	601	1.9	9.5	(3.2)	34.8
2-EH	03/19	$/t	1,130	0.4	4.6	9.2	12.4
Caprolactam	03/19	$/t	2,180	1.4	5.8	5.8	(5.2)
Solar				%	%	%	%
Polysilicon	03/21	$/kg	14.9	0.0	(8.0)	(14.6)	(3.6)
Module	03/21	$/W	0.30	(0.3)	(1.6)	(3.2)	(11.7)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	75.0	1.4	2.0	0.2	(10.5)	(8.3)
Shell	EUR	2,217	0.8	0.2	(1.8)	(9.7)	4.9
Petrochina	CNY	8.03	(0.5)	0.5	0.1	0.6	0.0
Gazprom	RUB	141.5	(0.7)	2.0	(1.7)	7.4	9.4
Petrobras	BRL	22.1	4.2	(1.5)	8.9	39.0	69.6
Refinery							
Phillips66	USD	96.2	1.1	2.1	7.3	(3.9)	22.3
Valero	USD	95.5	1.0	3.0	5.1	5.2	42.1
JX	JPY	635.2	0.0	0.4	(3.4)	(10.8)	17.9
Neste Oil	EUR	57.9	0.9	(0.6)	(3.1)	7.1	63.8

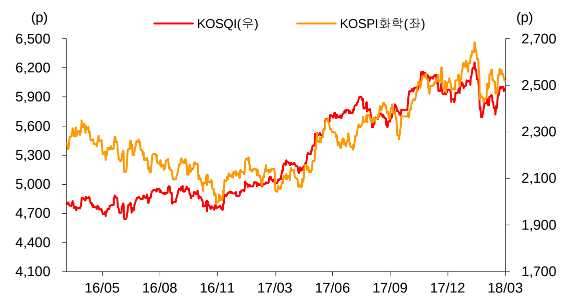
	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	84.3	(0.3)	1.1	(3.3)	(9.6)	(4.5)
DowDuPont	USD	67.4	1.6	(2.3)	(5.0)	(5.9)	6.9
SABIC	SAR	110.2	0.6	0.2	5.1	8.3	14.5
Formosa Pla.	TWD	106.5	1.4	4.4	2.4	12.2	14.5
Shin-Etsu	JPY	10,925	0.0	(3.3)	(4.1)	(5.5)	12.7
Renewable							
Wacker	EUR	135.3	2.2	3.3	(4.8)	(15.5)	35.9
First Solar	USD	73.87	1.2	6.3	10.7	6.9	154.4
GCL-Poly	HKD	1.05	(0.9)	(12.5)	(18.6)	(22.2)	(0.9)
Tesla Motors	USD	316.5	1.9	(3.1)	(5.0)	(4.6)	26.3

4. Coverage Summary

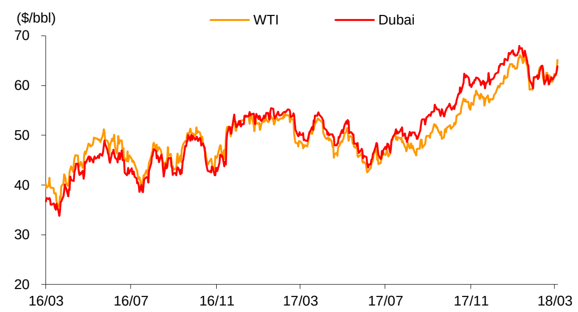
	03/21	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,485	(0.0)	(0.0)	1.7	2.3	2.9	15.2				* 추정치는 12M fwd 기준임	
KOSPI화학	6,068	(0.1)	(1.1)	0.5	1.6	5.5	20.1				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	410,000	0.9	(0.4)	6.9	4.9	3.3	44.9	매수	450,000	9.8	13.69	1.93
롯데케미칼	435,500	(0.1)	(1.6)	(3.1)	19.5	11.8	18.3	매수	410,000	(5.9)	11.89	1.30
한화케미칼	29,350	(2.3)	(5.3)	(12.5)	(2.7)	(22.8)	17.9	매수	39,000	32.9	11.20	0.76
금호석유화학	97,800	6.4	4.8	2.9	0.6	25.2	26.0	매수	150,000	53.4	11.93	1.57
KCC	348,500	0.4	(0.7)	(4.7)	(7.1)	(10.3)	(1.0)	매수	450,000	29.1	12.91	0.52
OCI	143,000	(0.7)	(3.1)	(10.6)	10.0	28.8	67.8	매수	180,000	25.9	13.44	1.00
SKC	39,050	0.4	(3.0)	3.2	(9.4)	(9.8)	28.7	매수	55,000	40.8	9.82	0.96
SK이노베이션	212,000	0.2	1.0	7.9	4.7	11.9	30.9	매수	230,000	8.5	11.23	1.07
S-Oil	117,500	0.4	(4.5)	(2.1)	(5.2)	(2.5)	21.6	매수	140,000	19.1	13.44	2.13
GS	63,500	(0.2)	(0.8)	(0.8)	2.8	(2.9)	13.6	매수	80,000	26.0	6.20	0.82
SK가스	92,100	(1.4)	(4.0)	0.1	(0.9)	(12.3)	(22.3)	매수	130,000	41.2	7.98	0.62
포스코대우	21,250	2.7	6.5	(0.7)	18.7	(0.5)	(9.4)	매수	25,000	17.6	9.69	0.86
LG상사	27,000	(0.2)	1.5	(3.1)	0.4	(9.5)	(10.0)	매수	38,000	40.7	9.10	0.77
한국전력	31,650	0.0	(3.2)	(4.4)	(18.2)	(21.2)	(30.6)	매수	50,000	58.0	6.80	0.25
한국가스공사	46,400	0.4	(0.5)	(1.4)	8.0	5.8	(1.2)	매수	60,000	29.3	8.76	0.69

