

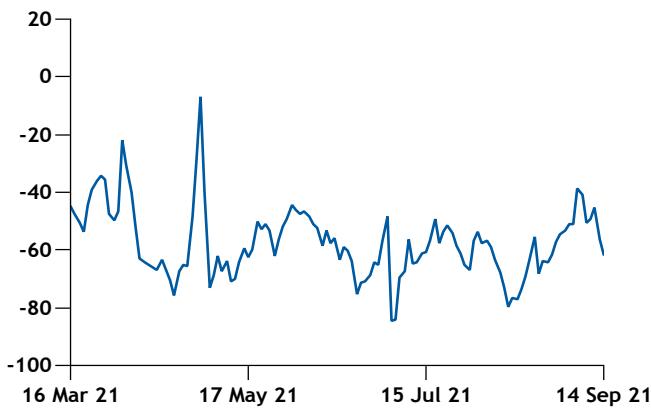
OVERVIEW

Asia-Pacific: Prices rose further.

Europe: Propane bidding resumes

North America: Propane extends gains.

Propane: Mt Belvieu non-LST diff to cif ARA \$/t



Propane diff to naphtha, cif ARA \$/t



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PRICES

Key prices		\$/t			
		Mid	±		
Propane cif ARA (large cargoes)		711.00	+13.00		
Butane cif ARA (large cargoes)		705.00	+5.50		
daf Brest propane		732.500			
daf Brest propane-butane mix		687.500	+4.500		
Propane Argus Middle East Index		714.00	+6.00		
Butane Argus Middle East Index		711.00	+6.00		
Propane Argus Far East Index™ (AFEI™)		742.50	+7.75		
AFEI™ diff to Propane M1		-8.00	+1.25		
Butane Argus Far East Index™ (AFEI™)		739.50	+7.75		
AFEI™ propane calculated netback USGC		654.36	+6.50		
Propane Argus Ningbo Index		743.00	+7.75		
Butane Argus Ningbo Index		740.00	+7.75		
Propane Argus South China Index		742.00	+5.25		
Butane Argus South China Index		739.00	+5.25		
Pearl River Delta Index (Yn/t)		5,107	+3		
Americas: Propane Mont Belvieu pipeline fob		\$/USG			
VWA	±	Low	High		
Enterprise	125.085	+1.500	124.750	- 125.500	+1.500
LST	124.966	+2.250	124.250	- 125.375	+1.625
fob USGC, diff to Mont Belvieu		4.000	-	4.500	
USGC export fob \$/t	+5.9	673.1	-	675.7	+5.9
US propane del Japan (AUSJ) \$/t	+6.0	745.5	-	748.0	+6.0
US propane del ARA (AUSE) \$/t	+6.0	710.5	-	713.0	+6.0
International comparisons (Sep)		\$/t			
		Propane	Butane		
Argus North Sea Index™ (ANSI™)		620.50	660.00		
Sonatrach fob Bethioua		640.00	670.00		
Saudi Aramco		665.00	665.00		
KPC (Kuwait)		665.00	665.00		
Propane AFEI™ Far East to Mideast Gulf netback		705.50	702.50		
Regional assessments		\$/t			
Propane	Mt Belvieu	NW Europe	AFEI		
Physical spot	652.00	711.00	742.50		
Sep	652.00	709.50	749.25		
Oct	650.50	705.00	754.25		
Nov	648.00	701.00	754.50		
Argus arbitrage		\$/t			
Propane	NWE diff to Mt Bel	AFEI diff to Mt Bel	AFEI diff to NWE		
Physical spot	-59.00	-90.50	-31.50		
Sep	-57.50	-97.25	-39.75		
Oct	-54.50	-103.75	-49.25		
Nov	-53.00	-106.50	-53.50		
Naphtha		\$/t			
	±	Bid	Ask		
cif northwest Europe	+2.25	674.25	- 675.25	+2.25	
cif Mediterranean	+2.25	668.25	- 669.25	+2.25	
cfr Japan	+2.25	681.50	- 685.75	+2.25	
fob Mideast Gulf	+2.800	656.00	- 660.25	+2.800	
LPG freight		\$/t			
VLGC Mideast Gulf-Japan			37.00		
VLGC Houston-Chiba			74.00		
VLGC Houston-Flushing			39.00		
4,000t Tees-Mohammedia butane			65.00		
1,800t Tees-Lisbon butane			81.00		
1,800t Tees-ARA			37.00		



NORTHWEST EUROPE

Large cargo

Propane pricing surged to a fresh seven-year high on Tuesday supported by Glencore returning to the afternoon trading session seeking a dated ToT for early October delivery.

