

1. News Summary (3 page)

2020년 7월 21일

News	
WTI comment	국제유가, 코로나 백신 기대에 상승...WTI 0.5%↑
Headline	중국 Jiangsu Sailboat PC, MTO 유닛 7월 31일 즈음에 재가동
News 1.	중국 Wanhua Chemical, LPG 원재료 크래커 8월 재가동
News 2.	불확실한 수요, 공급과잉에 따른 원유 시장 영향
News 3.	-
News 4.	-

Conclusion	
AN 약세에 ACN 공장의 물량소화 제한돼 원재료 프로필렌 약세 전망 추가 에틸렌 증설, 공급 물량 개시에 에틸렌 장기 약세 재부각될 전망 수요가 정체된 상황에서 공급 확대 우려가 유가 상승 제한시킬 전망	
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	40.8	0.5	1.8	2.7	123.4	(26.6)
Dubai	\$/bbl	42.7	(0.3)	(1.5)	(0.5)	107.3	(30.6)
Gasoline	\$/bbl	45.5	(1.2)	(2.7)	(9.0)	111.2	(38.5)
Diesel	\$/bbl	49.1	(0.9)	(1.8)	(0.5)	58.8	(36.2)
Complex margin	\$/bbl	1.8	(0.4)	(0.4)	(1.1)	(2.8)	(8.0)
1M lagging	\$/bbl	3.0	(1.7)	(1.6)	(9.7)	8.7	(8.4)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	380	(0.8)	(1.2)	2.7	83.1	(25.7)
Butadiene	\$/t	380	0.0	8.3	15.2	16.9	(65.3)
HDPE	\$/t	950	0.0	3.3	13.1	28.4	(6.9)
MEG	\$/t	422	0.7	2.7	0.5	1.9	(20.5)
PX	\$/t	518	(1.1)	(0.6)	(3.7)	14.0	(37.8)
SM	\$/t	655	0.0	0.3	3.0	9.6	(35.5)
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	1.64	(4.5)	(5.6)	(5.6)	(29.0)	(33.5)
Natural rubber	\$/t	1,160	0.0	(0.9)	0.9	2.7	(18.9)
Cotton	C/lbs	63.0	1.6	(1.2)	0.8	16.6	0.3

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Utility				%	%	%	%
SMP	07/20	원/kwh	74	3.9	0.8	(4.4)	2.7
Petrochemical				%	%	%	%
Ethylene	07/20	\$/t	735	1.4	(6.1)	116.2	(4.5)
Propylene	07/20	\$/t	780	1.3	8.7	26.8	(10.3)
Benzene	07/20	\$/t	408	(2.4)	(4.1)	19.0	(41.4)
Toluene	07/20	\$/t	455	0.0	(2.7)	31.9	(35.0)
Xylene	07/20	\$/t	465	0.0	6.9	32.9	(35.2)
PP	07/20	\$/t	928	1.1	3.3	14.9	(13.1)
PVC	07/20	\$/t	820	3.8	3.8	32.3	(6.8)
ABS	07/20	\$/t	1,360	0.0	(1.4)	18.3	(7.5)
SBR	07/20	\$/t	985	4.2	4.8	(12.1)	(25.1)
SM	07/20	\$/t	665	(1.1)	1.9	8.1	(35.7)
BPA	07/20	\$/t	1,448	1.8	1.8	25.9	4.3
Caustic	07/20	\$/t	235	0.0	(5.2)	1.7	(24.4)
Solar				%	%	%	%
Polysilicon	07/15	\$/kg	6.83	2.7	10.3	5.7	(15.5)
Module	07/15	\$/W	0.163	0.0	(1.2)	(7.9)	(22.4)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	42.5	(2.3)	(0.4)	(7.6)	3.2	(43.3)
ARAMCO	SAR	33	(0.2)	(0.6)	0.0	10.3	-
Petrochina	CNY	4.49	2.3	(3.0)	5.0	(0.8)	(31.5)
Gazprom	RUB	188.4	2.0	(3.8)	(3.8)	1.5	(12.8)
Petrobras	BRL	22.7	0.0	2.6	5.9	42.6	(17.1)
Refinery							
Phillips66	USD	62.3	(2.4)	3.4	(16.6)	7.2	(38.9)
Valero	USD	54.3	(2.1)	2.1	(14.0)	8.0	(35.1)
JX	JPY	393.0	(0.3)	2.5	(0.4)	7.5	(23.2)
Neste Oil	EUR	37.0	(0.1)	2.4	4.4	26.9	20.6

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	52.6	1.2	4.3	3.5	17.3	(13.6)
DowDuPont	USD	53.2	(2.5)	1.2	1.0	33.8	(25.7)
SABIC	SAR	86.6	(1.5)	(1.8)	(5.0)	17.5	(24.2)
Formosa Pla.	TWD	80.5	(0.6)	(1.8)	(6.2)	(2.3)	(20.3)
Shin-Etsu	JPY	12,925	0.7	0.8	4.2	9.2	29.4
Renewable							
Wacker	EUR	71.8	3.9	2.7	14.3	41.2	9.9
First Solar	USD	62.16	1.9	10.6	23.8	51.6	(6.6)
GCL-Poly	HKD	0.23	(0.4)	(6.2)	(0.4)	(4.7)	(49.4)
Tesla Motors	USD	1,643.0	9.5	9.7	64.2	120.1	536.4

4. Coverage Summary

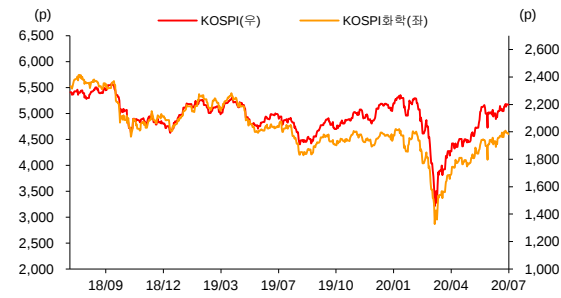
	07/20	1D	1W	1M	3M	6M	12M
KOSPI	2,198	(0.1)	0.6	2.7	17.0	(2.3)	5.0
KOSPI확화	4,601	(0.6)	(1.1)	2.5	16.4	(1.7)	(3.2)
LG화학	511,000	(1.0)	(6.6)	(0.2)	44.4	53.5	41.4
롯데케미칼	175,000	(0.8)	(0.6)	(4.6)	(14.0)	(19.5)	(29.1)
한화솔루션	25,550	6.9	5.1	37.7	77.4	30.4	23.1
금호석유화학	89,300	2.1	12.6	14.2	35.7	14.9	2.5
KCC	139,000	(1.4)	1.8	(3.1)	(0.4)	(40.5)	(45.5)
OCI	45,400	4.2	(3.2)	16.7	16.0	(28.8)	(50.1)
SKC	67,000	(0.9)	(6.2)	13.6	24.5	32.4	53.7
SK이노베이션	122,500	(1.6)	(6.5)	(2.8)	24.4	(8.2)	(27.9)
S-Oil	62,500	(1.3)	(1.0)	(8.0)	(8.5)	(25.7)	(30.9)
GS	35,600	(1.1)	(0.7)	(6.1)	(5.9)	(27.1)	(32.4)
SK가스	77,600	(0.6)	6.9	5.0	2.8	(2.5)	(1.0)
포스코인터내셔널	14,250	1.1	1.1	(3.1)	10.0	(20.2)	(20.2)
LG상사	15,350	1.0	3.4	(3.8)	25.3	9.3	(18.4)
한국전력	19,950	1.0	(0.2)	(1.7)	(7.2)	(25.7)	(22.8)
한국가스공사	25,950	(0.6)	(1.0)	(4.4)	(2.8)	(26.0)	(40.5)