Key Chart

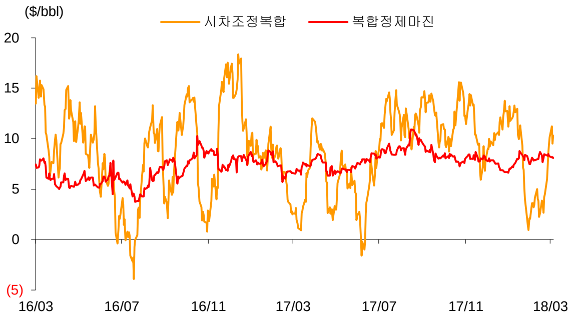
KOSPI/KOSPI화학



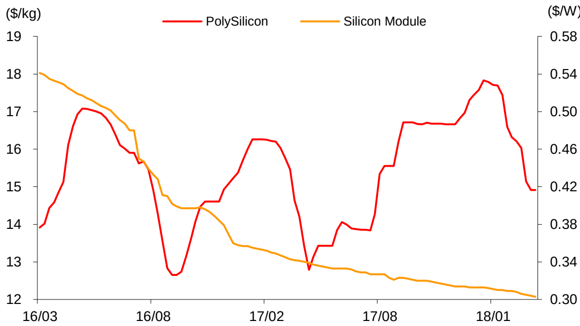
WTI/Dubai



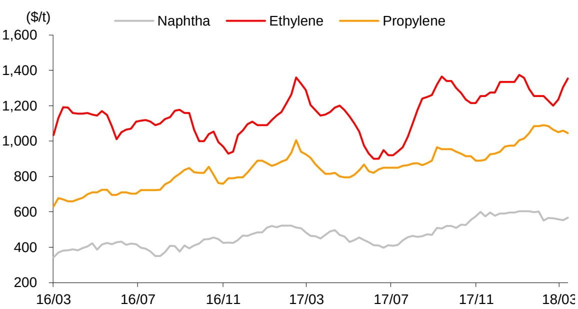
Complex & 1M lagging margin



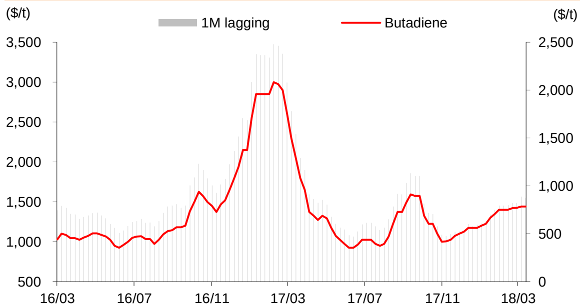
Polysilicon & Module prices



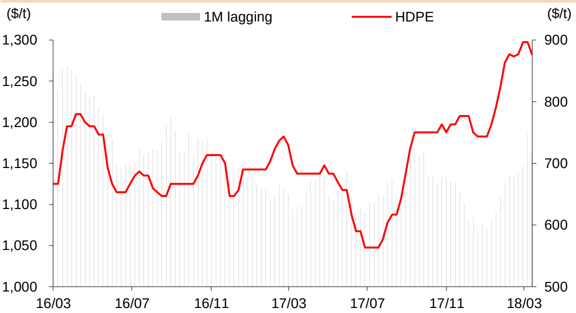
Naphtha/Ethylene/Propylene prices



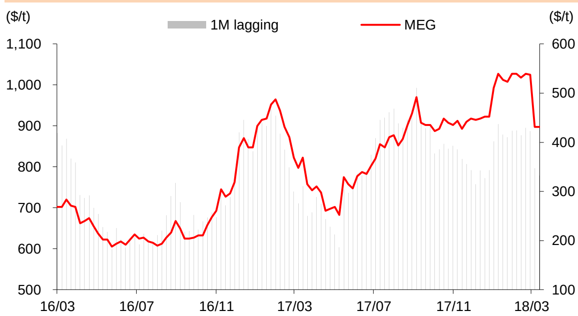
Butadiene price & 1M lagging naphtha spread



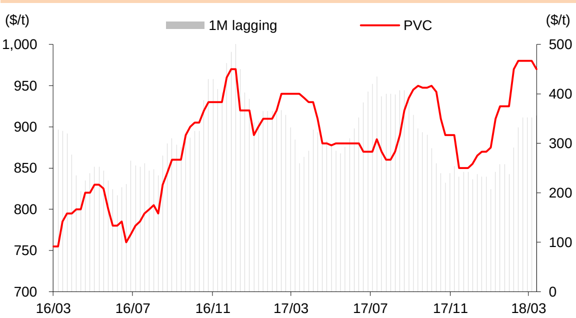
HDPE price & 1M lagging naphtha spread



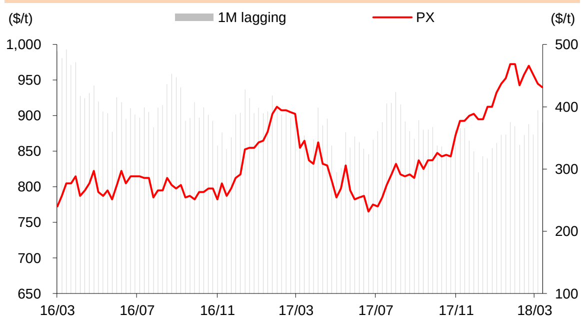
MEG price & 1M lagging naphtha spread



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

에너지/Commodity/정유화학. 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

News Comment

Headline	(출처: OilPrice)
제목	가스프롬의 Power of Siberia I 건설이 75.5% 완료됨
결론	Power of Siberia I 가동 개시 전까지 스팟성 LNG 수입으로 수요 충당
세부	
1)	현재 1,629km의 파이프라인이 설치되었고 이는 진행률 기준 75.5%임
2)	가스프롬은 CNPC와 30년간 1.3tcf의 천연가스 공급 계약을 맺었음
3)	가스프롬과 CNPC는 서쪽 국경에 Power of Siberia II 설치도 논의중
4)	중국에서 천연가스 수요 증가가 가팔라 2017년에는 LNG 수입이 폭증함
5)	Power of Siberia I 가동 개시 전까지 스팟성 LNG 수입으로 수요 충당

WTI Comment	(출처: 연합뉴스)
제목	미 재고 감소에 강세…WTI 2.6%↑
상승 요인	EIA가 미국 원유재고가 260만b 감소했다고 밝힘
하락 요인	

Issue 1	(출처: China Economic Review)
제목	러시아와 중국이 새로운 Siberian 석유화학 플랜트 건설로 관계 증진
결론	중국이 가스 사용량을 늘리며 ECC 증설도 지속적으로 증가할 전망
세부	
1)	러시아 최대 석유화학사인 Sibur가 중국으로의 에너지 공급 계획 세움
2)	공장 이름은 Amur Complex로, 동시베리아에 $6bil ~ $7bil가 투자될 것
3)	2020년에 건설 시작해 2024년 완공 예정이며 150만톤의 PE capa 보유
4)	현재 건설중인 Power of Siberia I에서 원료를 공급받아 제품 생산 예정
5)	중국이 가스 사용량을 늘리며 ECC 증설도 지속적으로 증가할 전망

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)	
2)	
3)	
4)	
5)	

에너지/Commodity/정유화학. 손지우 | 3773-8827, jwshon@sk.com
R.A. 유승우 | 3773-9180, yswbest@sk.com