Bidding started at a fully fixed priced \$705/t and increased to \$708/t cif Flushing, but no deal was done as sellers were absent. Large cargo propane pricing was assessed at \$711/t, a rise of \$13/t on the day hitting the highest levels since September 2014. The propane market appears to be a bit tight early in October with the arbitrage from the US to northwest Europe still unworkable and local supply insufficient to balance the region.

Across the pond, Hurricane Nicholas forced some ports around the US Gulf coast to close on Tuesday, including Houston and Freeport. But operations are expected to resume within 24 hours.

Butane spot trading was silent again on Tuesday. Large cargo butane pricing gained half-a-percentage point to 104.50pc of physical naphtha as supplies remain limited ahead of the winter gasoline blending season that mops up coaster and barge availability in the region, in-turn boosting large cargo value. Outright pricing was up by \$5.50/t to \$705/t, the highest level since September 2014.

Coasters

Again thin trade saw butane prices remain largely steady day-on-day relative to the wider markets. But, support may emerge before long. On a fob basis, as October discussions emerge, the west Mediterranean is viewed as tightening and buyers will be looking north for larger coaster parcels if transatlantic flows prove insufficient. On a delivered basis, with winter gasoline specification switches underway or imminent globally, more butane demand from the sector is expected despite butane coasters already standing at naphtha-relative levels that would mark the peak of many

Northwest Europe and Mediterranean					\$/t
	±	Bid	Ask	±	
Propane					
cif ARA (large cargoes)	+13.00	708.00	- 714.00	+13.00	
fob northwest Europe (small)	+13.00	743.50	- 749.50	+13.00	
cif ARA (small)	+13.00	779.50	- 785.50	+13.00	
fob ARA (barge)	+10.00	727.00	- 733.00	+10.00	
fca ARA (rail)	+9.00	733.00	- 739.00	+9.00	
cif Mediterranean (large)	+13.00	725.25	- 731.25	+13.00	
fob Mediterranean (small)	+20.00	702.00	- 708.00	+20.00	
fca Mediterranean (rail)		687.00	- 693.00		
Propane averages (Sep)			Price	±	
cif ARA (large cargo)			674.250	+4.083	
fob ARA barge			721.682	+5.909	
Butane					
cif ARA (large cargoes)	+5.50	702.00	- 708.00	+5.50	
fob northwest Europe (small)	+2.00	640.00	- 646.00	+2.00	
cif ARA (small)	+2.25	681.75	- 687.75	+2.25	
fob ARA (barge)	+2.25	677.00	- 683.00	+2.25	
fca ARA (rail)	+2.25	692.00	- 698.00	+2.25	
cif Mediterranean (large)	+5.50	682.00	- 688.00	+5.50	
fob Mediterranean (small)	+2.00	661.00	- 667.00	+2.00	
Butane averages (Sep)			Price	±	
cif ARA (large cargo)			685.375	+2.181	
fob ARA barge			675.011	+1.329	
Ice Brent futures settlement					
Nov			73.60	+0.09	
Dec			72.97	+0.07	
Jan			72.33	+0.05	
Competing fuels, 9 Sep			Bid	Ask	± 2 Sep
NWE small-scale LNG €/MWh			59.95	60.40	+4.80
NWE small-scale LNG \$/t propane equivalent			992.20	999.65	+75.75

prior blending seasons. Relative value in 2016, 2017, 2018 and 2019 peaked at parity, 100.5pc, 104pc and 97pc respectively. Currently cif ARA coasters are assessed at 101.50pc.