투자의견	TP	%	P/E	P/B
* 추정치는 12M fwd 기준임				
* 모든 coverage 업체의 실적은 연결기준임				
매수	350,000	(31.5)	43.97	2.50
매수	220,000	25.7	13.85	0.49
매수	16,000	(37.4)	15.18	0.72
매수	75,000	(16.0)	14.47	1.04
매수	160,000	15.1	17.71	0.30
매수	45,000	(0.9)	7.70	0.45
매수	53,000	(20.9)	40.41	1.70
매수	110,000	(10.2)	11.51	0.67
매수	70,000	12.0	13.08	1.04
매수	48,000	34.8	6.79	0.40
매수	75,000	(3.4)	5.60	0.48
매수	14,000	(1.8)	8.01	0.55
매수	11,000	(28.3)	11.97	0.51
매수	24,000	20.3	7.19	0.17
매수	26,000	0.2	8.46	0.34

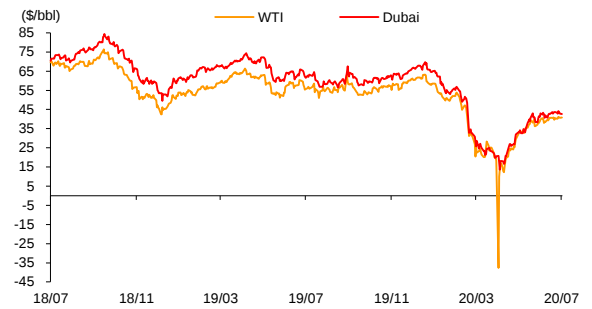
• 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
• 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
• 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
• 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

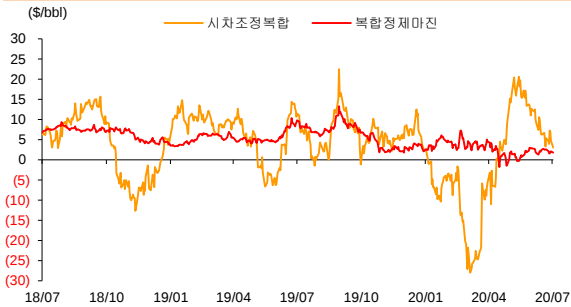
KOSPI/KOSPI화학



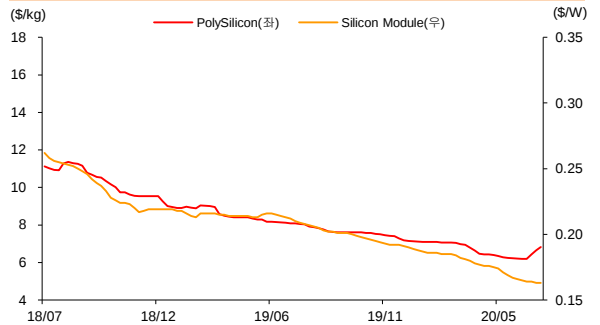
WTI/Dubai



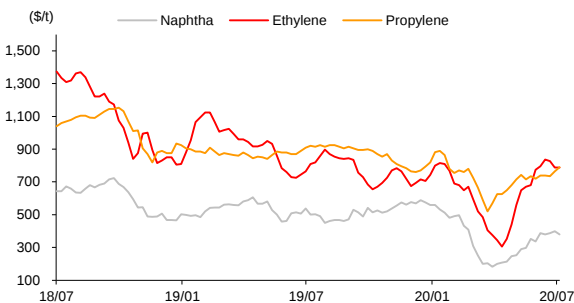
Complex & 1M lagging margin



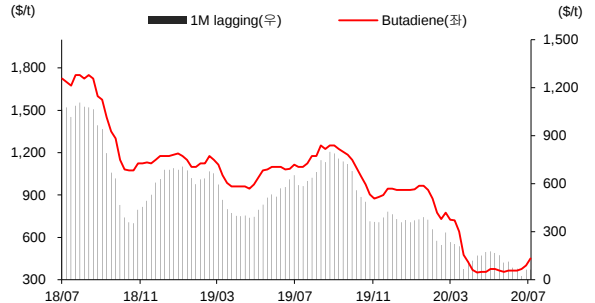
Polysilicon & Module prices



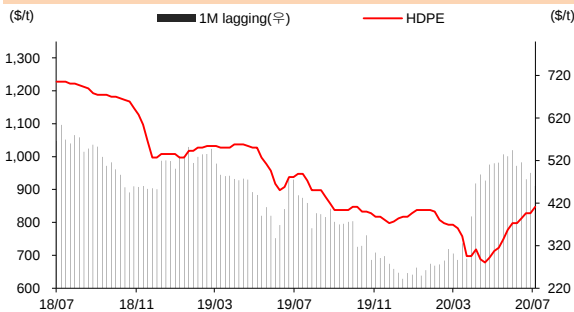
Naphtha/Ethylene/Propylene prices



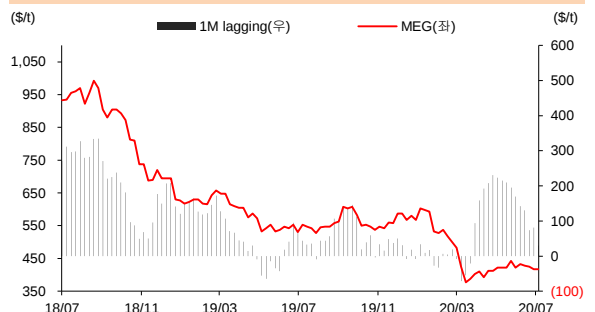
Butadiene price & 1M lagging naphtha spread



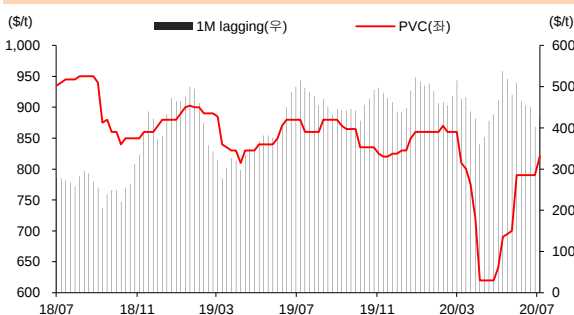
HDPE price & 1M lagging naphtha spread



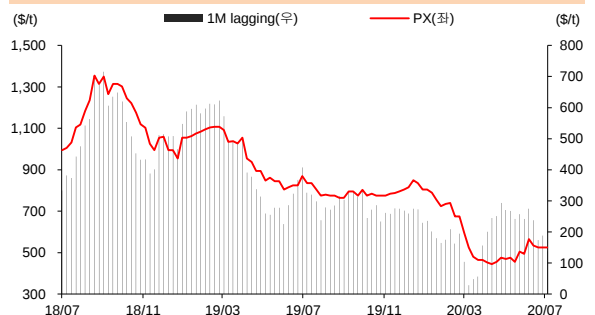
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Ciscem, Petronet, Platts, Pvsights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용



News Comment

Headline	(출처: Platts)
제목	중국 Jiangsu Sailboat PC, MTO 유닛 7월 31일 즈음에 재가동
결론	AN 약세에 ACN 공장의 물량소화 제한돼 원재료 프로필렌 약세 전망
사실	1) 중국 Jiangsu Sailboat PC는 MTO 유닛을 7월 31일에 재가동할 계획 2) 지난 16일 당사의 MTO 유닛은 기술결함 문제로 예기치 못하게 중단 3) MTO 공장은 460,000톤/년 프로필렌, 380,000톤/년 에틸렌 생산 가능 4) 당사의 MTO 유닛은 ACN 공장에 프로필렌 원재료를 공급함 5) AN 약세에 ACN 공장의 물량소화 제한돼 원재료 프로필렌 약세 전망