SK 증권

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	**USD/EUR**	0.811	0.817	0.809	0.814	0.842	0.837	0.925	0.833	0.904	0.887	0.814
	Change, %		(0.8)	0.2	(0.4)	(3.8)	(3.2)	(12.4)	(2.7)	(10.3)	(8.6)	(0.4)
	USD/JPY	106.1	106.5	106.3	107.8	113.3	112.5	111.7	112.6	108.8	112.1	108.6
	Change, %		(0.5)	(0.3)	(1.6)	(6.4)	(5.7)	(5.1)	(5.8)	(2.5)	(5.4)	(2.4)
	USD/KRW	1,072.3	1,068.7	1,064.7	1,076.2	1,082.6	1,132.8	1,120.2	1,066.7	1,160.5	1,130.9	1,072.1
	Change, %		0.3	0.7	(0.4)	(1.0)	(5.3)	(4.3)	0.5	(7.6)	(5.2)	0.0
Agriculture	**Corn**	375.0	374.5	383.5	365.8	351.3	350.3	361.3	350.8	358.5	359.4	364.5
	Change, %		0.1	(2.2)	2.5	6.8	7.1	3.8	6.9	4.6	4.4	2.9
	Soybean	1,029.8	1,028.3	1,028.5	1,034.3	948.8	970.8	1,001.5	951.8	987.5	975.9	1,003.1
	Change, %		0.1	0.1	(0.4)	8.5	6.1	2.8	8.2	4.3	5.5	2.7
	Wheat	453.5	453.0	495.8	447.3	427.0	452.5	426.5	427.0	436.4	436.0	453.0
	Change, %		0.1	(8.5)	1.4	6.2	0.2	6.3	6.2	3.9	4.0	0.1
	Rice	12.3	12.2	12.1	12.0	12.0	12.7	9.8	11.7	10.3	11.1	12.1
	Change, %		0.9	1.8	3.0	2.7	(3.1)	26.0	5.4	19.1	11.3	1.6
	Oats	231.5	235.5	253.3	258.3	244.0	250.0	253.8	241.0	196.3	252.3	258.7
	Change, %		(1.7)	(8.6)	(10.4)	(5.1)	(7.4)	(8.8)	(3.9)	17.9	(8.2)	(10.5)
MYR/mt	**Palm Oil**	2,459.0	2,450.0	2,441.0	2,510.0	2,411.0	2,748.0	2,968.0	2,444.0	2,653.8	2,787.3	2,490.1
	Change, %		0.4	0.7	(2.0)	2.0	(10.5)	(17.1)	0.6	(7.3)	(11.8)	(1.3)
	Cocoa	2,524.0	2,480.0	2,575.0	2,172.0	1,907.0	2,021.0	2,154.0	1,892.0	2,854.0	2,005.2	2,138.7
	Change, %		1.8	(2.0)	16.2	32.4	24.9	17.2	33.4	(11.6)	25.9	18.0
	Cotton	82.6	83.1	83.4	78.9	77.9	69.0	76.8	78.6	65.6	73.5	80.3
	Change, %		(0.6)	(1.0)	4.7	6.0	19.6	7.5	5.0	25.9	12.3	2.8
	Sugar	12.7	12.6	12.8	13.4	14.8	14.1	17.3	15.2	18.2	15.8	13.6
	Change, %		0.9	(0.7)	(5.3)	(14.2)	(9.8)	(26.7)	(16.4)	(30.2)	(19.9)	(6.7)
	Coffee	118.9	119.0	120.0	117.0	122.3	135.0	143.5	126.2	136.1	133.0	121.5
	Change, %		(0.1)	(0.9)	1.6	(2.8)	(12.0)	(17.2)	(5.8)	(12.6)	(10.6)	(2.2)
Energy	**WTI**	65.2	63.4	61.0	61.7	58.4	50.6	47.3	60.4	43.4	51.0	62.7
	Change, %		2.8	6.9	5.7	11.7	28.9	37.7	7.9	50.2	27.9	3.9
	Brent	69.5	67.4	64.9	65.4	64.9	56.4	51.0	66.9	45.1	54.9	67.0
	Change, %		3.0	7.1	6.2	7.0	23.1	36.3	3.9	54.1	26.7	3.7
	Natural Gas	2.6	2.7	2.7	2.7	2.6	2.9	3.1	3.0	2.6	3.0	2.9
	Change, %		(1.4)	(3.4)	(0.8)	1.5	(10.5)	(14.7)	(10.7)	3.4	(12.7)	(7.9)
	Ethanol	1.5	1.5	1.5	1.5	1.3	1.5	1.5	1.3	1.5	1.5	1.4
	Change, %		0.6	(3.7)	(0.4)	13.6	(2.6)	(3.4)	11.4	(2.9)	(1.7)	3.5
	RBOB Gasoline	201.2	196.6	192.4	175.7	174.8	164.4	160.5	179.9	140.0	162.9	184.7
	Change, %		2.4	4.6	14.5	15.1	22.4	25.4	11.8	43.8	23.5	8.9
	Coal	97.2	97.4	97.7	105.6	100.2	97.3	80.6	100.8	65.5	88.2	103.5
	Change, %		(0.2)	(0.6)	(8.0)	(3.0)	(0.2)	20.6	(3.6)	48.4	10.1	(6.1)
Metal	**Gold**	1,332.5	1,311.3	1,324.7	1,324.5	1,266.5	1,291.2	1,244.6	1,302.6	1,248.5	1,258.6	1,329.0
	Change, %		1.6	0.6	0.6	5.2	3.2	7.1	2.3	6.7	5.9	0.3
	Silver	16.6	16.2	16.5	16.5	16.1	17.0	17.5	16.9	17.1	17.1	16.8
	Change, %		2.3	0.2	0.3	2.7	(2.3)	(5.5)	(2.2)	(3.1)	(2.9)	(1.3)
	Copper	6,793.0	6,755.0	6,988.5	7,119.0	7,086.0	6,456.0	5,776.0	7,247.0	4,872.0	6,199.4	7,028.7
	Change, %		0.6	(2.8)	(4.6)	(4.1)	5.2	17.6	(6.3)	39.4	9.6	(3.4)
	Nickel	876.9	876.0	894.1	893.8	770.3	694.4	663.6	809.1	646.4	680.2	855.8
	Change, %		0.1	(1.9)	(1.9)	13.8	26.3	32.1	8.4	35.7	28.9	2.5
	Zinc	3,249.0	3,203.0	3,226.5	3,541.0	3,242.0	3,100.5	2,829.0	3,319.0	2,097.5	2,888.5	3,402.6
	Change, %		1.4	0.7	(8.2)	0.2	4.8	14.8	(2.1)	54.9	12.5	(4.5)
	Lead	2,402.0	2,353.0	2,408.8	2,551.0	2,499.8	2,517.5	2,269.8	2,482.8	1,868.3	2,315.7	2,531.8
	Change, %		2.1	(0.3)	(5.8)	(3.9)	(4.6)	5.8	(3.3)	28.6	3.7	(5.1)
	Aluminum	13,825.0	13,905.0	13,765.0	14,215.0	14,565.0	16,835.0	13,700.0	15,020.0	12,373.5	14,556.6	14,364.9
	Change, %		(0.6)	0.4	(2.7)	(5.1)	(17.9)	0.9	(8.0)	11.7	(5.0)	(3.8)
	Cobalt	94,800.0	89,608.0	85,500.0	79,503.0	75,205.0	59,340.0	52,750.0	75,205.0	25,480.1	55,906.9	80,649.8
	Change, %		5.8	10.9	19.2	26.1	59.8	79.7	26.1	272.1	69.6	17.5
	HR Coil	825.0	822.0	817.0	746.0	633.0	620.0	625.0	662.0	519.3	620.1	738.3
	Change, %		0.4	1.0	10.6	30.3	33.1	32.0	24.6	58.9	33.1	11.7
	Scrap	410.0	410.0	425.0	385.0	365.0	347.0	335.0	367.0	275.7	344.7	383.9
	Change, %		0.0	(3.5)	6.5	12.3	18.2	22.4	11.7	48.7	18.9	6.8