ARA

The relentless upward climb in both large cargo and natural gas prices is also having an impact on spot prices in the ARA region. While demand remains patchy as downstream buyers baulk at the ever-increasing prices, very limited supplies, especially for spot, mean that securing additional tonnes requires a hefty step up. A 400t lot was reported changing hands on Monday at \$738.75/t fot/fca and there was talk of still higher prices concluded privately.

Delivered butane barges held steady around the 103pc of naphtha mark, edging outright prices marginally higher in line with naphtha.

New ANSI freight for 2021-2022

Following consultation with the shipping industry the freight rate used to calculate the Argus North Sea Index (ANSI) for October 2021-September 2022 will be set at \$21.50/t – up by \$0.50/t compared with October 2020-September 2021. The freight rate is based on average time charter rates for a 20,000t cargo one load/two port discharge basis for routes Braefoot Bay, Karsto, or Mongstad terminals to Antwerp, Flushing, or Terneuzen.

Assessment rationale

Propane ARA large cargo (PA0000400) was assessed on the basis of transactions, bids and offers, as and when these are identified in the market commentary, and other market data, in accordance with the methodology.

Butane ARA/UK large cargo (PA0000360) was assessed on the basis of transactions, bids and offers, as and when these are identified in the market commentary, and other market data, in accordance with the methodology.

MEDITERRANEAN

As we bridge mid-month dates, eyes are beginning to turn to October needs and wants. The second and third decade September have been characterised by balance in the west, where heating demand is yet to begin, and tightness in the east, where Turkish autogas demand rolls on regardless of temperature, and can indeed be boosted in warmer months on increased travel. But October is understood to be tight right across the region as heating demand and restocking ahead of peak heating demand become bullish factors. Prices of both grades are anticipated to rise as October business begins.

FSU

The daf Brest assessment for propane-butane mix increased as buyers raised their bids on the AOM platform. Only three deals with a total volume of 600t were initiated on AOM at floating prices with premiums of \$75/t to \$87/t to the average of assessments ten days after the deal date. Prices for propane remained unchanged in the absence of fresh indications.

Black Sea assessments for LPG mix, propane and butane held steady due to muted trading activity.

Daf Ukraine prices for propane-butane mix slightly decreased as one Russian origin cargo was heard under discussion at \$715/t.

INTERNATIONAL SWAPS

Propane swaps gained significantly for the fourth consecutive day while naphtha swaps edged a few dollars higher. Cif ARA swaps for September gained \$14/t to \$709.5/t for September, which saw the front month swaps for European propane pass \$700/t for the first time since winter 2014.

October swaps traded at \$705/t in the assessment period and September swaps were assessed \$4.5/t above this reflecting the most recent September-October spread trade, which was done earlier in the day. Backwardation after the front month increased from \$3/t on Monday and \$2/t on

FSU/eastern Europe	\$/t			
	±	Bid	Ask	±
Daily				
fob Black Sea propane-butane mix		665.0	-	690.0
fob Black Sea propane		660.0	-	675.0
fob Black Sea butane		685.0	-	705.0
daf Brest propane-butane mix	+2.00	680.00	-	695.00 +7.00
daf Brest propane-butane mix €/t	+1.00	576.00	-	588.00 +4.00
daf Brest propane		720.00	-	745.00
daf Brest propane €/t	-1.00	610.00	-	631.00 -1.00
daf Brest differential to cif ARA (large)			22	
daf Ukraine propane-butane mix	-5.00	715.00	-	745.00
fot Burgas (Lukoil posted) propane-butane mix		776.0		+1.0
Argus Polish Domestic Index (APDI)		766		+4.5
Weekly				
daf Bekabad propane-butane mix	-	-	-	-
daf Ukrainian-Romanian border propane-butane mix	-	-	-	-

Friday. Naphtha swaps gained just \$2.5/t which meant the premium for propane increased to \$37.25/t over its rival feedstock, highest since January 2021.

AFEI swaps for September gained \$9.75/t to \$749.25/t while CP swaps for October increased by \$10/t to \$718/t. All the propane swap markets stand at their highest since 2014. Prices across all three assessments showed greater strength at the front months with prices towards the back of the curve increasing by about half as much compared with gains at the front.

