

NAPHTHA

- Asia naphtha prices rally on firmer crude
- Refining margins narrow but improve from Jan
- East-West spread remains in negative territory

LPG

- QSPSP releases Apr. loading acceptances with delays
- Iran LPG Feb. export hits 800kt
- FPCC secures H2 Apr. delivery LPG lot

GASOLINE

- Gasoline demand looks to pick up ahead of Ramadan festival
- Asia to Europe arbitrage closes amid weaker EBOB

Naphtha (\$/mt)	LOW	HIGH	MEAN	CHANGE	PREM/DISC
CFR Japan	724.25	725.25	724.750	2.250	20.000
FOB Arab Gulf LR1	676.28	677.28	676.778	2.442	44.000

Naphtha (\$/bbl)	LOW	HIGH	MEAN	CHANGE	PREM/DISC
FOB Singapore	77.98	78.08	78.029	0.250	--

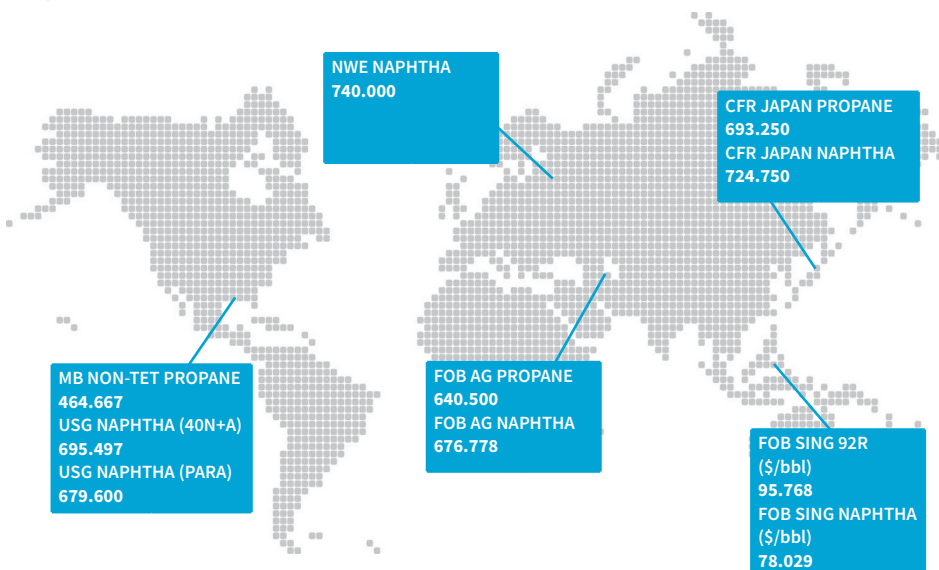
LPG (\$/mt)	LOW	HIGH	MEAN	CHANGE	PREM/DISC
CFR Japan Propane	692.75	693.75	693.250	-3.000	--
CFR South China Propane	713.25	714.25	713.750	-3.500	--
FOB Arab Gulf Propane	640.00	641.00	640.500	6.000	-7.500
FOB Arab Gulf Butane	648.00	649.00	648.500	4.000	-7.500

FOB Singapore (\$/bbl)	LOW	HIGH	MEAN	CHANGE	PREM/DISC
92-RON	95.72	95.82	95.768	1.097	-0.088
95-RON	99.45	99.55	99.495	0.854	0.118
97-RON	102.08	102.18	102.129	0.855	--

Market News Headlines

- Vietnam's LSP To Start Up Olefins Plant By Mid-2023
- Japan's Idemitsu Kosan To Run Crackers At Above 90% Capacity In March
- CNPC's Ramps Jieyang PX Plant Run Rate To 70-75%...(See more from page 8)

Key Prices (\$/mt)



16:30 SINGAPORE BRENT MARKER (\$/bbl)

MONTH	PRICE	CHANGE
May	84.59	0.57
June	83.93	0.54
July	83.40	0.53

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NAPHTHA

Naphtha prices rally despite soft demand for supplies

Asia naphtha tracked crude higher on Friday, advancing 0.31% on day to \$724.75/mt. Brent gained 0.68% in the same period and settled at \$84.59/bbl at the 4.30 p.m. Singapore close.

CFR Japan naphtha crack to Brent narrowed to \$90.33/mt from its prior \$92.35/mt as gains in Brent outpaced that of naphtha. Refining margins have improved month-on-month, widening from an average of \$54.57/mt in January to \$84.30/mt in February, according to OPIS data.

No deals were concluded in the afternoon trading session as liquidity remained weak. No bids and offers were heard. Despite the lull in the paper market, the front month CFR Japan naphtha swap rose \$5/mt on day to \$711/mt.

The front month East-West spread receded to minus \$4/mt as European naphtha continued to outperform Asia naphtha. The spread flipped into the negative territory on Jan. 19, according to OPIS data, as Asia naphtha edged lower against its European counterpart.

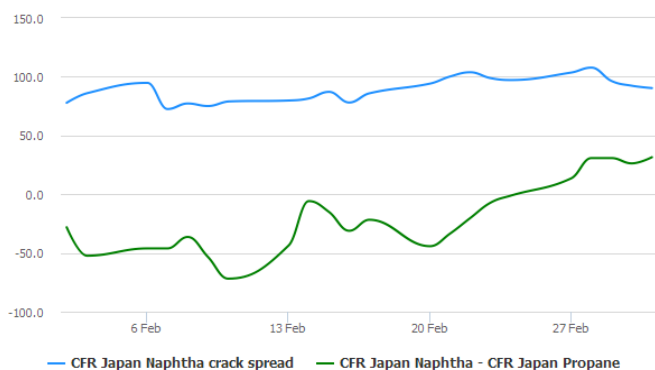
Market activity was weighed down by muted spot demand this week. No new CFR requirements were heard on Friday.

The H2 April/H2 May open spec naphtha (OSN) spread was held in backwardation at \$16.50/mt, unchanged from the previous day.

An absence of spot buyers for the H2 April delivery laycan squeezed the market slightly as the inter-month OSN backwardation sagged from \$19.50/mt in the past week.