Issue 1	(출처: Platts)
제목	중국 Wanhua Chemical, LPG 원재료 크래커 8월 재가동
결론	추가 에틸렌 증설, 공급 물량 개시에 에틸렌 장기 약세 재부각될 전망
사실	1) 중국 Wanhua Chemical은 100만톤/년 에틸렌 신규 공장 가동 예정 2) 신규 일관공정 에틸렌 크래커는 전적으로 LPG 기반으로 운영될 예정 3) 당사에 따르면 실질적인 상업생산은 8월 말로 바라보고 있음 4) 해당 공장은 총 220만톤/년의 LPG를 원료로 사용할 예정임 5) 추가 에틸렌 증설, 공급 물량 개시에 에틸렌 장기 약세 재부각될 전망

Issue 3	(출처: Platts)
제목	
결론	
사실	1) 2) 3) 4) 5)

Issue 5	
제목	
결론	
사실	1) 2) 3) 4) 5)

WTI Comment	(출처: 연합뉴스)
제목	국제유가, 코로나 백신 기대에 상승...WTI 0.5% ↑
상승	랜트 임상시험 결과 등 코로나19 백신과 관련한 긍정적 소식
요인	
하락	
요인	

Issue 2	(출처: Platts)
제목	불확실한 수요, 공급과잉에 따른 원유 시장 영향
결론	수요가 정체된 상황에서 공급 확대 우려가 유가 상승 제한시킬 전망
사실	1) 최근 글로벌 공급과잉과 수요 불확실성 우려가 원유가격을 억누름 2) 지난 4달 이상의 감소 끝에 미국 오일, 가스 리그 수는 288개로 증가 3) 리그 수 증가에 따른 산유량 증대 전망은 WTI forward 가격을 제한 4) OPEC+ 감산 준수에 대한 이슈는 존재. 생산량 기대치 이상 우려감 상존 5) 수요가 정체된 상황에서 공급 확대 우려가 유가 상승 제한시킬 전망

Issue 4	
제목	
결론	
사실	1) 2) 3) 4) 5)

Issue 6	
제목	
결론	
사실	1) 2) 3) 4) 5)

Commodity Price Data

Daily Price		07/20	1D	1W	1M	3M	6M	12M	YTD	2018avg.	2019avg.	2020acc.
F/X	USD/EUR	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9
	Change, %		(0.2)	(0.9)	(2.4)	(5.1)	(3.1)	(2.0)	(2.0)	3.0	(2.2)	(3.5)
	USD/JPY	107.3	107.0	107.3	106.9	107.6	110.2	107.7	108.8	110.4	109.0	108.2
	Change, %		0.2	(0.0)	0.4	(0.3)	(2.6)	(0.4)	(1.4)	(2.9)	(1.6)	(0.8)
	USD/KRW	1,203.3	1,205.1	1,200.6	1,209.9	1,220.4	1,158.1	1,174.4	1,154.8	1,100.3	1,165.7	1,206.2
	Change, %		(0.1)	0.2	(0.5)	(1.4)	3.9	2.5	4.2	9.4	3.2	(0.2)
Agriculture	Corn	328.3	333.0	334.0	332.5	314.3	389.3	430.8	387.8	368.2	383.5	347.7
	Change, %		(1.4)	(1.7)	(1.3)	4.5	(15.7)	(23.8)	(15.3)	(10.9)	(14.4)	(5.6)
	Soybean	903.0	898.0	876.5	876.5	826.5	929.8	901.5	943.0	931.9	889.8	873.9
	Change, %		0.6	3.0	3.0	9.3	(2.9)	0.2	(4.2)	(3.1)	1.5	3.3
	Wheat	522.0	534.8	524.8	481.3	548.8	570.5	502.5	558.8	495.4	494.7	532.1
	Change, %		(2.4)	(0.5)	8.5	(4.9)	(8.5)	3.9	(6.6)	5.4	5.5	(1.9)
	Rice	11.8	11.8	16.2	14.0	14.6	13.5	11.9	13.1	11.5	11.3	14.7
	Change, %		(0.1)	(27.0)	(15.7)	(18.9)	(12.6)	(1.1)	(10.0)	2.4	4.2	(19.6)
	Oats	278.5	280.0	341.0	306.0	293.3	311.8	271.8	292.0	256.2	286.9	300.0
	Change, %		(0.5)	(18.3)	(9.0)	(5.0)	(10.7)	2.5	(4.6)	8.7	(2.9)	(7.2)
	Palm Oil	2,754.0	2,699.0	2,483.0	2,538.0	2,290.0	2,973.0	1,905.0	3,041.0	2,250.9	2,176.0	2,491.2
	Change, %		2.0	10.9	8.5	20.3	(7.4)	44.6	(9.4)	22.4	26.6	10.6
	Cocoa	2,219.0	2,160.0	2,311.0	2,387.0	2,338.0	2,797.0	2,467.0	2,540.0	2,308.4	2,387.4	2,488.9
	Change, %		2.7	(4.0)	(7.0)	(5.1)	(20.7)	(10.1)	(12.6)	(3.9)	(7.1)	(10.8)
	Cotton	63.0	62.0	63.8	61.6	54.0	71.3	62.3	69.1	82.1	67.3	61.3
	Change, %		1.6	(1.2)	2.3	16.6	(11.6)	1.2	(8.8)	(23.3)	(6.4)	2.8
MYR/mt	Sugar	11.7	11.7	11.6	12.1	10.1	14.5	11.6	13.4	12.3	12.4	12.2
	Change, %		(0.1)	1.2	(2.7)	16.5	(18.9)	1.1	(12.7)	(4.4)	(5.1)	(4.1)
	Coffee	98.5	101.1	97.4	93.8	113.7	112.2	105.9	129.7	112.7	101.4	107.2
	Change, %		(2.5)	1.1	5.1	(13.3)	(12.2)	(6.9)	(24.1)	(12.6)	(2.8)	(8.1)
Energy	WTI	40.8	40.6	40.1	39.8	(37.6)	58.5	55.6	61.1	64.8	57.0	37.7
	Change, %		0.5	1.8	2.7	(208.5)	(30.3)	(26.6)	(33.2)	(37.0)	(28.4)	8.2
	Brent	43.3	43.1	42.7	42.2	25.6	65.2	62.5	66.0	71.6	64.2	42.4
	Change, %		0.3	1.3	2.6	69.3	(33.6)	(30.7)	(34.4)	(39.5)	(32.6)	2.1
	Natural Gas	1.6	1.7	1.7	1.7	1.9	2.0	2.3	2.2	3.1	2.5	1.8
	Change, %		(4.5)	(5.6)	(1.7)	(14.7)	(18.1)	(27.1)	(25.0)	(46.5)	(35.1)	(8.9)
	Ethanol	1.1	1.2	1.3	1.2	0.9	1.3	1.5	1.4	1.4	1.4	1.2
	Change, %		(5.4)	(16.8)	(10.7)	19.0	(17.9)	(24.8)	(19.5)	(19.4)	(20.4)	(5.7)
	RBOB Gasoline	122.9	122.5	127.3	127.2	66.8	164.1	184.1	169.8	191.7	172.6	115.7
	Change, %		0.3	(3.5)	(3.4)	83.8	(25.1)	(33.3)	(27.6)	(35.9)	(28.8)	6.1
Metal	Coal	52.0	52.2	52.2	53.1	61.5	69.9	74.1	67.7	107.1	78.1	60.8
	Change, %		(0.4)	(0.4)	(2.1)	(15.4)	(25.6)	(29.8)	(23.2)	(51.5)	(33.4)	(14.4)
	Gold	1,817.8	1,810.4	1,802.8	1,743.9	1,695.7	1,560.8	1,425.4	1,517.3	1,269.3	1,393.8	1,663.1
	Change, %		0.4	0.8	4.2	7.2	16.5	27.5	19.8	43.2	30.4	9.3
	Silver	19.9	19.3	19.1	17.6	15.3	18.1	16.2	17.9	15.7	16.2	16.9
	Change, %		3.0	4.4	13.0	30.0	10.1	22.9	11.5	26.7	22.8	18.0
	Copper	6,487.5	6,448.0	6,571.0	5,849.5	5,183.5	6,259.0	6,065.0	6,174.0	6,543.8	6,025.4	5,597.6
	Change, %		0.6	(1.3)	10.9	25.2	3.7	7.0	5.1	(0.9)	7.7	15.9
	Nickel	996.4	993.8	1,034.9	975.0	951.3	1,035.2	1,011.1	1,029.3	897.6	994.1	947.3
	Change, %		0.3	(3.7)	2.2	4.7	(3.7)	(1.5)	(3.2)	11.0	0.2	5.2
	Zinc	2,200.5	2,182.5	2,261.5	2,082.0	1,947.0	2,444.0	2,425.0	2,272.0	2,893.0	2,507.3	2,061.6
	Change, %		0.8	(2.7)	5.7	13.0	(10.0)	(9.3)	(3.1)	(23.9)	(12.2)	6.7
	Lead	1,830.0	1,805.5	1,868.0	1,774.5	1,678.4	1,962.0	2,050.0	1,917.0	2,244.6	2,000.7	1,764.3
	Change, %		1.4	(2.0)	3.1	9.0	(6.7)	(10.7)	(4.5)	(18.5)	(8.5)	3.7
	Aluminum	14,240.0	14,100.0	15,235.0	13,740.0	12,420.0	14,340.0	13,900.0	14,345.0	14,252.6	13,912.8	13,301.7
	Change, %		1.0	(6.5)	3.6	14.7	(0.7)	2.4	(0.7)	(0.1)	2.4	7.1
	Cobalt	28,418.0	28,431.0	28,440.5	28,850.0	29,559.0	31,798.5	27,596.0	32,300.0	72,883.1	33,221.6	30,588.3
	Change, %		(0.0)	(0.1)	(1.5)	(3.9)	(10.6)	3.0	(12.0)	(61.0)	(14.5)	(7.1)
	HR Coil	480.0	475.0	481.0	501.0	520.0	581.0	539.0	588.0	828.8	603.3	532.4
	Change, %		1.1	(0.2)	(4.2)	(7.7)	(17.4)	(10.9)	(18.4)	(42.1)	(20.4)	(9.8)
	Scrap	276.0	276.0	274.0	303.0	273.0	292.0	288.0	288.0	390.2	301.1	291.4
	Change, %		0.0	0.7	(8.9)	1.1	(5.5)	(4.2)	(4.2)	(29.3)	(8.3)	(5.3)