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

에너지/Commodity/정유화학, 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com
SK 증권

Refining Price Data

Daily Price		03/21	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	65.2	63.4	61.0	61.9	58.1	50.4	48.0	53.7	43.4	50.9	62.7
	Change, %		*2.8*	*6.9*	*5.3*	*12.2*	*29.3*	*35.7*	*21.3*	*50.3*	*28.0*	*4.0*
	Dubai	63.9	63.0	61.2	62.1	61.6	53.9	49.0	53.8	41.3	53.1	63.8
	Change, %		*1.4*	*4.3*	*3.0*	*3.7*	*18.5*	*30.3*	*18.7*	*54.7*	*20.3*	*0.2*
Crude Oil Product	**Gasoline(휘발유)**	78.4	77.2	74.8	76.1	75.0	69.9	62.9	69.8	56.3	68.0	77.3
	Change, %		*1.7*	*4.9*	*3.1*	*4.6*	*12.3*	*24.6*	*12.3*	*39.4*	*15.3*	*1.5*
	Kerosene(등유)	79.2	78.3	76.7	78.5	75.7	68.1	59.8	66.4	52.9	65.2	79.8
	Change, %		*1.2*	*3.3*	*1.0*	*4.7*	*16.4*	*32.6*	*19.3*	*49.8*	*21.5*	*(0.7)*
	Diesel(경유)	78.9	78.1	76.9	76.5	75.8	68.3	60.6	65.5	52.1	65.6	78.4
	Change, %		*1.1*	*2.7*	*3.2*	*4.1*	*15.5*	*30.3*	*20.5*	*51.5*	*20.3*	*0.7*
	Bunker-C	57.3	57.0	56.2	56.8	56.7	51.3	44.3	52.1	35.5	49.7	57.5
	Change, %		*0.4*	*1.9*	*0.9*	*1.0*	*11.6*	*29.4*	*10.0*	*61.2*	*15.3*	*(0.4)*
	Naphtha	63.6	63.0	61.4	60.7	64.4	54.7	49.0	53.5	42.6	53.7	63.2
	Change, %		*1.1*	*3.6*	*4.8*	*(1.2)*	*16.4*	*30.0*	*19.0*	*49.4*	*18.4*	*0.6*
Dubai Spread	**Gasoline(휘발유)**	14.6	14.2	13.6	14.0	13.4	15.9	13.9	16.0	14.9	14.9	13.5
	Change		*0.4*	*1.0*	*0.5*	*1.2*	*(1.4)*	*0.6*	*(1.5)*	*(0.4)*	*(0.4)*	*1.0*
	Kerosene(등유)	15.4	15.3	15.5	16.4	14.1	14.2	10.8	12.6	11.6	12.1	16.0
	Change		*0.0*	*(0.1)*	*(1.1)*	*1.2*	*1.2*	*4.6*	*2.7*	*3.8*	*3.2*	*(0.7)*
	Diesel(경유)	15.1	15.1	15.7	14.4	14.2	14.4	11.6	11.7	10.8	12.5	14.7
	Change		*(0.1)*	*(0.6)*	*0.6*	*0.8*	*0.7*	*3.5*	*3.4*	*4.2*	*2.5*	*0.4*
	Bunker-C	(6.6)	(6.0)	(5.0)	(5.3)	(4.9)	(2.6)	(4.8)	(1.8)	(5.8)	(3.4)	(6.2)
	Change		*(0.7)*	*(1.6)*	*(1.3)*	*(1.7)*	*(4.0)*	*(1.8)*	*(4.9)*	*(0.8)*	*(3.2)*	*(0.4)*
	Naphtha	(0.3)	(0.0)	0.2	(1.4)	2.8	0.7	(0.1)	(0.4)	1.3	0.6	(0.5)
	Change		*(0.2)*	*(0.4)*	*1.1*	*(3.1)*	*(1.0)*	*(0.2)*	*0.1*	*(1.6)*	*(0.9)*	*0.2*
Refining Margin	**Simple(단순)**	2.3	2.6	3.1	2.7	2.8	4.3	2.1	3.8	1.9	3.2	2.3
	Change		*(0.3)*	*(0.9)*	*(0.5)*	*(0.6)*	*(2.0)*	*0.1*	*(1.6)*	*0.3*	*(0.9)*	*(0.0)*
	Complex(복합)	8.1	8.2	8.5	8.0	8.1	9.2	7.0	8.3	7.0	8.0	7.8
	Change		*(0.1)*	*(0.4)*	*0.1*	*0.0*	*(1.1)*	*1.1*	*(0.2)*	*1.1*	*0.1*	*0.3*
	Complex(lagging)	10.3	9.5	8.6	3.6	10.0	13.9	1.9	18.0	8.5	8.9	8.0
	Change		*0.8*	*1.7*	*6.7*	*0.3*	*(3.6)*	*8.4*	*(7.7)*	*1.8*	*1.4*	*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