(To be continued on page 8)

30 DAYS CFR JAPAN NAPHTHA SPREADS (\$/mt)



CFR JAPAN OPEN SPEC NAPHTHA (\$/mt)

LAYCAN	LOW	HIGH	MEAN	CHANGE
H2 Apr	737.00	738.00	737.500	2.250
H1 May	728.00	729.00	728.500	2.250
H2 May	720.50	721.50	721.000	2.250

SPOT PHYSICAL NAPHTHA (\$/mt)

MARKET	LOW	HIGH	MEAN	CHANGE	PREM/DISC
CFR Japan	724.25	725.25	724.750	2.250	20.000
CFR Korea (Daesan-basis)	722.25	723.25	722.750	2.250	18.000
FOB Singapore (\$/bbl)	77.98	78.08	78.029	0.250	--
FOB Arab Gulf LR1	676.28	677.28	676.778	2.442	44.000
FOB Arab Gulf LR2	676.82	677.82	677.316	1.774	--

CFR JAPAN NAPHTHA SWAPS (\$/mt)

MONTH	LOW	HIGH	MEAN	CHANGE
Apr	710.50	711.50	711.000	5.000
May	699.50	700.50	700.000	5.000
Jun	689.75	690.75	690.250	5.500

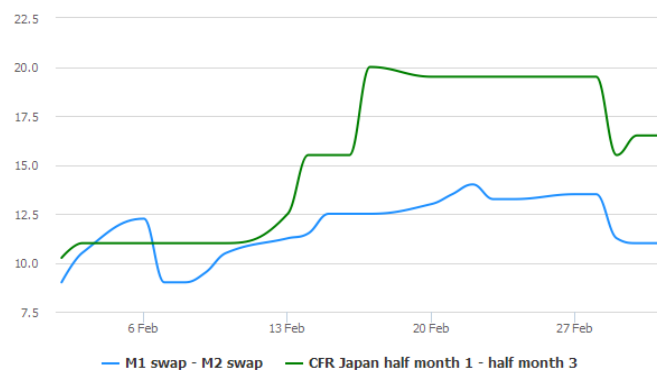
NAPHTHA EAST-WEST SPREADS (\$/mt)

MONTH	LOW	HIGH	MEAN	CHANGE
Apr	-4.50	-3.50	-4.000	-2.000
May	-1.75	-0.75	-1.250	-1.250
Jun	-0.25	0.75	0.250	-0.750

FOB SINGAPORE NAPHTHA SWAPS (\$/bbl)

MONTH	LOW	HIGH	MEAN	CHANGE
Mar	77.62	77.72	77.670	0.340
Apr	75.93	76.03	75.980	0.330
May	74.54	74.64	74.590	0.280

30 DAYS CFR JAPAN NAPHTHA TIME SPREADS (\$/mt)



LPG

QPSPP April-loading acceptances met with some delays, no cuts or cancellations

Asian LPG eased on Friday despite slight lift on paper swap prices and crude price.

The afternoon online trading was largely muted, no bids/offers or transactions had taken place after the market closed.

The front month Mar./Apr. Far East propane swap narrowed \$5/mt to at a backwardation of \$23/mt.

Qatar’s QPSPP had released its acceptances for April-loading term cargoes and some delays were heard, according to market sources.

Market participants believe that the delays were prompted by term buyers’ nominations being focused around H1 April loading.

“Some of the delays were not exactly major, maybe pushed back by around 1 week,” according to a Singapore-based trader.

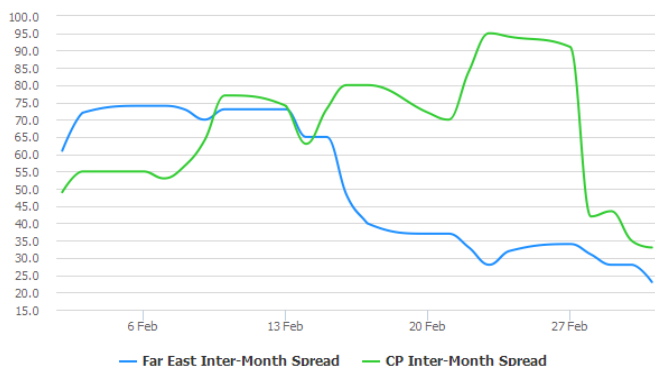
It was understood that no cuts or cancellations were included in the acceptances, market sources added.

Abu Dhabi National Oil Co. (ADNOC) and Saudi Aramco were due to release their acceptances for April-loading term cargoes in the following weeks, but most market participants believe that supply from both Mideast suppliers will most likely observe no cuts or cancellations.

“Both ADNOC and Saudi Aramco are due to complete their respective scheduled maintenances at their respective loading terminals by H1 March, so supply will likely return to normal,” a Singapore-based industry source said.

(To be continued on page 8)

30 DAYS PRICE FOR PROPANE SPREADS (\$/mt)



CFR (\$/mt)

PROPANE	LOW	HIGH	MEAN	CHANGE
CFR Japan	692.75	693.75	693.250	-3.000
CFR South China	713.25	714.25	713.750	-3.500
BUTANE	LOW	HIGH	MEAN	CHANGE
CFR Japan	700.75	701.75	701.250	-5.000
CFR South China	721.25	722.25	721.750	-5.500
LPG (11:11)	LOW	HIGH	MEAN	CHANGE
CFR Japan	696.75	697.75	697.250	-4.000
CFR South China	717.25	718.25	717.750	-4.500

FOB (\$/mt)

ARAB GULF	LOW	HIGH	MEAN	CHANGE	PREM/DISC
Propane	640.00	641.00	640.500	6.000	-7.500
Butane	648.00	649.00	648.500	4.000	-7.500

FAR EAST PROPANE (\$/mt)

LAYCAN	LOW	HIGH	MEAN	CHANGE	PREM/DISC
H2 Mar	702.50	703.50	703.000	-18.000	35.000
H1 Apr	689.50	690.50	690.000	5.000	45.000
H2 Apr	672.50	673.50	673.000	7.000	28.000

FAR EAST LPG (11:11) (\$/mt)