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용



Refining Price Data

Daily Price		07/20	1D	1W	1M	3M	6M	12M	YTD	2018avg.	2019avg.	2020acc.
Crude Oil	WTI	40.8	40.6	40.1	39.8	18.3	58.5	55.6	61.2	64.7	56.3	37.3
	Change, %		0.5	1.8	2.7	123.4	(30.3)	(26.6)	(33.3)	(36.9)	(27.6)	9.3
	Dubai	42.7	42.9	43.4	43.0	20.6	65.2	61.6	65.7	69.3	62.6	40.7
	Change, %		(0.3)	(1.5)	(0.5)	107.3	(34.5)	(30.6)	(35.0)	(38.4)	(31.8)	5.0
Crude Oil	Gasoline(휘발유)	45.5	46.1	46.7	50.0	21.5	71.9	73.9	73.7	79.8	71.9	45.2
Product	Change, %		(1.2)	(2.7)	(9.0)	111.2	(36.7)	(38.5)	(38.3)	(43.0)	(36.7)	0.7
	Kerosene(등유)	43.8	44.2	43.6	44.4	24.8	76.4	77.2	80.3	84.7	76.2	44.5
	Change, %		(0.8)	0.6	(1.2)	76.4	(42.6)	(43.2)	(45.4)	(48.2)	(42.5)	(1.5)
	Diesel(경유)	49.1	49.5	50.0	49.3	30.9	76.3	77.0	80.7	84.0	76.3	48.9
	Change, %		(0.9)	(1.8)	(0.5)	58.8	(35.7)	(36.2)	(39.2)	(41.6)	(35.7)	0.3
	Bunker-C	38.7	39.2	39.9	38.7	23.3	52.5	66.9	49.1	65.1	57.0	36.3
	Change, %		(1.1)	(2.9)	0.0	66.0	(26.2)	(42.1)	(21.2)	(40.5)	(32.1)	6.5
	Naphtha	41.5	42.2	43.5	42.2	18.2	62.2	54.1	63.0	67.0	56.3	38.1
	Change, %		(1.6)	(4.6)	(1.7)	128.5	(33.3)	(23.4)	(34.1)	(38.1)	(26.4)	9.0
Dubai	Gasoline(휘발유)	2.8	3.2	3.4	7.0	0.9	6.7	12.4	8.0	10.5	9.3	4.5
Spread	Change		(0.4)	(0.6)	(4.3)	1.8	(3.9)	(9.6)	(5.3)	(7.7)	(6.5)	(1.7)
	Kerosene(등유)	1.1	1.3	0.2	1.4	4.2	11.2	15.7	14.6	15.3	13.6	3.8
	Change		(0.2)	0.9	(0.3)	(3.1)	(10.1)	(14.6)	(13.5)	(14.2)	(12.5)	(2.7)
	Diesel(경유)	6.4	6.7	6.6	6.4	10.3	11.1	15.4	15.0	14.6	13.7	8.2
	Change		(0.3)	(0.2)	(0.0)	(3.9)	(4.7)	(9.1)	(8.6)	(8.3)	(7.3)	(1.9)
	Bunker-C	(4.0)	(3.7)	(3.5)	(4.2)	2.7	(12.8)	5.3	(16.6)	(4.2)	(5.6)	(4.4)
	Change		(0.3)	(0.5)	0.2	(6.7)	8.8	(9.3)	12.6	0.2	1.6	0.4
	Naphtha	(1.3)	(0.7)	0.1	(0.8)	(2.5)	(3.0)	(7.4)	(2.7)	(2.3)	(6.3)	(2.6)
	Change		(0.5)	(1.3)	(0.5)	1.2	1.8	6.2	1.5	1.1	5.1	1.4
Refining	Simple(단순)	(1.0)	(0.7)	(0.7)	(0.5)	3.7	(3.1)	7.3	(3.4)	2.5	1.3	(0.2)
Margin	Change		(0.3)	(0.3)	(0.5)	(4.6)	2.1	(8.3)	2.4	(3.5)	(2.3)	(0.7)
	Complex(복합)	1.8	2.1	2.2	2.9	4.6	2.7	9.8	3.9	7.2	5.9	2.9
	Change		(0.4)	(0.4)	(1.1)	(2.8)	(0.9)	(8.0)	(2.1)	(5.4)	(4.1)	(1.1)
	Complex(lagging)	3.0	4.7	4.7	12.7	(5.6)	2.4	11.5	6.2	6.8	6.3	(0.9)
	Change		(1.7)	(1.6)	(9.7)	8.7	0.6	(8.4)	(3.2)	(3.8)	(3.2)	4.0

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

Utility SMP Data

Daily Price		07/20	1D	1W	1M	3M	6M	12M	YTD	2018avg.	2019avg.	2020acc.
Electricity	SMP	74.5	72.7	71.7	73.9	77.9	86.0	72.5	81.9	94.5	90.3	85.0
	Change, %		2.5	3.9	0.8	(4.4)	(13.4)	2.7	(9.0)	(21.2)	(17.5)	(12.4)