에너지/Commodity/정유화학, 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

SK증권

Petrochemical Price Data

Daily Price			03/21	03/20	03/19	03/16	03/15	03/14	03/13	03/12	03/09	03/08
Spot Price	**Naphtha**	CFR Japan	582.9	578.5	575.5	572.0	570.0	566.0	558.0	564.5	553.5	562.8
	Ethylene	CFR SE Asia	1,280.0	1,280.0	1,280.0	1,280.0	1,250.0	1,250.0	1,250.0	1,230.0	1,230.0	1,230.0
	Propylene	FOB Korea	1,020.0	1,020.0	1,025.0	1,025.0	1,010.0	1,010.0	1,015.0	1,015.0	1,025.0	1,030.0
	Butadiene	FOB Korea	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,430.0	1,390.0	1,390.0	1,390.0
	HDPE	CFR FE Asia	1,320.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0
	LDPE	CFR FE Asia	1,215.0	1,220.0	1,225.0	1,225.0	1,225.0	1,225.0	1,225.0	1,225.0	1,230.0	1,230.0
	LLDPE	CFR FE Asia	1,190.0	1,200.0	1,205.0	1,205.0	1,205.0	1,205.0	1,205.0	1,205.0	1,210.0	1,210.0
	MEG	CFR China	899.0	908.0	911.0	865.0	880.0	917.0	910.0	895.0	895.0	935.0
	PP	CFR FE Asia	1,190.0	1,200.0	1,220.0	1,200.0	1,200.0	1,200.0	1,225.0	1,225.0	1,225.0	1,230.0
	PX	CFR China	932.0	931.0	933.0	929.0	932.0	932.5	935.5	935.3	934.3	942.0
	PTA	CFR China	769.0	769.0	770.0	770.0	775.0	775.0	780.0	785.0	785.0	793.0
	Benzene	FOB Korea	841.3	850.3	858.3	835.3	842.7	861.7	864.0	875.0	859.0	857.7
	Toluene	FOB Korea	678.0	677.0	677.0	677.0	677.0	677.0	682.0	686.0	685.0	685.0
	Xylene	FOB Korea	737.0	738.0	738.0	744.0	746.0	749.0	745.0	745.0	748.0	749.0
	SM	FOB Korea	1,231.0	1,251.0	1,276.0	1,259.0	1,284.0	1,326.0	1,326.0	1,326.0	1,326.0	1,311.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	568.0	553.0	565.0	590.5	574.5	462.5	484.5	399.5	493.5	579.0
	Change, %			*2.7*	*0.5*	*(3.8)*	*(1.1)*	*22.8*	*17.2*	*42.2*	*15.1*	*(1.9)*
	Ethylene	CFR SE Asia	1,250.0	1,220.0	1,172.5	1,245.0	1,165.0	1,075.0	990.0	1,040.9	1,090.9	1,239.8
	Change, %			*2.5*	*6.6*	*0.4*	*7.3*	*16.3*	*26.3*	*20.1*	*14.6*	*0.8*
	Propylene	CFR SE Asia	980.0	995.0	1,015.0	890.0	810.0	865.0	815.0	705.7	823.6	1,057.3
	Change, %			*(1.5)*	*(3.4)*	*10.1*	*21.0*	*13.3*	*20.2*	*38.9*	*19.0*	*(7.3)*
	Butadiene	CFR SE Asia	1,390.0	1,390.0	1,350.0	1,125.0	965.0	2,000.0	2,100.0	1,116.8	1,481.1	1,313.6
	Change, %			*0.0*	*3.0*	*23.6*	*44.0*	*(30.5)*	*(33.8)*	*24.5*	*(6.1)*	*5.8*
	Benzene	CFR SE Asia	867.5	882.5	895.0	920.0	860.0	830.0	822.5	646.7	838.8	913.6
	Change, %			*(1.7)*	*(3.1)*	*(5.7)*	*0.9*	*4.5*	*5.5*	*34.1*	*3.4*	*(5.0)*
	Toluene	CFR SE Asia	720.0	720.0	750.0	735.0	715.0	690.0	690.0	630.5	689.5	746.8
	Change, %			*0.0*	*(4.0)*	*(2.0)*	*0.7*	*4.3*	*4.3*	*14.2*	*4.4*	*(3.6)*
	Xylene	CFR SE Asia	762.5	765.0	757.5	710.0	670.0	720.0	675.0	627.7	668.8	754.3
	Change, %			*(0.3)*	*0.7*	*7.4*	*13.8*	*5.9*	*13.0*	*21.5*	*14.0*	*1.1*
Spread	**Ethylene**	-Naphtha	682.0	667.0	607.5	654.5	590.5	612.5	505.5	641.4	597.4	660.8
	Change, %			*2.2*	*12.3*	*4.2*	*15.5*	*11.3*	*34.9*	*6.3*	*14.2*	*3.2*
	Propylene	-Naphtha	412.0	442.0	450.0	299.5	235.5	402.5	330.5	306.2	330.1	478.3
	Change, %			*(6.8)*	*(8.4)*	*37.6*	*74.9*	*2.4*	*24.7*	*34.6*	*24.8*	*(13.9)*
	Butadiene	-Naphtha	822.0	837.0	785.0	534.5	390.5	1,537.5	1,615.5	717.3	987.6	734.7
	Change, %			*(1.8)*	*4.7*	*53.8*	*110.5*	*(46.5)*	*(49.1)*	*14.6*	*(16.8)*	*11.9*
	Benzene	-Naphtha	299.5	329.5	330.0	329.5	285.5	367.5	338.0	247.2	345.3	334.7
	Change, %			*(9.1)*	*(9.2)*	*(9.1)*	*4.9*	*(18.5)*	*(11.4)*	*21.2*	*(13.3)*	*(10.5)*
	Toluene	-Naphtha	152.0	167.0	185.0	144.5	140.5	227.5	205.5	231.0	196.0	167.9
	Change, %			*(9.0)*	*(17.8)*	*5.2*	*8.2*	*(33.2)*	*(26.0)*	*(34.2)*	*(22.4)*	*(9.5)*
	Xylene	-Naphtha	194.5	212.0	192.5	119.5	95.5	257.5	190.5	228.2	175.3	175.4
	Change, %			*(8.3)*	*1.0*	*62.8*	*103.7*	*(24.5)*	*2.1*	*(14.8)*	*10.9*	*10.9*

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

SK Energy Daily

에너지/Commodity/정유화학. 손지우 | 3773-8827, jwshon@sk.com
R.A. 유승우 | 3773-9180, yswbest@sk.com