Reported done (\$/t)

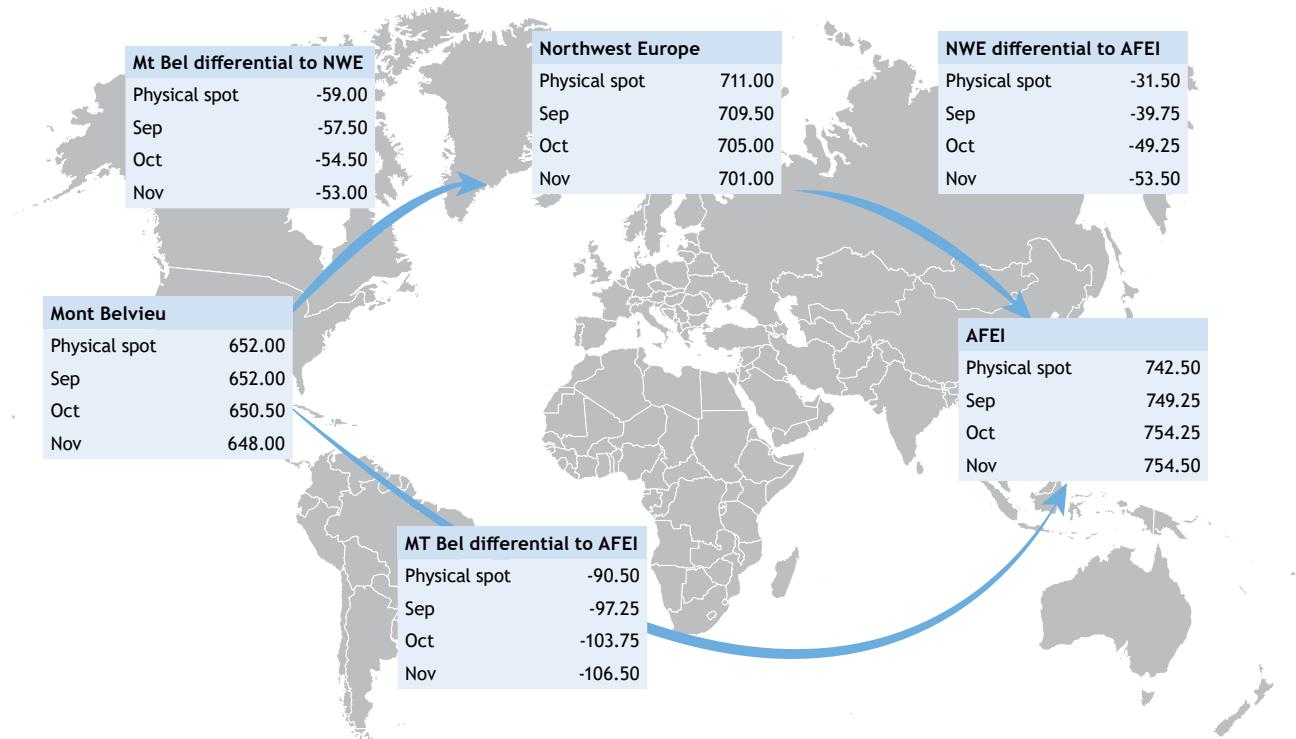
705(3kt), 705(1kt) Oct cif ARA
 699(5kt) Nov cif ARA
 4(2kt), 4.5(2kt) Sep-Oct cif ARA
 4(10kt), 4(5kt) Oct-Nov cif ARA
 723(2kt) Dec CP
 -8(5kt), -6.5(5kt) Oct-Nov CP
 2(2kt) Nov-Dec CP
 744(2kt) Sep AFEI
 754.5(2kt), 755(2kt) Oct AFEI
 754.5(5kt) Nov AFEI
 750(5kt) Dec AFEI
 -6(5kt), -5(2kt) Sep-Oct AFEI
 -1(1kt) Oct-Nov AFEI
 4.25(10kt) Oct-Dec AFEI
 4.5(5kt), 4.75(3kt) Nov-Dec AFEI
 36(3kt) Oct AFEI-CP
 31(3kt) Nov AFEI-CP

FREIGHT

The cost of freight for a VLGC from Ras Tanura to Chiba fell for the fifth consecutive day, and for the ninth time in ten