LAYCAN	LOW	HIGH	MEAN	CHANGE	PREM/DISC
H2 Mar	706.50	707.50	707.000	-19.000	39.000
H1 Apr	693.50	694.50	694.000	4.000	49.000
H2 Apr	676.50	677.50	677.000	6.000	32.000

FAR EAST PROPANE SWAPS (\$/mt)

MONTH	LOW	HIGH	MEAN	CHANGE
Mar	667.50	668.50	668.000	2.000
Apr	644.50	645.50	645.000	7.000
May	626.50	627.50	627.000	6.000

CP PROPANE SWAPS (\$/mt)

MONTH	LOW	HIGH	MEAN	CHANGE
Apr	647.50	648.50	648.000	6.000
May	614.50	615.50	615.000	8.000
Jun	591.50	592.50	592.000	7.000

PROPANE/BUTANE CP SWAP DIFFERENTIAL (\$/mt)

MONTH	LOW	HIGH	MEAN	CHANGE
Apr	-8.50	-7.50	-8.000	2.000

SAUDI ARAMCO LPG CONTRACT PRICE (\$/mt)

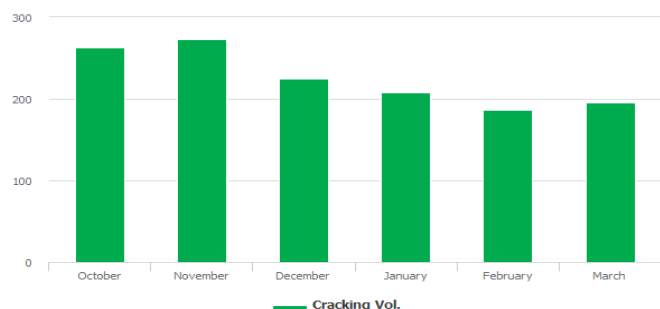
MONTH	PROPANE	CHANGE	BUTANE	CHANGE
Mar	720.000	-70.000	740.000	-50.000

SONATRACH LPG CONTRACT PRICE (\$/mt)

MONTH	PROPANE	CHANGE	BUTANE	CHANGE
Mar	640.000	-80.000	690.000	50.000

LPG Cracking Survey

LPG CRACKING VOLUME ('000mt)

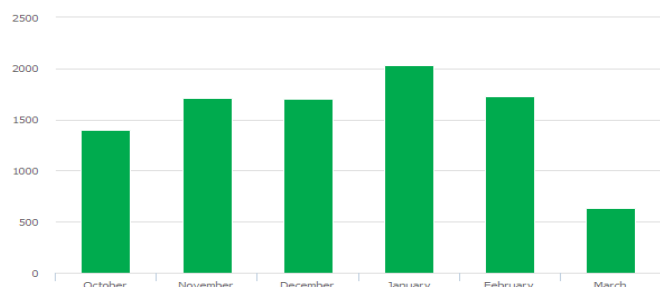


CFR PROPANE, LPG/CFR NAPHTHA RATIO (%)

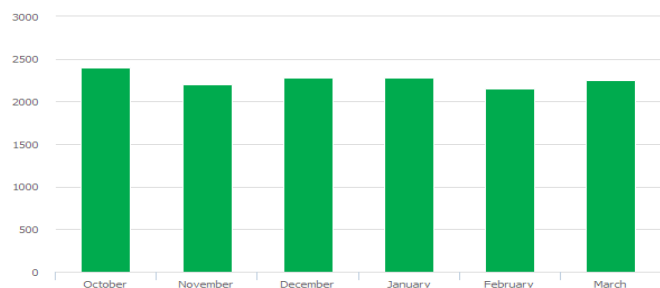
LAYCAN	PRO/NAP	CHANGE	LPG/NAP	CHANGE
1st Half Month	95.322	-2.740	95.864	-2.878
2nd Half Month	94.715	0.395	95.264	0.255
3rd Half Month	93.343	0.682	93.897	0.540

Arb Economics

NAPHTHA NWE/MED ARBITRAGE VOLUME ('000mt)



US-ASIA LPG VOLUME ('000mt)

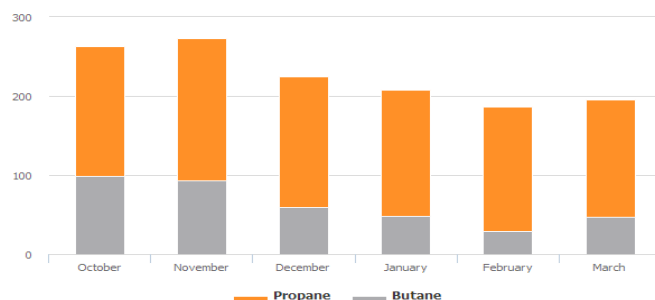


FREIGHT RATES (\$/mt)

ROUTE	PRODUCT	PRICE
Sing-Japan	Naphtha	27.91
AG-Japan LR 1	Naphtha	47.97
AG-Japan LR 2	Naphtha	47.43
Houston - Chiba (via Panama)	LPG	156.45
Houston - South China	LPG	177.05
Middle East Gulf - Japan	LPG	102.60
Middle East Gulf - South China	LPG	82.05

- China ethylene prices rose 4.3% week-to-week at the week ended on Mar 3 to \$950-1,000/mt: OPIS CMA
- Chinese cracker operating rates projected to be 92.4% in Feb and 87.8% in Mar: OPIS CMA
- Japan's Idemitsu Kosan to run crackers at above 90% capacity in March (Read more in Market News)

PROPANE/BUTANE CRACKING VOLUME ('000mt)



*Based on participants who provide C3/C4 breakdown. Total volumes differ from LPG Cracking Survey.