자료 : EPSIS, SK증권

Petrochemical Price Data

Daily Price			07/20	07/17	07/16	07/15	07/14	07/13	07/10	07/09	07/08	07/07
Spot Price	Naphtha	CFR Japan	380.0	383.3	388.5	392.3	385.8	384.8	403.0	403.0	397.3	398.3
	Ethylene	CFR SE Asia	715.0	715.0	715.0	715.0	705.0	705.0	750.0	750.0	750.0	770.0
	Propylene	FOB Korea	785.0	780.0	780.0	780.0	780.0	775.0	765.0	765.0	765.0	765.0
	Butadiene	FOB Korea	380.0	380.0	366.0	351.0	351.0	351.0	351.0	351.0	351.0	335.0
	HDPE	CFR FE Asia	950.0	950.0	930.0	930.0	920.0	920.0	900.0	900.0	900.0	900.0
	LDPE	CFR FE Asia	980.0	980.0	970.0	970.0	950.0	950.0	930.0	930.0	930.0	930.0
	LLDPE	CFR FE Asia	960.0	860.0	860.0	860.0	850.0	850.0	830.0	830.0	830.0	830.0
	MEG	CFR China	422.0	419.0	420.0	410.0	410.0	411.0	414.0	414.0	414.0	415.0
	PP	CFR FE Asia	915.0	915.0	915.0	915.0	915.0	915.0	910.0	910.0	905.0	905.0
	PX	CFR China	518.0	524.0	528.3	521.3	517.3	521.0	522.0	522.0	522.0	524.0
	PTA	CFR China	435.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0	440.0
	Benzene	FOB Korea	404.0	407.0	414.0	404.3	403.3	414.2	414.7	414.7	420.7	430.3
	Toluene	FOB Korea	387.5	392.5	411.5	409.0	408.0	413.0	413.0	413.0	413.0	421.0
	Xylene	FOB Korea	414.5	424.5	429.5	435.0	433.0	438.0	437.0	437.0	437.0	442.0
	SM	FOB Korea	655.0	655.0	661.0	657.0	653.0	653.0	663.0	663.0	663.0	662.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2018avg.	2019avg.	2020acc.
Spot Price	Naphtha	CFR Japan	379.0	398.5	387.5	199.0	560.0	501.0	588.5	614.2	523.8	370.3
	Change, %			(4.9)	(2.2)	90.5	(32.3)	(24.4)	(35.6)	(38.3)	(27.6)	2.3
	Ethylene	CFR SE Asia	735.0	725.0	782.5	340.0	755.0	770.0	665.0	1,145.9	829.1	633.3
	Change, %			1.4	(6.1)	116.2	(2.6)	(4.5)	10.5	(35.9)	(11.3)	16.1
	Propylene	CFR SE Asia	780.0	770.0	717.5	615.0	905.0	870.0	815.0	987.0	839.4	727.4
	Change, %			1.3	8.7	26.8	(13.8)	(10.3)	(4.3)	(21.0)	(7.1)	7.2
	Butadiene	CFR SE Asia	400.0	350.0	315.0	320.0	890.0	1,125.0	885.0	1,391.5	1,045.4	549.3
	Change, %			14.3	27.0	25.0	(55.1)	(64.4)	(54.8)	(71.3)	(61.7)	(27.2)
	Benzene	CFR SE Asia	407.5	417.5	425.0	342.5	732.5	695.0	750.0	827.8	643.2	500.7
	Change, %			(2.4)	(4.1)	19.0	(44.4)	(41.4)	(45.7)	(50.8)	(36.6)	(18.6)
	Toluene	CFR SE Asia	455.0	455.0	467.5	345.0	737.5	700.0	730.0	773.5	680.4	507.5
	Change, %			0.0	(2.7)	31.9	(38.3)	(35.0)	(37.7)	(41.2)	(33.1)	(10.3)
	Xylene	CFR SE Asia	465.0	465.0	435.0	350.0	725.0	717.5	710.0	802.5	705.3	515.5
	Change, %			0.0	6.9	32.9	(35.9)	(35.2)	(34.5)	(42.1)	(34.1)	(9.8)
Spread	Ethylene	-Naphtha	356.0	326.5	395.0	141.0	195.0	269.0	76.5	531.7	305.3	263.0
	Change, %			9.0	(9.9)	152.5	82.6	32.3	365.4	(33.0)	16.6	35.4
	Propylene	-Naphtha	401.0	371.5	330.0	416.0	345.0	369.0	226.5	372.8	315.7	357.1
	Change, %			7.9	21.5	(3.6)	16.2	8.7	77.0	7.6	27.0	12.3
	Butadiene	-Naphtha	21.0	(48.5)	(72.5)	121.0	330.0	624.0	296.5	777.3	521.6	179.0
	Change, %			(143.3)	(129.0)	(82.6)	(93.6)	(96.6)	(92.9)	(97.3)	(96.0)	(88.3)
	Benzene	-Naphtha	28.5	19.0	37.5	143.5	172.5	194.0	161.5	213.6	119.4	130.4
	Change, %			50.0	(24.0)	(80.1)	(83.5)	(85.3)	(82.4)	(86.7)	(76.1)	(78.1)
	Toluene	-Naphtha	76.0	56.5	80.0	146.0	177.5	199.0	141.5	159.3	156.7	137.2
	Change, %			34.5	(5.0)	(47.9)	(57.2)	(61.8)	(46.3)	(52.3)	(51.5)	(44.6)
	Xylene	-Naphtha	86.0	66.5	47.5	151.0	165.0	216.5	121.5	188.3	181.5	145.2
	Change, %			29.3	81.1	(43.0)	(47.9)	(60.3)	(29.2)	(54.3)	(52.6)	(40.8)