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**HDPE**	CFR SE Asia	1,282.5	1,297.5	1,280.0	1,187.5	1,197.5	1,137.5	1,142.5	1,134.6	1,142.5	1,257.7
	Change, %			(1.2)	0.2	8.0	7.1	12.7	12.3	13.0	12.3	2.0
	MEG	CFR SE Asia	897.5	897.5	1,017.5	917.5	892.5	822.5	847.5	660.8	850.6	996.4
	Change, %			0.0	(11.8)	(2.2)	0.6	9.1	5.9	35.8	5.5	(9.9)
	PVC	CFR SE Asia	970.0	980.0	980.0	865.0	850.0	940.0	920.0	823.4	899.9	947.3
	Change, %			(1.0)	(1.0)	12.1	14.1	3.2	5.4	17.8	7.8	2.4
	PP	CFR SE Asia	1,297.5	1,307.5	1,275.0	1,157.5	1,147.5	1,107.5	1,032.5	978.4	1,099.6	1,257.4
	Change, %			(0.8)	1.8	12.1	13.1	17.2	25.7	32.6	18.0	3.2
	2-EH	CFR Korea	1,130.0	1,125.0	1,080.0	1,035.0	990.0	1,005.0	865.0	772.4	970.0	1,082.7
	Change, %			0.4	4.6	9.2	14.1	12.4	30.6	46.3	16.5	4.4
	ABS	CFR SE Asia	2,020.0	2,070.0	2,060.0	2,070.0	1,930.0	1,800.0	1,635.0	1,347.1	1,844.7	2,049.1
	Change, %			(2.4)	(1.9)	(2.4)	4.7	12.2	23.5	49.9	9.5	(1.4)
	SBR	CFR SE Asia	1,750.0	1,750.0	1,755.0	1,650.0	1,590.0	2,745.0	2,000.0	1,483.0	1,980.5	1,729.1
	Change, %			0.0	(0.3)	6.1	10.1	(36.2)	(12.5)	18.0	(11.6)	1.2
	SM	CFR SE Asia	1,337.5	1,397.5	1,437.5	1,332.5	1,280.0	1,290.0	1,205.0	1,064.6	1,253.8	1,404.1
	Change, %			(4.3)	(7.0)	0.4	4.5	3.7	11.0	25.6	6.7	(4.7)
	Caustic	FOB NEA	601.0	590.0	549.0	621.0	700.0	446.0	422.5	316.6	491.2	579.4
	Change, %			1.9	9.5	(3.2)	(14.1)	34.8	42.2	89.8	22.4	3.7
	PX	CFR SE Asia	940.0	945.0	957.5	895.0	892.5	865.0	855.0	790.4	844.4	953.4
	Change, %			(0.5)	(1.8)	5.0	5.3	8.7	9.9	18.9	11.3	(1.4)
	PO	CFR China	1,875.0	1,962.5	1,907.5	1,872.5	1,782.5	1,432.5	1,562.5	1,396.8	1,601.2	1,941.6
	Change, %			(4.5)	(1.7)	0.1	5.2	30.9	20.0	34.2	17.1	(3.4)
	Caprolactam	CFR SE Asia	2,180.0	2,150.0	2,060.0	2,060.0	2,040.0	2,300.0	1,850.0	1,344.9	1,936.4	2,073.6
	Change, %			1.4	5.8	5.8	6.9	(5.2)	17.8	62.1	12.6	5.1
	PTA	CFR SE Asia	790.0	810.0	777.5	727.5	707.5	667.5	642.5	613.7	667.8	772.7
	Change, %			(2.5)	1.6	8.6	11.7	18.4	23.0	28.7	18.3	2.2
Spread	**HDPE**		714.5	744.5	715.0	597.0	623.0	675.0	658.0	735.1	649.0	678.8
	Change, %			(4.0)	(0.1)	19.7	14.7	5.9	8.6	(2.8)	10.1	5.3
	MEG		329.5	344.5	452.5	327.0	318.0	360.0	363.0	261.3	357.1	417.4
	Change, %			(4.4)	(27.2)	0.8	3.6	(8.5)	(9.2)	26.1	(7.7)	(21.1)
	PVC		402.0	427.0	415.0	274.5	275.5	477.5	435.5	423.9	406.4	368.3
	Change, %			(5.9)	(3.1)	46.4	45.9	(15.8)	(7.7)	(5.2)	(1.1)	9.1
	PP		729.5	754.5	710.0	567.0	573.0	645.0	548.0	578.9	606.1	678.4
	Change, %			(3.3)	2.7	28.7	27.3	13.1	33.1	26.0	20.4	7.5
	2-EH		562.0	572.0	515.0	444.5	415.5	542.5	380.5	372.9	476.5	503.8
	Change, %			(1.7)	9.1	26.4	35.3	3.6	47.7	50.7	17.9	11.6
	ABS		1,452.0	1,517.0	1,495.0	1,479.5	1,355.5	1,337.5	1,150.5	947.6	1,351.2	1,470.1
	Change, %			(4.3)	(2.9)	(1.9)	7.1	8.6	26.2	53.2	7.5	(1.2)
	SBR	BD spread	360.0	360.0	405.0	525.0	625.0	745.0	(100.0)	366.2	499.4	415.5
	Change, %			0.0	(11.1)	(31.4)	(42.4)	(51.7)	(460.0)	(1.7)	(27.9)	(13.3)
	SM		769.5	844.5	872.5	742.0	705.5	827.5	720.5	665.1	760.3	825.1
	Change, %			(8.9)	(11.8)	3.7	9.1	(7.0)	6.8	15.7	1.2	(6.7)
	Caustic											
	Change, %											
	PX		372.0	392.0	392.5	304.5	318.0	402.5	370.5	390.9	351.0	374.5
	Change, %			(5.1)	(5.2)	22.2	17.0	(7.6)	0.4	(4.8)	6.0	(0.7)
	PO	propylene sprea	895.0	967.5	892.5	982.5	972.5	567.5	747.5	691.1	777.6	884.3
	Change, %			(7.5)	0.3	(8.9)	(8.0)	57.7	19.7	29.5	15.1	1.2
	Caprolactam	benzene spreac	1,312.5	1,267.5	1,165.0	1,140.0	1,180.0	1,470.0	1,027.5	698.2	1,097.6	1,160.0
	Change, %			3.6	12.7	15.1	11.2	(10.7)	27.7	88.0	19.6	13.1
	PTA	px spread	132.0	148.5	107.3	101.0	82.8	62.0	44.0	60.4	76.7	105.3
	Change, %			(11.1)	23.1	30.7	59.5	112.9	200.0	118.5	72.1	25.3

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

에너지/Commodity/정유화학. 손지우 I 3773-8827, jwshon@sk.com
R.A. 유승우 I 3773-9180, yswbest@sk.com