- Benchmark Med to Far East freight fell for a third consecutive day to \$49.90/mt
- Front month East-West spread receded by \$2/mt on day to minus \$4/mt despite a slight uptick across Asia naphtha prices
- The gasoline/naphtha spread for the same month narrowed by \$3/mt to \$84/mt as the outright gasoline for March ended lower on Thursday (OPIS Europe)
- Notional netbacks to Asia for H1 and H2 Apr fell by 0.5cts/gal and 0.75cts/gal to 9.75cts/gal and 7.875cts/gal, per OPIS NA
- Houston-Chiba freight rates eased by 50cts/mt to \$156.50/mt, per OPIS NA
- Waiting time at the Panama Canal up 1 day both ways to 11 days for northbound vessels and 15 days for southbound vessels

PROPANE SPOT CARGO FLOW ECONOMICS (\$/mt)

PROPANE	MONTH	LOW	HIGH	MEAN	CHANGE
Mont Belvieu Swap	Mar	471.04	472.03	471.510	13.395
	Apr	464.47	465.51	464.993	15.995
	May	462.54	463.53	463.044	25.769
Diff to Far East	Mar	-196.99	-195.99	-196.490	11.395
	Apr	-180.51	-179.51	-180.008	8.994
	May	-164.46	-163.46	-163.956	19.769
USGC FOB Resale Diff	H1 Apr	36.47	46.89	41.680	0.000
	H2 Apr	36.47	46.89	41.680	0.000

GASOLINE

Upcoming holidays to support Southeast Asian demand

Singapore 92, 95 and 97 RON cracks rebounded by \$0.284-\$0.527/bbl to plus \$11.178/bbl, plus \$14.905/bbl and plus \$17.539/bbl, respectively.

Spot prices of all three gasoline grades, 92, 95 and 97 RON, rose \$0.854-\$1.097/bbl to \$95.768/bbl, \$99.495/bbl and \$102.129/bbl.

Spot differentials for 92 RON rose \$0.293/bbl to minus \$0.088/bbl while that for 95 RON eased \$0.495/bbl to plus \$0.118/bbl.

Fresh tenders are absent in the market as trade discussions have moved to April loading, sources said.

Gasoline demand in the Southeast Asian regions is expected to be supported by the Ramadan, followed by the Eid al-Fitr celebrations from late-March to late-April.

In Indonesia, Pertamina was said to be planning to increase gasoline imports in March, according to trade sources.

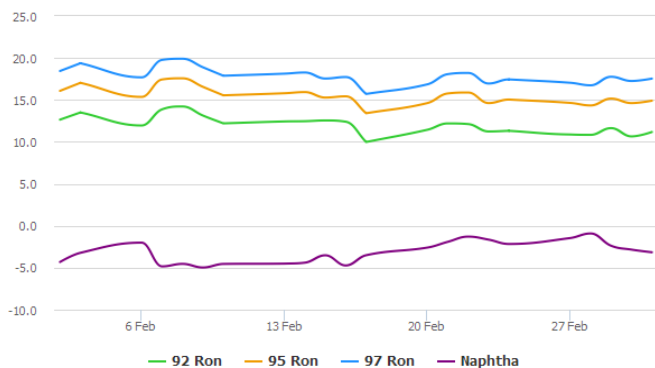
The refiner may import up to 11 million bbl of gasoline in March, an increase from 7.5-10 million per month in the second half of 2022, source said.

Meanwhile, gasoline crack remained weighed with a sentiment of oversupply in the market, according to trade sources and OPIS data.

The average 92 RON refining margins for the week to March 3 fell to plus \$11.036/bbl, compared to an average of plus \$11.662/bbl in the week prior, OPIS data showed.

(To be continued on page 8)

30 DAY GASOLINE AND NAPHTHA CRACK SPREADS (\$/bbl)



FOB SINGAPORE (\$/bbl)

PRODUCT	LOW	HIGH	MEAN	CHANGE	PREM/DISC
92-RON	95.72	95.82	95.768	1.097	-0.088
95-RON	99.45	99.55	99.495	0.854	0.118
97-RON	102.08	102.18	102.129	0.855	--

FOB ARAB GULF (\$/bbl)

PRODUCT	LOW	HIGH	MEAN	CHANGE	PREM/DISC
92-RON	91.61	91.71	91.655	1.256	9.150
95-RON	95.33	95.43	95.382	1.013	9.700

SINGAPORE 92 RON GASOLINE SWAP (\$/bbl)

MONTH	LOW	HIGH	MEAN	CHANGE
Mar	96.05	96.15	96.100	0.850
Apr	95.25	95.35	95.300	0.750
May	93.96	94.06	94.010	0.790

SINGAPORE 95 RON GASOLINE SWAP (\$/bbl)

MONTH	LOW	HIGH	MEAN	CHANGE
Mar	99.48	99.58	99.530	1.080
Apr	98.98	99.08	99.030	2.070
May	97.68	97.78	97.730	2.190

GASOLINE CRACK SPREADS (\$/bbl)

PRODUCT	LOW	HIGH	MEAN	CHANGE
92-RON	11.13	11.23	11.178	0.527
95-RON	14.86	14.96	14.905	0.284
97-RON	17.49	17.59	17.539	0.285

GASOLINE REFORMING SPREADS (\$/bbl)

PRODUCT	LOW	HIGH	MEAN	CHANGE
92-RON	17.69	17.79	17.739	0.847
95-RON	21.42	21.52	21.466	0.604
97-RON	24.05	24.15	24.100	0.605

30 DAY GASOLINE REFORMING SPREADS (\$/bbl)



TENDERS

ISSUER	DETAILS	INCO/PORT	TIMING	CLOSING DATE	VALIDITY DATE
SOMO	Sell 60-85kt per month full range naphtha	FOB/Al Zubair	Apr. 1 to Sep. 30	23-Feb-2023	13-Mar-2023
Chinagas	Buy 3x23kt propane	DES/Taixing	Apr. 11-25, May 1-10 and/or May 11-25	1-Mar-2023	3-Mar-2023
Ceypetco	Buy 300,000 bbl of 92 RON	DAP/Colombo	Apr. 2-3	28-Feb-2023	3-Mar-2023
Pertamina	Buy 100,000 bbl of 98 RON	FOB/Straits or CFR/Jakarta/Tg Uban	FOB/Mar. 29-31 or CFR/Apr. 2-4	2-Mar-2023	3-Mar-2023
Ceypetco	Buy 300,000 bbl of 92 RON	DAP/Colombo	Apr. 17-18	14-Mar-2023	17-Mar-2023