자료 : Ciscem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차임

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2018avg.	2019avg.	2020acc.
Spot Price	HDPE	CFR SE Asia	847.5	827.5	797.5	717.5	837.5	947.5	817.5	1,211.4	933.9	780.5
	Change, %			2.4	6.3	18.1	1.2	(10.6)	3.7	(30.0)	(9.3)	8.6
	MEG	CFR SE Asia	417.5	417.5	432.5	410.0	602.5	552.5	567.5	918.4	579.6	469.3
	Change, %			0.0	(3.5)	1.8	(30.7)	(24.4)	(26.4)	(54.5)	(28.0)	(11.0)
	PVC	CFR SE Asia	820.0	790.0	790.0	620.0	860.0	880.0	830.0	920.1	858.4	779.0
	Change, %			3.8	3.8	32.3	(4.7)	(6.8)	(1.2)	(10.9)	(4.5)	5.3
	PP	CFR SE Asia	927.5	917.5	897.5	807.5	987.5	1,067.5	952.5	1,236.5	1,061.5	887.7
	Change, %			1.1	3.3	14.9	(6.1)	(13.1)	(2.6)	(25.0)	(12.6)	4.5
	2-EH	CFR Korea	840.0	855.0	820.0	730.0	900.0	950.0	830.0	1,117.0	965.2	812.8
	Change, %			(1.8)	2.4	15.1	(6.7)	(11.6)	1.2	(24.8)	(13.0)	3.3
	ABS	CFR SE Asia	1,360.0	1,360.0	1,380.0	1,150.0	1,420.0	1,470.0	1,400.0	1,902.0	1,461.5	1,298.2
	Change, %			0.0	(1.4)	18.3	(4.2)	(7.5)	(2.9)	(28.5)	(6.9)	4.8
	SBR	CFR SE Asia	985.0	945.0	940.0	1,120.0	1,390.0	1,315.0	1,390.0	1,701.4	1,389.6	1,172.0
	Change, %			4.2	4.8	(12.1)	(29.1)	(25.1)	(29.1)	(42.1)	(29.1)	(16.0)
	SM	CFR SE Asia	665.0	672.5	652.5	615.0	930.0	1,035.0	890.0	1,343.7	1,007.1	718.9
	Change, %			(1.1)	1.9	8.1	(28.5)	(35.7)	(25.3)	(50.5)	(34.0)	(7.5)
	Caustic	FOB NEA	235.0	235.0	248.0	231.0	270.0	311.0	270.0	483.2	312.2	251.1
	Change, %			0.0	(5.2)	1.7	(13.0)	(24.4)	(13.0)	(51.4)	(24.7)	(6.4)
	PX	CFR SE Asia	525.0	525.0	565.0	452.5	805.0	835.0	850.0	1,056.0	891.8	594.1
	Change, %			0.0	(7.1)	16.0	(34.8)	(37.1)	(38.2)	(50.3)	(41.1)	(11.6)
	PO	CFR China	1,447.5	1,422.5	1,422.5	1,150.0	1,375.0	1,387.5	1,457.5	1,829.5	1,464.2	1,305.8
	Change, %			1.8	1.8	25.9	5.3	4.3	(0.7)	(20.9)	(1.1)	10.8
	Caprolactam	CFR SE Asia	1,090.0	1,090.0	1,080.0	930.0	1,280.0	1,460.0	1,210.0	2,092.4	1,508.2	1,106.7
	Change, %			0.0	0.9	17.2	(14.8)	(25.3)	(9.9)	(47.9)	(27.7)	(1.5)
	PTA	CFR SE Asia	447.5	447.5	442.5	422.5	632.5	755.0	642.5	869.4	745.1	500.8
	Change, %			0.0	1.1	5.9	(29.2)	(40.7)	(30.4)	(48.5)	(39.9)	(10.6)
Spread	HDPE		468.5	429.0	410.0	518.5	277.5	446.5	229.0	597.2	410.2	410.2
	Change, %			9.2	14.3	(9.6)	68.8	4.9	104.6	(21.5)	14.2	14.2
	MEG		38.5	19.0	45.0	211.0	42.5	51.5	(21.0)	304.2	55.9	98.9
	Change, %			102.6	(14.4)	(81.8)	(9.4)	(25.2)	(283.3)	(87.3)	(31.1)	(61.1)
	PVC		441.0	391.5	402.5	421.0	300.0	379.0	241.5	305.9	334.7	408.7
	Change, %			12.6	9.6	4.8	47.0	16.4	82.6	44.2	31.8	7.9
	PP		548.5	519.0	510.0	608.5	427.5	566.5	364.0	622.3	537.8	517.4
	Change, %			5.7	7.5	(9.9)	28.3	(3.2)	50.7	(11.9)	2.0	6.0
	2-EH		461.0	456.5	432.5	531.0	340.0	449.0	241.5	502.8	441.4	442.5
	Change, %			1.0	6.6	(13.2)	35.6	2.7	90.9	(8.3)	4.4	4.2
	ABS		981.0	961.5	992.5	951.0	860.0	969.0	811.5	1,287.8	937.8	927.9
	Change, %			2.0	(1.2)	3.2	14.1	1.2	20.9	(23.8)	4.6	5.7
	SBR	BD spread	585.0	595.0	625.0	800.0	500.0	190.0	505.0	310.0	344.2	622.7
	Change, %			(1.7)	(6.4)	(26.9)	17.0	207.9	15.8	88.7	70.0	(6.0)
	SM		286.0	274.0	265.0	416.0	370.0	534.0	301.5	729.5	483.3	348.6
	Change, %			4.4	7.9	(31.3)	(22.7)	(46.4)	(5.1)	(60.8)	(40.8)	(18.0)
	Caustic											
	Change, %											
	PX		146.0	126.5	177.5	253.5	245.0	334.0	261.5	441.8	368.0	223.8
	Change, %			15.4	(17.7)	(42.4)	(40.4)	(56.3)	(44.2)	(67.0)	(60.3)	(34.8)
	PO	propylene spread	667.5	652.5	705.0	535.0	470.0	517.5	642.5	842.5	624.8	578.4
	Change, %			2.3	(5.3)	24.8	42.0	29.0	3.9	(20.8)	6.8	15.4
	Caprolactam	benzene spread	682.5	672.5	655.0	587.5	547.5	765.0	460.0	1,264.6	865.0	606.0
	Change, %			1.5	4.2	16.2	24.7	(10.8)	48.4	(46.0)	(21.1)	12.6
	PTA	px spread	80.0	80.0	47.0	105.8	69.0	170.5	47.5	130.2	120.9	84.9
	Change, %			0.0	70.2	(24.3)	15.9	(53.1)	68.4	(38.6)	(33.8)	(5.8)