Global peers

	Currency	03/21	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	67.4	1.6	(2.3)	(5.0)	(5.9)	(4.1)	6.9	(5.3)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	107.5	1.3	(0.0)	6.3	15.7	25.3	38.7	16.0	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	84.3	(0.3)	1.1	(3.3)	(9.6)	(4.6)	(4.5)	(8.1)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	79.7	(0.3)	(0.8)	0.1	8.6	1.6	4.0	9.1	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	109.6	0.5	2.0	6.1	7.5	8.1	20.1	7.9	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	65.4	0.5	(2.7)	(3.8)	0.8	(1.1)	6.4	(1.3)	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	614	0.0	(1.4)	(8.8)	(25.5)	(13.2)	(6.4)	(24.2)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	1,017	0.0	(3.6)	(7.9)	(18.9)	(4.1)	15.2	(17.8)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,925	0.0	(3.3)	(4.1)	(5.5)	7.7	12.7	(4.6)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,403	0.0	(0.2)	3.8	(3.9)	1.2	26.8	(3.5)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	2,420	0.0	(3.2)	0.8	8.3	12.8	23.6	9.1	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,088	0.0	(6.0)	(4.9)	(22.5)	(16.4)	(7.4)	(19.2)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	110.2	0.6	0.2	5.1	8.3	9.3	14.5	8.7	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	69.7	1.8	(1.5)	5.3	19.7	17.8	23.9	18.1	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	106.5	1.4	4.4	2.4	12.2	13.5	14.5	7.9	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	111.0	0.5	3.3	1.4	13.6	18.7	16.2	7.8	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	82.5	0.0	2.5	4.4	8.7	7.8	14.6	5.9	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	6.09	0.0	1.7	5.2	(3.6)	(3.8)	(6.6)	(3.8)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	2.31	(0.4)	0.0	1.8	(13.8)	(31.5)	(39.1)	(13.5)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	897	0.8	(3.5)	(3.5)	(1.8)	6.6	41.9	(1.4)	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	107.0	(0.7)	0.9	(1.6)	8.2	18.9	(6.1)	10.3	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	96.8	(1.5)	1.3	3.8	15.5	22.9	33.9	13.8	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.3	1.2	2.3	1.8	9.1	13.6	9.4	7.7	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	410,000	0.9	(0.4)	9.5	4.9	5.4	39.0	1.2	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	435,500	(0.1)	(1.6)	(1.5)	19.5	13.0	17.2	18.3	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	29,350	(2.3)	(5.3)	(12.4)	(2.7)	(20.5)	16.0	(7.1)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	97,800	6.4	4.8	7.2	0.6	28.0	29.4	(1.7)	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	39,050	0.4	(3.0)	4.0	(9.4)	(6.7)	28.0	(16.9)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	62,300	0.2	2.3	3.8	(3.4)	16.2	29.0	(1.3)	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	10,000	0.1	4.1	7.8	35.3	49.0	18.9	31.9	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**0.4**	**(0.3)**	**0.8**	**2.3**	**6.4**	**14.4**	**1.5**							
Refinery																
Valero	USD	95.5	1.0	3.0	5.1	5.2	30.1	42.1	3.9	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	57.0	4.3	5.7	6.1	1.9	17.1	26.3	3.9	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	106.0	(8.2)	(9.8)	(8.2)	(7.0)	1.0	(1.9)	(8.2)	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	102.4	1.9	3.0	10.6	(7.8)	(1.4)	24.9	(10.4)	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	73.2	2.4	5.6	10.5	10.4	34.7	48.6	11.0	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	32.9	4.3	0.9	7.7	(19.6)	(6.9)	(17.3)	(20.5)	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	49.0	2.1	6.0	10.4	(2.2)	44.7	78.2	(4.3)	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	96.2	1.1	2.1	7.3	(3.9)	7.9	22.3	(4.9)	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	26.7	5.8	3.8	5.9	(12.8)	1.4	0.7	(14.1)	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	635.2	0.0	0.4	(3.4)	(10.8)	10.4	17.9	(12.6)	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	3,940.0	0.0	(3.9)	(1.7)	(11.1)	30.9	2.2	(12.9)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	57.9	0.9	(0.6)	(3.1)	7.1	57.3	63.8	8.5	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	70.1	(2.4)	(1.5)	(0.8)	(1.8)	9.1	18.5	(1.6)	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	47.3	(1.7)	(0.7)	3.8	5.8	(3.8)	10.5	6.9	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	212,000	0.2	1.0	8.4	4.7	12.2	26.2	3.7	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	117,500	0.4	(4.5)	(1.7)	(5.2)	(3.7)	18.3	0.4	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	63,500	(0.2)	(0.8)	(0.2)	2.8	(4.4)	11.8	2.1	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.7**	**0.6**	**3.3**	**(2.6)**	**13.9**	**23.1**	**(2.9)**							

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

SK Energy Daily

에너지/Commodity/정유화학. 손지우 | 3773-8827, jwshon@sk.com
R.A. 유승우 | 3773-9180, yswbest@sk.com