SHIPPING FIXTURES

VESSEL NAME	SIZE (kt)	CARGO	LOADING DATE	EST. DEL. PERIOD	ROUTE	CHARTERER
NS DREAM	44	LPG	Mar. 11-12	H1 Apr.	AG/India or East	RELIANCE
GALAXY RIVER	44	LPG	Apr. 6-7	H1 May	USGC/East	RESPOL
CAPTAIN JOHN NP	44	LPG	Mar. 29-30	H2 Apr.	AG/East	VITOL
ASHLEY LADY	90	UMS	Early-March	H2 Mar.	Fuj/Sohar	ATC
ORIENT INNOVATION	35	UMS	Mar. 5	H2 Mar.	Gizan/Fuj	ATF
DAI PHU	35	UMS+GO	Mar. 6	H2 Mar.	Spore/Tricomalee	SAHARA
PACIFIX DEBBIE	60	UMS	Mar. 6	H2 Mar.	Sikka/Sohar	OQ
NORDEN TBN	35	UMS	Mar. 6	H2 Mar.	Chiba/Spore-Phil	SHELL
NH SIRI	35	UMS	Mar. 7	H2 Mar.	Chiba/Phil-Spore-Opts	SHELL
C.H.FENG CAI	35	UMS+JET	Mar. 7	H2 Mar.	SKorea/OZ	AMPOL
NH ERLE	35	UMS	Mar. 7	H2 Mar.	Chiba/Phil-Spore	SHELL
NAVIG8 GUNTLET	35	UMS	Mar. 7	H2 Mar.	Japan/Spore-OZ	VITOL
UOG AEPLOS	60	UMS	Mar. 8	H2 Mar./H1 Apr.	Sikka/UKC	RIL
ALPINE PERSFONE	60	UMS	Mar. 8	H2 Mar.	Yanbu/Jeddah	ATC
STI GRAMERCY	35	MTBE	Mar. 8	H2 Mar.	Ras Laffan/J.Ali-Fuj-Pak-Suez-EAfr-EMed	CSSSA
TBN	35	UMS	Mar. 10	H2 Mar.	Huizhou/Spore	MERCURIA
BW TIGER	35	UMS	Mar. 11	H2 Mar./H1 Apr.	Mailiao/USWC-SKorea-Jpn	P66
RIVIERA II	35	UMS	Mar. 12	H1/H2 Apr.	North/Wcmex	PMI
GEMINI PEARL	35	UMS	Mar. 13	H1 Apr.	Japan/Spore	SINOPEC

REFINERY MAINTENANCE

REFINERY	LOCATION	CAPACITY	START DATE	PERIOD	DETAILS
CNOOC	Huizhou, China	440,000 b/d	Mar. 2023	50 days	one 240,000 b/d CDU
Hengyi Industries	Pulau Muara Besar, Brunei	160,000 b/d	Mar/Apr. 2023	30-45 days	Full shutdown- 160,000 b/d CDU, 44,000 b/d hydrocracker, 66,000 b/d reformer, 70,000 b/d hydrotreater, 14,000 b/d isomerization unit
Reliance Industries	SEZ Jamnagar, India	580,000 b/d	Mar. 2023	30 days	Shutdown of a CDU and a RFCC unit
GS Caltex	Yeosu, South Korea	800,000 b/d	Mar. 2023	60 days	Shutdown of a RFCC unit (planned maintenance) and 180,000 b/d CDU No. 3
Dung Quat Oil Refinery	Binh Son, Vietnam	148,000 b/d	June 22, 2023	50 days	Full shutdown- 148,000 b/d CDU, 70,000 b/d catalytic cracker, 21,000 b/d reformer, 126,000 b/d hydrotreater and 65,000 b/d isomerization
Formosa Petrochemical	Mailiao, Taiwan	540,000 b/d	Mar 2023	40 -60 days	Shutdown of 156,000 b/d CDU no. 2 , 80,500 b/d No .1 RDS and 76,000 b/d No. 1 RFCC
Toa Oil	Kawasaki, Japan	70,000 b/d	Jan 2023	60-70 days	Shutdown of 70,000 b/d CDU
ENEOS	Chiba, Japan	129,000 b/d	Mar 2023	30 days	Shutdown of CDU
Nghi Son Refinery and Petrochemicals	Thanh Hoa, Vietnam	200,000 b/d	Feb 2023	50 days	Full shutdown- 200,000 b/d CDU, 80,000b/d FCC, 105,000 b/d hydrotreater
Idemitsu Kosan	Chiba, Japan	190,000 b/d	end Apr. 2023	60 days	Complete turnaround

CRACKER/PDH MAINTENANCE

CRACKER/PDH	LOCATION	ETHYLENE CAP	PROPYLENE CAP	START DATE	PERIOD	DETAILS
FPCC No. 2	Mailiao, Taiwan	1.035 million mt/y	518,000 mt/y	Jul. 2022	Feb. 2023	FPCC to keep No.2 cracker offline in Mar.
Lotte Chemical No. 1	Daesan, South Korea	1.1 million mt/y	550,000 mt/y	Early Dec. 2022	End-Jan. 2023	Lotte Chemical to run cracker at 90% in Mar, up from 82% in Feb.