자료 : Ciscem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용



Global peers

	Currency	07/20	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											20E	21E	20E	21E	20E	21E
Petrochemical																
DuPont	USD	53.2	(2.5)	1.2	1.0	33.8	(13.7)	(25.7)	(17.2)	39,001	18.0	16.0	1.0	1.0	12.0	11.0
Corteva	USD	33.3	(2.2)	3.3	2.2	12.5	(2.0)	1.2	(6.2)	20,770	20.0	17.0	0.9	0.8	10.0	9.0
Eastman	USD	75.0	(1.2)	5.0	7.9	39.9	(3.2)	(4.7)	(5.4)	10,191	13.0	11.0	1.6	1.6	9.0	8.0
BASF	EUR	52.6	1.2	4.3	3.5	17.3	(19.4)	(13.6)	(22.0)	55,222	23.0	15.0	1.2	1.2	10.0	8.0
Akzo Nobel	EUR	85.1	0.8	0.7	5.9	30.0	(3.4)	3.1	(6.2)	18,805	27.0	21.0	2.7	2.6	14.0	12.0
Arkema	EUR	90.4	1.1	(0.0)	10.9	20.7	3.5	10.6	(4.6)	7,933	18.0	14.0	1.3	1.2	8.0	7.0
Lanxess	EUR	48.5	1.0	(2.0)	0.7	15.4	(13.9)	(12.0)	(18.9)	4,851	16.0	12.0	1.3	1.3	7.0	6.0
Sumitomo Chemical	JPY	339	0.9	4.0	0.6	7.6	(30.7)	(30.4)	(31.9)	5,232	14.0	8.0	0.6	0.6	10.0	8.0
Mitsubishi Chemical	JPY	640	0.1	1.9	(1.3)	6.1	(22.9)	(13.9)	(21.7)	8,987	22.0	11.0	0.8	0.7	9.0	8.0
Shin-Etsu Chemical	JPY	12,925	0.7	0.8	4.2	9.2	2.6	29.4	7.2	50,204	18.0	17.0	1.9	1.7	9.0	8.0
Asahi Kasei	JPY	847	(0.3)	0.0	(2.0)	16.6	(29.7)	(24.8)	(31.4)	11,006	14.0	11.0	0.8	0.8	7.0	6.0
JSR	JPY	2,188	2.5	1.7	8.0	13.8	5.5	32.7	8.7	4,612	30.0	18.0	1.2	1.1	11.0	9.0
Nitto Denko	JPY	6,230	3.3	3.8	4.7	25.6	(1.6)	19.9	0.8	9,220	22.0	19.0	1.4	1.3	6.0	6.0
SABIC	SAR	86.6	(1.5)	(1.8)	(5.0)	17.5	(6.8)	(24.2)	(7.0)	69,274	78.0	29.0	1.6	1.6	12.0	9.0
Yansab	SAR	51.4	0.4	(1.3)	(3.2)	21.4	(7.7)	(13.6)	(8.2)	7,709	45.0	26.0	1.9	2.0	15.0	11.0
Formosa Plastics	TWD	80.5	(0.6)	(1.8)	(6.2)	(2.3)	(18.7)	(20.3)	(19.3)	17,357	22.0	15.0	1.5	1.4	19.0	16.0
Formosa Fiber	TWD	71.0	0.0	0.0	(2.9)	1.0	(19.5)	(26.4)	(18.9)	14,096	24.0	19.0	1.2	1.2	17.0	15.0
Nan Ya Plastics	TWD	63.5	(1.4)	(0.5)	(0.5)	6.4	(12.8)	(11.7)	(12.8)	17,058	25.0	19.0	1.4	1.3	19.0	18.0
Sinopec Shanghai	CNY	3.94	3.7	1.5	11.0	(5.3)	(1.5)	(19.1)	1.8	4,996	28.0	18.0	1.5	1.4	14.0	8.0
Sinopec Yizheng(Fiber)	CNY	1.84	2.8	(3.7)	5.1	(8.9)	(24.3)	(23.3)	(18.6)	3,973	40.0	29.0	4.5	4.0	10.0	9.0
Reliance	INR	1,920	0.4	(0.8)	9.1	55.8	26.5	53.7	28.4	168,648	27.0	19.0	2.3	2.1	16.0	13.0
Industries Qatar	QAR	7.9	0.6	(1.9)	(6.1)	18.8	(24.1)	(28.4)	(23.2)	13,062	31.0	20.0	1.4	1.4	2,375.0	380.0
PTT Chemical	THB	47.8	1.1	3.2	2.1	29.9	(14.0)	(22.7)	(16.2)	6,735	44.0	16.0	0.7	0.7	13.0	9.0
Petronas	MYR	6.2	(1.1)	(0.6)	(1.4)	8.0	(12.1)	(20.9)	(15.9)	11,596	26.0	19.0	1.6	1.5	11.0	9.0
LG화학	KRW	511,000	(1.0)	(6.6)	(0.2)	45.4	44.4	41.4	60.9	29,996	46.0	26.0	2.2	2.0	12.0	9.0
롯데케미칼	KRW	175,000	(0.8)	(0.6)	(4.6)	(12.7)	(21.0)	(29.1)	(21.9)	4,988	17.0	8.0	0.5	0.4	5.0	4.0
한화솔루션	KRW	25,550	6.9	5.1	37.7	76.2	27.4	23.1	35.5	3,396	16.0	10.0	0.7	0.7	9.0	8.0
금호석유	KRW	89,300	2.1	12.6	14.2	31.5	12.0	2.5	15.2	2,262	8.0	7.0	1.0	0.9	6.0	6.0
SKC	KRW	67,000	(0.9)	(6.2)	13.6	31.9	30.4	53.7	31.4	2,091	16.0	17.0	1.4	1.3	13.0	10.0
국도화학	KRW	37,750	(2.1)	10.1	2.4	(9.6)	(13.9)	(19.4)	(19.8)	182	-	-	-	-	-	-
효성	KRW	65,600	(0.8)	5.0	0.5	(0.8)	(10.5)	(15.8)	(17.1)	1,149	16.0	8.0	0.6	0.6	15.0	11.0
Average			0.4	1.2	3.7	18.0	(5.8)	(4.3)	(5.6)							
Refinery																
Valero	USD	54.3	(2.1)	2.1	(14.0)	8.0	(40.4)	(35.1)	(42.0)	22,150	-	15.0	1.2	1.2	19.0	7.0
Conoco Phillips	USD	39.3	(1.6)	(0.8)	(10.0)	13.8	(39.6)	(34.8)	(39.5)	42,178	-	101.0	1.4	1.5	10.0	7.0
Formosa Petrochemical	TWD	86.0	(0.1)	(1.6)	(2.4)	5.3	(11.2)	(19.2)	(11.8)	27,749	47.0	21.0	2.5	2.4	24.0	13.0
Marathon Petroleum	USD	36.8	(3.1)	4.1	(3.8)	47.9	(35.4)	(33.5)	(39.0)	23,897	-	21.0	1.1	1.1	13.0	7.0
Devon Energy	USD	10.3	(0.2)	3.1	(20.6)	12.1	(60.3)	(61.0)	(60.5)	3,930	-	-	1.0	1.0	5.0	5.0
Hollyfrontier	USD	26.6	(3.4)	(1.6)	(17.6)	1.3	(43.4)	(45.3)	(47.6)	4,298	-	19.0	0.8	0.8	11.0	6.0
Phillips 66	USD	62.3	(2.4)	3.4	(16.6)	7.2	(39.7)	(38.9)	(44.1)	27,218	40.0	11.0	1.2	1.1	15.0	7.0
Murphy Oil	USD	13.2	(0.8)	5.2	(12.9)	66.5	(48.0)	(38.9)	(50.9)	2,023	-	-	0.4	0.5	4.0	5.0
JX Holdings	JPY	393.0	(0.3)	2.5	(0.4)	7.5	(20.8)	(23.2)	(21.1)	11,835	15.0	7.0	0.7	0.6	9.0	7.0
Idemitsu	JPY	2,330.0	(0.5)	1.9	(0.8)	(2.9)	(21.6)	(24.1)	(23.1)	6,470	15.0	7.0	0.6	0.6	9.0	8.0
Nesteoil	EUR	37.0	(0.1)	2.4	4.4	26.9	7.9	20.6	19.3	32,556	26.0	21.0	4.7	4.3	16.0	13.0
Ashland	USD	75.7	(1.1)	10.8	10.0	36.8	(1.1)	(0.6)	(1.1)	4,573	30.0	24.0	1.4	1.4	12.0	11.0
Fuchs Petrolub	EUR	38.4	0.8	0.8	5.1	1.4	(12.2)	10.2	(13.0)	5,503	29.0	24.0	3.3	3.1	14.0	12.0
SK이노베이션	KRW	122,500	(1.6)	(6.5)	(2.8)	23.7	(9.6)	(27.9)	(18.3)	9,419	-	17.0	0.7	0.7	-	8.0
S-Oil	KRW	62,500	(1.3)	(1.0)	(8.0)	(6.4)	(25.3)	(30.9)	(34.4)	5,851	-	10.0	1.2	1.1	141.0	8.0
GS	KRW	35,600	(1.1)	(0.7)	(6.1)	(7.2)	(26.9)	(32.4)	(31.0)	2,751	12.0	5.0	0.4	0.4	9.0	7.0
Average			(1.2)	1.5	(6.0)	15.1	(26.7)	(25.9)	(28.6)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임