LPG arbitrage

\$/t



International swap prices (4:30pm London)

\$/t

	Propane cif ARA	Naphtha northwest Europe	Propane CP	Propane Argus Far East Index (AFEI)™	Propane Mont Belvieu LST (€/USG)	Propane less naphtha	AFEI™ less propane cif ARA	Mont Belvieu less Propane cif ARA	propane Mont Belvieu less AFEI™	AFEI™ less propane CP
M1 differential to physical	+1.50	+2.50		-6.75	-					
Sep 21	709.50	672.25	na	749.25	124.625	+37.25	+39.75	-60.20	-99.95	na
Oct 21	705.00	664.00	718.00	754.25	124.750	+41.00	+49.25	-55.05	-104.30	+36.25
Nov 21	701.00	653.75	724.50	754.50	124.250	+47.25	+53.50	-53.66	-107.16	+30.00
Dec 21	694.50	644.50	723.00	750.00	122.750	+50.00	+55.50	-54.97	-110.47	+27.00
Jan 22	683.00	636.75	715.50	738.00	120.750	+46.25	+55.00	-53.89	-108.89	+22.50
Feb 22	660.00	629.00	699.50	714.50	117.375	+31.00	+54.50	-48.48	-102.98	+15.00
Mar 22	622.00	621.00	665.50	675.60	109.125	+1.00	+53.60	-53.46	-107.06	+10.10
Apr 22	585.00	613.00	628.50	637.50	101.125	-28.00	+52.50	-58.14	-110.64	+9.00
May 22	560.00	605.25	603.50	611.50	95.750	-45.25	+51.50	-61.14	-112.64	+8.00
Jun 22	543.00	599.50	586.50	596.50	92.250	-56.50	+53.50	-62.38	-115.88	+10.00
Jul 22	538.00	595.00	579.50	588.00	90.750	-57.00	+50.00	-65.19	-115.19	+8.50
Aug 22	537.00	591.00	576.00	584.50	90.375	-54.00	+47.50	-66.15	-113.65	+8.50
Sep 22	537.00	587.25	577.00	585.00	90.375	-50.25	+48.00	-66.15	-114.15	+8.00
4Q21	700.25	654.00	721.75	753.00	123.917	+46.25	+52.75	-54.64	-107.39	+31.25
1Q22	655.00	629.00	693.50	709.25	115.750	+26.00	+54.25	-51.94	-106.19	+15.75
2Q22	562.75	606.00	606.25	615.25	96.375	-43.25	+52.50	-60.64	-113.14	+9.00
3Q22	537.25	na	577.50	585.75	90.500	na	+48.50	-65.74	-114.24	+8.25
2022	571.00	598.75	600.00	624.00	98.460	-27.75	+53.00	-58.02	-111.02	+24.00

Calculated LPG freight rates		
Route	Size (t)	\$/t
VLGC		
Houston-Mohammedia	46,200	38.56
Marcus Hook-Flushing	46,200	30.09
Houston-Suape	46,200	34.73
Houston-Quintero	46,200	46.63
Ras Tanura-New Mangalore	46,200	13.39
MGC		
Marcus Hook-Flushing	21,700	46.00
Houston-Flushing	21,700	61.36
Houston-Suape	21,700	55.05
Ras Tanura-New Mangalore	22,000	24.96
Houston-Callao	21,700	56.04

days, on Tuesday, as demand remained mute and voyage availability remained high. The rate fell by \$1/t to close at \$37/t.

The market awaited the result of India's state-controlled HPCL tender which closed today. The company sought shipment for a 45,000t mixed propane/butane cargo, to load from Ras Laffan from 3-4 October, destined for Vizag, Mangalore, or Haldia.

In the US, Texas ports are assessing damage as some will remain closed or open with restrictions after tropical storm Nicholas.

The US arbitrage to Asia has narrowed since the start of the month, closing the door on any likeliness of activity, a market participant said. Mont Belvieu propane's arbitrage to Asia for October narrowed to around \$99/t yesterday, from \$110/t at the start of the month and around \$103/t a week earlier.