CRACKER/PDH	LOCATION	ETHYLENE CAP	PROPYLENE CAP	START DATE	PERIOD	DETAILS
CPC No. 3	Lin Yuan, Taiwan	720,000 mt/y	370,000 mt/y	Jan. 20	Feb. 12	Scheduled maintenance. CPC No. 3 to run at 85% in Feb.
PTT I4-2	Rayong, Thailand	400,000 mt/y	(No propylene)	Early-Feb	-	Scheduled maintenance.
YNCC No. 2	Yeosu, South Korea	930,000 mt/y	455,000 mt/y	-	-	YNCC No. 2 to run at full capacity in Feb.
YNCC No. 3	Yeosu, South Korea	470,000 mt/y	240,000 mt/y	Jan	Feb	YNCC No. 3 to be kept offline until end of Feb.
ExxonMobil	Pulau Ayer Chawan, Singapore	875,000 mt/y	476,000 mt/y	Mid-Feb	2 months	Scheduled maintenance.
ZRCC II	Ningxia, Mainland China	1.2 million mt/y	600,000 mt/y	Feb. 28	2.5 months	Scheduled maintenance.
Hyundai Chemical	Daesan, South Korea	850,000 mt/y	450,000 mt/y	Feb	End June	Scheduled maintenance.
IRPC	Rayong, Thailand	360,000 mt/y	180,000 mt/y	Feb	2 months	Scheduled maintenance.
JG Summit	Batangas, Philippines	480,000 mt/y	240,000 mt/y	Feb	End-Apr. 2023	Cracker shut down on poor downstream margins.
Lotte Chemical No. 2	Yeosu, South Korea	1.2 million mt/y	620,000 mt/y	Mar. 10	30 days	Scheduled maintenance.
Idemitsu Kosan	Chiba, Japan	414,000 mt/y	224,000 mt/y	Q2 2023	-	Scheduled maintenance. Idemitsu Kosan to run at above 90% in Mar.
LG Chemical	Yeosu, South Korea	800,000 mt/y	400,000 mt/y	Early Apr	50 days	Scheduled maintenance. LG Chem to run at 65% in Feb.
Idemitsu Kosan	Tokuyama, Japan	689,000 mt/y	255,000 mt/y	Apr. 10	45 days	Scheduled maintenance. Idemitsu Kosan to run at above 90% in Mar.
Hanwha Total PC	Daesan, South Korea	1.505 million mt/y	810,000 mt/y	Apr. 26	6-7 weeks	Scheduled maintenance. HTC to run at 90% in Feb.
YNCC No. 1	Yeosu, South Korea	900,000 mt/y	450,000 mt/y	Apr. 21	Jun. 13	Scheduled maintenance. YNCC No. 1 to run at full capacity in Feb.
Secco	Shanghai, Mainland China	1.2 million mt/y	600,000 mt/y	Mid-May	2 months	Scheduled maintenance.
Asahi Kasei Mitsubishi Chem.	Mizushima, Japan	570,000 mt/y	336,000 mt/y	May. 15	25 days	Scheduled maintenance. AMEC to run cracker at 90-95% capacity in Feb till turnaround in May.
Chandra Asri	Cilegon, Indonesia	900,000 mt/y	490,000 mt/y	Jun	-	Scheduled maintenance has not been finalized.
Mitsui Chemicals	Chiba, Japan	612,000 mt/y	316,000 mt/y	Jun. 20	50 days	Scheduled maintenance.
Sinopec Maoming PC No. 1	Guangdong, Mainland China	380,000 mt/y	190,000 mt/y	Jun. 20	3 weeks	Scheduled maintenance.
PTTGC I4-1	Rayong, Thailand	515,000 mt/y	310,000 mt/y	end Q2/early Q3	15 days	Scheduled maintenance.
Petrochemical Corp. of Singapore	Jurong, Singapore	465,000 mt/y	270,000 mt/y	Mid-Jul. 2023	40 days	Scheduled maintenance. PCS to run cracker at 70% capacity in Feb.
CPC No. 4	Lin Yuan, Taiwan	385,000 mt/y	180,000 mt/y	Jul	60 days	Scheduled maintenance. CPC No. 4 to run at 95% in Feb.
Zhongyuan PC	Henan, Mainland China	200,000 mt/y	100,000 mt/y	Aug. 1	10 days	Scheduled maintenance.
FPCC No. 3	Mai Liao, Taiwan	1.2 million mt/y	600,000 mt/y	Early-Aug	50 days	Scheduled maintenance. FPCC No. 3 to run at full capacity in Feb.
PTTGC I-1	Rayong, Thailand	463,000 mt/y	250,000 mt/y	Aug	-	Scheduled maintenance.
Wanhua PC	Shangdong, Mainland China	1 million mt/y	520,000 mt/y	Sep	1 month	Scheduled maintenance.
SK Geocentric No. 2	Ulsan, South Korea	670,000 mt/y	370,000 mt/y	Oct. 12	40 days	Scheduled maintenance.
FPCC No. 1	Mai Liao, Taiwan	700,000 mt/y	350,000 mt/y	Q3 2023	-	Scheduled maintenance. FPCC No. 1 to run at full capacity in Feb.
KPIC	Onsan, South Korea	900,000 mt/y	110,000 mt/y	Feb. 2023	-	KPIC to run cracker at 70% capacity in Feb.
Shenghong Petrochemical	Lianyungang, east China	1.4 million mt/y	700,000 mt/y	Early Dec. 2022	-	Shenghong has attained on-spec output after starting up cracker in early December.
CNPC Jieyang	Guangdong, south China	1.2 million mt/y	600,000 mt/y	Feb. 12	-	New cracker, can feed ethane, propane, naphtha.
Sinopec Hainan Refining & Chem.	Hainan, south China	1 million mt/y	530,000 mt/y	Feb. 21	-	New cracker, can feed naphtha, gasoil and residues.
Wanda Tianhong	Dongying, north China	-	250,000 mt/y	Jun. 2023	-	New PDH plant.
Shandong Huifeng	Shandong, north China	-	250,000 mt/y	End-Jul. 2022	-	New PDH plant. Delayed from original schedule of Oct. 2021. In the process of feeding in.
Liaoning Kingfa	Panjin, north China	-	600,000 mt/y	End-Sep. 2022	-	New PDH plant.
Jiangsu Ruiheng	Lianyungang, east China	-	600,000 mt/y	Oct. 2022	-	New PDH plant.
Sanjiang Chemical	Jiaxing, east China	1 million mt/y	500,000 mt/y	Q4 2022	-	New cracker.
Yanchang Chinagas	Jiangsu, east China	-	600,000 mt/y	Q4 2022	-	Construction of new PDH plant has been completed, unit ready to begin trial run.
Grand Resource	Dongguan, south China	-	600,000 mt/y	Q4 2022	-	New PDH plant.
Befar Group	Binzhou, north China	-	600,000 mt/y	Q4 2022	-	New PDH plant. Completed construction end-July.
Formosa Plastics	Ningbo, east China	-	600,000 mt/y	Jul. 2023 (estimate)	-	New PDH plant. Postponed from late-2021 to Oct. 2022. Likely to postpone further to 2023.