Global peers

	Currency	07/20	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 20E 21E	PBR 20E 21E	EV/EBITDA 20E 21E	
E&P/Shale														
Exxon Mobil	USD	43	(2.3)	(0.4)	(7.6)	3.2	(38.0)	(43.3)	(39.1)	179,699	-	32.0	1.0 1.1	12.0 8.0
BP	GBP	303	(2.0)	2.2	(5.7)	0.3	(38.6)	(41.4)	(35.7)	77,724	-	15.0	1.0 1.0	7.0 5.0
Shell	EUR	1,273	(2.3)	(0.5)	(7.5)	(5.2)	(43.2)	(49.9)	(43.1)	123,119	44.0	14.0	0.7 0.7	7.0 5.0
Chevron	USD	85	(2.2)	(0.2)	(5.9)	2.0	(26.2)	(31.8)	(29.2)	159,197	196.0	33.0	1.2 1.2	10.0 8.0
Total	EUR	33	(1.8)	(1.5)	(7.0)	7.6	(31.6)	(31.1)	(32.5)	99,328	34.0	14.0	0.9 0.9	7.0 6.0
ARAMCO	SAR	33	(0.2)	(0.6)	0.0	10.3	(4.3)	-	(5.7)	1,765,200	33.0	24.0	6.5 6.3	14.0 11.0
Sinopec	CNY	4	1.8	(3.1)	0.7	(12.4)	(20.0)	(23.6)	(20.9)	66,174	58.0	13.0	0.7 0.6	6.0 5.0
Petrochina	CNY	4	2.3	(3.0)	5.0	(0.8)	(22.8)	(31.5)	(22.6)	111,400	-	45.0	0.7 0.7	7.0 6.0
CNOOC	CNY	14	2.8	(4.3)	6.2	16.5	(21.6)	39.2	(25.2)	49,244	22.0	11.0	0.8 0.7	4.0 3.0
Gazprom	RUB	188	2.0	(3.8)	(3.8)	1.5	(25.7)	(12.8)	(26.5)	62,427	12.0	5.0	0.3 0.3	6.0 5.0
Rosneft	RUB	361	0.4	1.8	(3.9)	17.4	(25.5)	(14.1)	(19.6)	53,614	23.0	7.0	0.9 0.9	7.0 5.0
OCCIDENTAL	USD	16	(3.6)	(2.9)	(20.4)	24.6	(65.8)	(78.6)	(61.9)	14,407	-	-	0.7 0.8	9.0 8.0
Petrobras	BRL	23	0.0	2.6	5.9	42.6	(24.2)	(17.1)	(24.7)	56,578	-	15.0	0.9 0.8	7.0 5.0
Lukoil	USD	4,937	(0.2)	0.2	(9.6)	9.2	(26.5)	(5.1)	(20.0)	47,889	25.0	10.0	0.8 0.8	5.0 4.0
Kinder	USD	15	(2.8)	2.2	(6.6)	(1.3)	(32.1)	(29.3)	(31.5)	32,792	21.0	16.0	1.0 1.0	10.0 9.0
Equinor ASA	NOK	140	(0.9)	0.8	(1.2)	7.2	(23.1)	(13.7)	(20.3)	49,310	55.0	17.0	1.4 1.3	4.0 3.0
BHP	AUD	38	1.2	3.8	9.6	24.5	(6.9)	(6.5)	(1.4)	127,253	17.0	17.0	2.6 2.5	7.0 7.0
PTT E&P	THB	94	(0.3)	2.2	(1.8)	18.7	(29.0)	(30.6)	(24.7)	11,700	18.0	16.0	1.0 1.0	3.0 3.0
Petronas gas	MYR	16	(0.5)	(2.3)	(4.7)	6.1	1.1	(3.8)	(1.2)	7,574	18.0	17.0	2.4 2.3	9.0 9.0
Noble Energy	USD	10	5.4	17.4	1.8	48.4	(56.6)	(52.0)	(59.0)	4,883	-	-	1.1 1.1	7.0 7.0
Average			(0.2)	0.5	(2.8)	11.0	(29.3)	(25.1)	(27.2)					
PV														
WACKER	EUR	71.8	3.9	2.7	14.3	41.2	12.9	9.9	6.2	4,283	103.0	28.0	1.9 1.8	9.0 7.0
GCL-Poly	HKD	0.2	(0.4)	(6.2)	(0.4)	(4.7)	(42.3)	(49.4)	(23.7)	614	-	-	0.2 0.2	9.0 8.0
SunPower	USD	10.4	7.7	15.4	42.2	64.3	18.0	(5.8)	32.7	1,759	-	98.0	42.2 11.6	55.0 16.0
Canadian Solar	USD	24.9	6.2	7.5	37.8	48.3	11.0	18.8	12.6	1,469	8.0	8.0	0.9 0.8	7.0 6.0
LONGI Green Energy	CNY	47.7	3.2	0.3	40.6	71.1	64.6	98.9	92.2	25,780	29.0	23.0	5.4 4.4	20.0 17.0
First Solar	USD	62.2	1.9	10.6	23.8	51.6	16.1	(6.6)	11.1	6,583	22.0	17.0	1.2 1.1	11.0 8.0
OCI	KRW	45,400.0	4.2	(3.2)	16.7	14.2	(29.7)	(50.1)	(27.5)	900	-	19.0	0.4 0.4	26.0 7.0
Average			3.8	3.8	25.0	40.9	7.2	2.2	14.8					
Gas Company														
Towngas China	HKD	3.8	(1.0)	(3.3)	3.5	12.1	(26.8)	(38.0)	(26.7)	1,455	8.0	7.0	0.6 0.5	9.0 8.0
Kulun	HKD	5.6	0.4	(6.1)	8.6	23.1	(18.5)	(24.2)	(19.3)	6,199	7.0	6.0	0.8 0.7	4.0 4.0
Beijing Enterprise	HKD	27.6	2.0	(0.7)	0.7	3.0	(26.3)	(29.6)	(22.8)	4,493	4.0	4.0	0.4 0.4	9.0 9.0
ENN Energy	HKD	92.1	(0.3)	(0.2)	0.3	15.0	(0.9)	18.5	8.1	13,369	15.0	14.0	3.0 2.6	10.0 9.0
China Resources Gas	HKD	38.6	(2.3)	0.8	(5.7)	(7.0)	(11.2)	1.3	(9.9)	11,507	16.0	14.0	2.7 2.4	9.0 8.0
China Gas Holdings	HKD	23.8	(1.5)	(5.6)	(15.8)	(1.2)	(24.0)	(23.9)	(18.7)	15,988	11.0	10.0	2.5 2.1	10.0 9.0
Shenzen Gas	HKD	13.0	1.1	(3.1)	0.0	(5.7)	(25.2)	(14.8)	(20.8)	3,674	9.0	7.0	0.8 0.8	6.0 7.0
Shaan Xi	CNY	6.9	3.9	(0.6)	12.0	16.1	(3.1)	(12.3)	(3.6)	1,100	16.0	15.0	- -	- -
Suntien	HKD	2.2	0.9	(19.6)	14.5	19.5	(5.6)	3.3	(1.8)	3,928	5.0	5.0	0.6 0.5	13.0 12.0
China Oil & Gas	HKD	0.2	1.7	(5.5)	0.4	(3.2)	(16.9)	(34.9)	(22.3)	179	-	-	- -	- -
Average			0.5	(4.4)	1.9	7.2	(15.8)	(15.5)	(13.8)					
EV														
LG화학	KRW	511,000	(1.0)	(6.6)	(0.2)	45.4	44.4	41.4	60.9	29,996	46.0	26.0	2.2 2.0	12.0 9.0
삼성SDI	KRW	378,500	(1.3)	(3.9)	(1.7)	33.7	37.4	56.4	60.4	21,643	50.0	26.0	2.1 1.9	18.0 13.0
Panasonic	JPY	1014.0	(0.5)	1.8	5.7	29.9	(8.9)	10.5	(1.5)	23,193	18.0	12.0	1.1 1.1	7.0 6.0
GS Yuasa	JPY	1869.0	(0.4)	1.9	3.1	31.7	(21.2)	(8.8)	(21.0)	1,441	12.0	11.0	0.8 0.7	6.0 5.0
NEC	JPY	5790.0	2.3	0.3	15.8	36.2	17.3	32.6	28.1	14,727	18.0	15.0	1.5 1.4	8.0 7.0
CATL	CNY	205.3	4.9	(8.4)	23.7	52.6	66.6	183.2	93.0	64,884	91.0	68.0	9.6 8.5	43.0 32.0
GuoXuan	CNY	27.3	2.1	(17.2)	(7.0)	20.9	32.0	112.5	87.6	4,682	79.0	63.0	3.0 3.0	28.0 25.0
Wanxiang	CNY	5.6	10.0	1.6	13.6	9.6	(10.1)	(5.7)	4.5	2,212	-	-	- -	- -
BYD Auto	CNY	87.2	6.8	(11.0)	30.1	48.1	48.3	61.6	82.9	31,774	89.0	73.0	4.1 5.0	19.0 18.0
Tesla Motors	USD	1643.0	9.5	9.7	64.2	120.1	221.8	536.4	292.8	304,794	339.0	137.0	29.8 21.9	81.0 54.0
Geely	CNY	16.1	1.4	(15.4)	28.8	37.5	8.6	32.1	5.8	20,406	17.0	13.0	2.2 1.9	10.0 9.0
NIO	CNY	12.8	15.6	(7.4)	74.7	301.9	174.5	280.4	218.9	15,323	-	-	- -	- -
Average			4.1	(4.5)	20.9	64.0	50.9	95.7	76.0					

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임