Global peers

	Currency	03/21	1D	1W	1M	3M	6M	12M	YTD	MKT CAP	PER		PBR		EV/EBITDA	
										(mil USD)	18E	19E	18E	19E	18E	19E
E&P/Shale																
Exxon Mobil	USD	75	1.4	2.0	0.2	(10.5)	(6.1)	(8.3)	(10.3)	317,979	16.1	16.0	1.7	1.6	7.4	7.1
BP	GBP	473	1.9	1.7	0.1	(9.0)	2.0	3.1	(9.6)	132,555	14.7	13.9	1.4	1.3	5.3	5.0
Shell	EUR	2,217	0.8	0.2	(1.8)	(9.7)	2.4	4.9	(10.6)	262,653	13.2	12.3	1.3	1.3	5.8	5.6
Chevron	USD	117	2.2	1.7	7.3	(6.2)	0.5	8.3	(6.5)	223,576	18.9	18.6	1.5	1.5	6.6	6.4
Total	EUR	47	0.7	(1.0)	(0.6)	(0.1)	1.5	0.5	1.1	150,562	12.1	11.8	1.3	1.2	5.3	5.0
Sinopec	CNY	7	0.3	6.7	8.6	14.7	17.3	20.8	11.7	125,430	12.9	12.3	1.1	1.0	4.6	4.6
Petrochina	CNY	8	(0.5)	0.5	0.1	0.6	0.8	0.0	(0.7)	220,326	28.0	18.1	1.2	1.1	6.0	5.6
CNOOC	CNY	11	(1.4)	(3.7)	4.0	6.9	(4.2)	(15.1)	3.5	66,238	9.2	9.1	1.0	0.9	3.7	3.6
Gazprom	RUB	142	(0.7)	2.0	(1.7)	7.4	15.7	9.4	8.4	58,493	3.8	3.9	0.3	0.2	3.6	3.5
Rosneft	RUB	318	(0.0)	2.3	(4.8)	8.1	0.3	0.5	8.9	58,753	7.6	6.6	0.8	0.8	4.8	4.4
Anadarko	USD	62	5.2	4.4	7.4	18.4	26.8	(0.5)	14.7	32,748	43.6	40.2	2.6	2.5	6.5	6.0
Petrobras	BRL	22	4.2	(1.5)	8.9	39.0	40.7	69.6	37.0	91,519	10.6	8.5	0.9	0.8	5.5	5.1
Lukoil	USD	3,874	0.4	3.5	1.7	16.2	29.5	24.9	16.2	57,447	6.1	6.1	0.8	0.7	N/A	N/A
Kinder	USD	16	1.9	(3.1)	(5.0)	(12.0)	(17.7)	(24.0)	(12.0)	47,497	19.6	17.7	1.0	1.1	10.0	9.7
Statoil	NOK	182	2.0	2.2	2.2	4.4	17.3	23.1	4.0	78,246	15.9	15.1	1.9	1.8	3.6	3.4
BHP	AUD	29	0.9	1.0	(3.0)	0.3	11.3	17.4	(2.2)	114,334	15.9	16.5	1.9	1.9	6.1	6.2
PTT E&P	THB	116	1.3	0.4	1.3	16.6	27.8	27.1	16.0	14,750	13.3	12.6	1.2	1.1	3.8	3.6
Petronas gas	MYR	18	0.3	0.6	0.6	6.1	(0.1)	(9.8)	3.0	9,087	18.9	18.6	2.7	2.6	10.5	10.3
Chesapeake	USD	3	3.9	6.6	22.8	(15.9)	(22.5)	(36.3)	(18.4)	2,937	4.1	4.4	#N/A N/A	5.3	6.0	6.0
Noble Energy	USD	31	5.9	4.3	6.4	8.0	15.0	(7.0)	6.3	15,253	39.4	25.5	1.5	1.4	7.6	6.6
Average		**0**	**1.5**	**1.5**	**2.7**	**4.2**	**7.9**	**5.4**	**3.0**							
PV																
WACKER	EUR	135.3	2.2	3.3	(4.8)	(15.5)	19.5	35.9	(16.6)	8,662	19.6	16.6	2.1	2.0	6.8	6.5
GCL-Poly	HKD	1.1	(0.9)	(12.5)	(18.6)	(22.2)	(3.7)	(0.9)	(25.0)	2,488	6.6	5.8	0.6	0.6	6.3	5.8
SunPower	USD	8.0	0.0	12.0	9.2	(11.4)	9.1	29.9	(4.6)	1,125	#N/A N/A	49.6	4.7	4.1	13.4	9.1
Canadian Solar	USD	17.2	2.6	7.5	9.7	(0.2)	8.1	39.1	1.7	995	11.4	10.3	1.0	0.9	8.7	9.1
JA Solar	USD	6.8	(0.7)	(6.3)	(7.3)	(8.2)	(12.9)	30.5	(8.3)	325	13.0	10.8	1.5	1.5	3.9	3.5
Yingli	USD	1.7	0.6	(2.3)	4.4	(3.5)	(30.7)	(16.7)	(1.2)	30	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
First Solar	USD	73.9	1.2	6.3	10.7	6.9	51.5	154.4	9.4	7,718	45.0	22.2	1.4	1.3	13.7	8.1
한화큐셀	USD	8.1	0.6	0.0	0.9	10.7	(1.1)	11.5	14.8	671	36.6	26.0	#N/A N/A	#N/A N/A	8.4	7.6
OCI	KRW	143,000	(0.7)	(3.1)	(12.0)	10.0	33.6	68.6	5.1	3,183	0.0	13.2	0.0	0.9	0.0	6.3
웅진에너지	KRW	6,770	(0.4)	(7.3)	(11.4)	(15.4)	(26.4)	38.9	(17.6)	188	N/A	0.0	0.9	0.0	6.3	0.0
신성솔라에너지	KRW	1,785	(0.8)	(1.4)	(6.1)	(8.5)	(12.1)	(4.5)	(6.8)	288	N/A	0.9	0.0	6.3	0.0	8.3
Average			**0.3**	**(0.3)**	**(2.3)**	**(5.2)**	**3.2**	**35.1**	**(4.5)**							
Gas Company																
Towngas China	HKD	7.1	1.0	10.3	9.1	16.3	31.7	57.1	12.6	2,495	14.0	12.7	1.2	1.1	12.2	11.1
Kulun	HKD	7.1	(3.8)	(1.7)	(3.3)	(14.5)	(3.5)	0.4	(13.0)	7,284	9.6	8.5	1.1	1.0	5.7	5.4
Beijing Enterprise	HKD	42.6	(3.6)	(0.8)	(3.9)	(7.0)	(1.5)	(0.2)	(8.2)	6,852	7.5	6.7	0.8	0.7	13.0	12.8
ENN Energy	HKD	66.1	(1.2)	7.1	3.3	16.5	22.3	50.6	18.6	9,136	14.7	12.5	2.8	2.4	8.9	7.8
China Resources Gas	HKD	27.4	0.9	5.4	0.4	(2.0)	0.6	(2.1)	(3.5)	7,753	14.5	13.0	2.6	2.2	8.5	7.8
China Gas Holdings	HKD	28.2	2.0	18.0	13.1	26.2	19.8	118.2	30.3	17,826	19.3	16.3	4.7	3.9	14.7	12.7
Shenzen Gas	HKD	16.2	0.0	4.3	1.1	12.8	10.2	37.4	8.6	4,185	10.7	9.7	1.4	1.2	7.9	7.9
Shann Xi	CNY	7.3	(0.4)	(0.9)	2.5	(16.5)	(14.1)	(23.2)	(13.4)	1,286	13.9	15.7	1.4	1.3	#N/A N/A	#N/A N/A
Suntien	HKD	2.1	0.9	9.7	11.5	7.5	5.9	39.0	3.4	1,013	6.1	5.4	0.7	0.6	8.0	6.9
China Oil & Gas	HKD	0.7	(1.4)	(2.8)	(4.2)	(2.8)	25.5	11.3	(18.8)	512	10.6	9.2	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(0.6)**	**4.9**	**3.0**	**3.7**	**9.7**	**28.8**	**1.7**							
EV																
LG화학	KRW	410,000	0.9	(0.4)	9.5	4.9	5.4	39.0	1.2	27,017	14.3	13.3	1.7	1.6	6.5	6.1
삼성SDI	KRW	204,500	(1.9)	(1.0)	14.9	1.2	(4.0)	52.6	0.0	13,126	15.6	11.7	1.2	1.1	13.1	10.5
Panasonic	JPY	1647.0	0.0	(2.5)	(0.0)	(0.9)	0.3	32.3	(0.2)	37,975	15.6	13.5	2.1	1.9	6.0	5.6
GS Yuasa	JPY	576.0	0.0	(2.2)	(4.0)	2.3	2.1	8.1	2.7	2,239	16.4	14.7	1.3	1.2	7.1	6.5
NEC	JPY	3190.0	0.0	(2.0)	(1.1)	3.9	7.8	11.1	4.9	7,810	21.6	15.1	0.9	0.9	6.9	6.2
BYD Auto	CNY	62.6	(0.3)	(2.7)	3.5	1.0	0.0	27.0	(3.8)	26,556	26.8	21.4	2.8	2.5	12.8	11.3
Tesla Motors	USD	316.5	1.9	(3.1)	(5.0)	(4.6)	(13.6)	26.3	1.7	53,468	#N/A N/A	126.0	11.6	10.5	46.2	17.9
Kandi Technologies	USD	5.2	9.5	1.0	(11.1)	(28.8)	2.3	42.5	(23.5)	281	#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			**1.3**	**(1.6)**	**0.8**	**(2.6)**	**0.0**	**29.9**	**(2.1)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임