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volume for February has hit the 800,000 mt-mark, according to a Singapore-based analyst.

Monthly LPG export volumes for Iran has averaged around 700,000 mt and most of the cargo is typically absorbed into the Chinese market, the same analyst added.

The rise in export volume over February was most likely prompted by increase in Chinese buyers because LPG prices were considered high over February, and Chinese buyers were prompted to seek supply from alternative sources, according to the Singapore-based analyst.

Formosa Petrochemical Corp. (FPCC), meanwhile, was heard to have likely bought a 46,000 mt LPG cargo for H2 April delivery into Mailiao at around low-\$40s/mt discount to the April Japan naphtha quote, market sources said.

But the it remained unclear whether the Taiwanese buyer had secured a full propane cargo or whether it was a 22:22 or 33:11 split cargo, market sources added.

The cargo sought was to be used for refinery consumption and not for cracking, as reported earlier.

The Taiwanese importer was last known to have bought 44,000 mt of evenly-split LPG for Feb. 1-10 delivery into Mailiao at around high-\$10s/mt discount to the February Japan naphtha quote, OPIS data showed.

(Gasoline commentary continued from page 5)

At the same time, 92 RON cargo differentials in the same week fell to an average of plus \$0.171/bbl compared to an average of plus \$0.557/bbl in the previous week, according to OPIS data.

The East Asia to Europe arbitrage windows seems to have closed as EBOB prices fell in the past week.

The EBOB and Asia 92 RON spot spread for the week to March 3 averaged at plus \$1.229/bbl, OPIS data showed. A negative value indicates that cargo flows to the East is more profitable and an arbitrage may be workable.

Vietnam's LSP To Start Up Olefins Plant By Mid-2023

Vietnam's Long Son Petrochemicals (LSP) will start up its olefins and polyolefins plant by mid-2023, a source close to the company said on March 3.

(Naphtha commentary continued from page 2)

In Northeast Asia excluding China, the total cracker capacity loss from scheduled and unplanned outages is expected to increase from 21.2% in March to 25% in April and 29.2% in May, CMA by OPIS data shows.

While ethylene production margins have risen, the naphtha-ethylene spread remains under the typical breakeven margin of \$250/mt for integrated producers.

The CFR Northeast Asia ethylene spread to CFR Japan naphtha was assessed at \$219/mt on Feb. 24, up from \$174/mt a month ago, according to OPIS data.

In Southeast Asia, total cracker capacity loss is projected to peak at 30% in March before tapering down to 24.4% in April and 14.3% in May, according to CMA by OPIS.

(LPG commentary continued from page 3)

In Iran, it was heard that the liquefied petroleum gas (LPG) export

LSP has an annual capacity of 1.35 million metric tons (mt) per year of olefins, and 1.4 million mt/year of polyolefins, LSP's parent company, Thailand's Siam Cement Group (SCG), said in a Nov. 26 statement last year.

The plant had started operating support units like a specialized tank terminal and a central utilities plant, comprising hydrocarbon jetties, tank farms, and central utilities, SCG said in the statement.

SCG started constructing this facility in February 2018, OPIS reported.

LSP primarily takes either naphtha or propane as feedstock, according to the source close to the company.

"When the plant is fully operational, LSP will likely be importing at least a half or full cargo of propane on a monthly basis depending on production economics," the same source said.

According to Vietnam's Ministry of Planning and Investment through its Vietnam Investment Review (VIR) portal, authorities in Vietnam considered LSP's construction to be behind schedule as of 2020 and had urged SCG to accelerate construction.

The \$5.4 billion LSP project in Ba Ria-Vung Tao province has been delayed for more than 10 years, despite being positioned as Vietnam's first integrated petrochemical complex.

Initiated by PetroVietnam in 2008, SCG, Qatar Petroleum International, and state-run chemical group Vinachem had stakes in LSP the project, which was supposed to provide olefins capacities in polyethylene (PE) and polypropylene (PP) to displace imported polyolefins, according to the VIR.

The partnership was abandoned, with SCP eventually taking over LSP.

SCP is already planning to increase production at the same site by debottlenecking and adding a phase 2 expansion, according to Thai broadsheet The Bangkok Post in February 2022.

LSP will be able to produce around 500,000 metric tons (mt) per year of ethylene in 2023, and up to 1 million mt/year by 2024 when fully commissioned, according to data from Chemical Market Analytics (CMA).

CMA by OPIS is a Dow Jones company.

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Japan's Idemitsu Kosan To Run Crackers At Above 90% Capacity In March

Japan's Idemitsu Kosan plans to run its two naphtha-fed crackers in Chiba and Tokuyama at above 90% capacity in March, unchanged from February, said a source familiar with the matter.

"We are operating at a relatively higher rate than other Japanese crackers," the source added.

Cracker operating rates in northeast Asia are projected to be around 81% in March, according to Chemical Market Analytics (CMA) by OPIS. Idemitsu Kosan's relatively high run rates come ahead of planned shutdowns in the second quarter.

Its Tokuyama cracker, which has a capacity to produce 689,000 metric tons (mt) per year of ethylene and 255,000 mt/year of propylene, will be undergoing a 45-day turnaround on Apr. 10, according to CMA.

Its 414,000 mt/year Chiba cracker will likely be undergoing scheduled maintenance in the second quarter of this year but the exact date could not be confirmed. The cracking facility also has a propylene capacity of 255,000 mt/year.

Idemitsu Kosan is a spot buyer of naphtha and typically buys named origin cargoes on a private basis, according to market sources.

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CNPC's Ramps Jieyang PX Plant Run Rate To 70-75%

China's CNPC has ramped up paraxylene (PX) production rate at its new 2.6 million metric tons (mt) per year plant in Jieyang to around 70-75%, according to an industry source on March 3.

This plant has been running at 50% of capacity since starting up on Feb. 8, according to the source.

CNPC had targeted a mid-January start up for this PX plant, already a delay from its original plan to start in 2022.

The company began trial runs at its 400,000 b/d refinery in Jieyang, Guangdong, on Oct. 26, 2022.

Its petrochemical complex will include an upcoming 1.2 million mt/year cracker and derivative units, according to Chemical Market

Analytics (CMA) data.

CMA by OPIS is a Dow Jones company.

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China's Jiangsu Honggang Plans Mid-March PTA Plant Turnaround

China's Jiangsu Honggang Petrochemical plans to shut its 2.4 million metric tons (mt) per year purified terephthalic acid (PTA) plant around March 6, for a turnaround expected to last 16 to 17 days, according to a market source on March 3.

Jiangsu Honggang restarted this PTA unit recently on Jan. 20, after shutting on Jan. 13, OPIS reported.

According to OPIS records, this turnaround overlaps with shutdowns announced by fellow Chinese PTA producers Yisheng Dahua, Hengli Petrochemical and Sichuan Energy.

Hengli Petrochemical cited poor margins behind its decision to shut one of its units for a month, OPIS reported.

Jiangsu Honggang owns another PTA unit with 1.5 million mt/year of capacity at its base in Lianyungang in eastern China, but this has been off-stream since Mar. 15, 2022.

The company has another 2.4 million mt/year PTA plant upcoming in 2025, according to Chemical Market Analytics (CMA) data.

Honggang Petrochemical is part of the Shenghong Petrochemical Group.

CMA by OPIS is a Dow Jones company.

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Aramco Signs LOI with Geely, Renault to Invest in Lower-Emission Powertrain

Saudi Aramco announced on Thursday it has signed a letter of intent (LOI) to become a potential minority stakeholder in a new lower-emissions powertrain company jointly planned by automakers Geely and Renault Group, according to a news release.

The company, to be set up by the Chinese and French multinational automotive firms, will focus on developing low-emissions internal

combustion and hybrid powertrain technologies.

Aramco said its investment would support the growth of the company and contribute to key research and development across synthetic fuels solutions and next-generation hydrogen technologies. It is expected that Geely and Renault Group will retain equal equity stakes in the new independent entity.

With a global network of 17 powertrain plants and five research and development centers across three continents, the planned company is intended to be a standalone global supplier with a combined capacity of more than 5 million internal combustion, hybrid and plug-in hybrid engines and transmissions per year, supplying more than 130 countries and regions.

"This letter of intent represents a new milestone in our ongoing commitment to transportation technologies and presents a platform to support Aramco's research and development in engine innovation," Aramco Executive Vice President of Downstream Mohammed Y. Al Qahtani said in the news release.

"The proposed investment by Aramco represents recognition from global industry leaders in the powertrain technology company's future business prospects and vision for pioneering low and carbon-free fuels such as methanol and hydrogen," Geely Holding Group Chief Executive Daniel Li said.

"Aramco's entry brings to the table unique know-how that will help develop breakthrough innovations in the fields of synthetic fuels and hydrogen," Renault Group Chief Executive Luca de Meo said.

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Australian State Announces \$43 Mn in Funding For Two New Green Hydrogen Hubs

The government of New South Wales (NSW) on Friday announced \$43 million (reported as 64 million Australian dollars) in funding towards the construction of two green hydrogen hubs, as well as additional incentives to help drive down the cost of producing the fuel in the Australian state, according to a news release.

The A\$64 million in funding will go BOC's Illawarra Hydrogen Technology Hub and Sundown's Keytah cotton farm near Moree. In addition, NSW is offering A\$1.5 billion (\$1 billion) in concessions to incentivize the development of large-scale green hydrogen projects.

The incentives will help hard-to-abate industries in NSW decarbonize and according to the news release are competitive against the US Inflation Reduction Act which industry experts have warned is drawing green capital and qualified workforce away from Australia.

"These globally competitive incentives will attract investors and industry to establish their operations in NSW, driving decarbonization in heavy industry and pushing down green hydrogen costs to reach our target of under A\$2.80 per kilo by 2030," NSW Treasurer and Minister for Energy Matt Kean said.

"These incentives will set us up for success as we compete with the high-profile US Inflation Reduction Act hydrogen incentives, because the NSW concessions can apply to projects finishing well beyond 2030, while the US program finishes in 2032," he said in the news release.

In the coastal Illawarra region, BOC's proposed project will install a 10-megawatt (MW) electrolyzer at Port Kembla to produce four metric tons (mt) of green hydrogen per day to supply at least four refueling stations and potentially power 40 heavy vehicles.

BOC's project aims to expand to 650 MW of electrolyzer capacity by 2030 to help decarbonize steel, glass and cement production in the region, according to the news release.

Near Moree, Sundown's proposed project will install a 12-MW electrolyzer to convert green hydrogen and air-captured nitrogen into green ammonia used for fertilizing farms in the region. This project aims to expand to 112 MW of capacity by 2030 to abate 284,000 mt of emissions.

The incentives are part of the NSW Hydrogen Strategy which has a "stretch" target to produce 110,000 mt of green hydrogen per year by 2030, powered by 700 MW of electrolyzer capacity. The state's hydrogen strategy could attract an estimated A\$80 billion (\$54 billion) in private investment by 2050, according to the news release.

In addition, green hydrogen producers across NSW are now able to access concessions to reduce the cost of large-scale investments, including up to a 90% reduction in their electricity network charges if they connect to parts of the grid with spare network capacity, Minister Kean said.

The transport, industrial and energy sectors account for around 18% of the annual emissions in NSW, the most populous state in Australia.

Industry peak bodies including the Australian Hydrogen Council and the Clean Energy Council have in recent weeks called on the federal government to implement proportionate policy and funding responses to the US Inflation Reduction Act which authorized \$369 billion in spending towards clean energy initiatives, as reported.

Federal energy minister Chris Bowen last Friday announced a review of Australia's existing national hydrogen strategy to ensure Australia stays on a path to be a global hydrogen leader by 2030.

According to the Commonwealth Scientific and Industrial Research Organization (CSIRO), out of 119 announced hydrogen-related projects in Australia, 10 are operating while 88 projects or 74% are in the planning stage. CSIRO's database includes large-scale, demonstration and pilot hydrogen projects.

In NSW, of the 10 announced hydrogen-related projects, only one - Jemena's trial blending of hydrogen in gas networks - is operating. Two are under construction while seven are in the planning stage, according to the Australian government scientific research agency.

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