With the arbitrage shut, and netbacks unworkable, something has got to give in the market, and it looks like freight is that, market participant said.

VLGC time charter equivalent (TCE) earnings fell again yesterday, with both Houston assessments dropping by around \$3,000/d, while the Ras Tanura to Chiba rate recorded a decline of \$2,000/d to \$17,000/d.

The coaster rate for a voyage from Tees to ARA held flat to close at \$37/t on Tuesday. While the Tees to Lisbon coaster rate closed at \$81/t.

Only one cargo was heard seeking shipment on the day, but the market sentiment remained positive on the increased demand recorded at the end of last week.

Middle East and Asia-Pacific averages		\$/t
	Price	±
Middle East (Oct)		
Propane	0.400	-0.044
Butane	0.400	-0.044
Argus Middle East Index		
Propane	697.200	+1.867
Butane	698.200	+1.422
Argus Far East Index™ (Sep)		
Propane	724.325	+2.019
diff to M1	-7.130	-0.100
Butane	725.325	+1.575
11+11 propane-butane mix (Sep)	724.825	+1.797
Argus Ningbo Index (Sep)		
Propane	725.075	+1.992
Butane	726.075	+1.547
Argus South China Index (Sep)		
Propane	727.225	+1.642
Butane	728.225	+1.197
Pearl River Delta Index (Yn/t)	4,988	+13
South Africa LPG Index MTD	818.207	+1.357

Italy's Eni sought shipment for a 1,700t propane cargo loading from Flushing, from 21-23 September.

Demand on the Tees to Mohammedia route failed to increase on Tuesday, with delays still reported at the port and vessels voyaging to other ports in the region.

The cost of freight for a coaster between Tees and Mohammedia held flat at \$65/t on Tuesday. While the price for a 4,000t coaster travelling from Lavera to Morocco was heard around the low-\$40's/t.

MIDDLE EAST

Spot differentials for propane and butane cargoes loading 11-20 October from the Mideast Gulf were assessed stable at parity to October CP.

Petredec emerged with a bid for 45,000t propane loading from the Mideast Gulf excluding Iran, Iraq and Yanbu during 22-31 October at the average of October CP Flat and \$725/t.

The Argus Middle East Index (AMEI) assessments for propane and butane were assessed at \$714/t and \$711/t respectively.

October propane CP swaps rose by \$6/t day-on-day to settle at \$714/t at Asian close of trade while its butane counterpart was assessed \$3/t lower at \$711/t.

Argus African LPG Indexes								
	South Africa	±	West Africa Propane	±	West Africa Butane	±	East Africa	±
Index \$/t	831.78	+6.04	750.45	+5.85	737.42	+3.65	743.05	+6.07
MTD average \$/t	816.85	+1.66	724.22	+3.28	722.35	+1.88	729.63	+1.50
Index local currency/kg	1182.44 ZARc	+10.87	308.83 NGN	+2.03	303.47 NGN	+1.13	81.73 KES	+0.75
Calculation								
Underlying price \$/t	712.80	+6.00	674.41	+5.88	661.38	+3.68	711.45	+6.00
Freight + logistics \$/t	118.98	+0.04	74.27	+0.70	74.27	+0.70	31.60	+0.07

ASIA -PACIFIC

Refrigerated

Asian prices extended gains alongside firmer crude benchmarks. October Argus Far East Index (AFEI) propane swaps rose by \$6.5/t on the day to close at \$750.5/t at Asian timestamp after front-month Brent futures added nearly \$0.6/bl.

Steady buying support for 23,000t propane arriving in second-half October could have boosted market sentiments, market participants said. While balance September/October AFEI timespreads were largely stable at -\$6.5/t, selling interest appeared to have waned.

Vilma returned to offer 23,000t propane cargo for first-half October at balance September AFEI -\$2/t before lowering to -\$3/t at the close of market. BP offered a similar cargo at October AFEI -\$8/t. The offers were less aggressive compared to levels offered yesterday at October AFEI -\$10.5/t and -\$11/t.

Similarly, offers for 23,000t propane for second-half October retreated to October AFEI -\$3.8/t compared to October AFEI -\$6/t seen yesterday. Vitol posted the highest counterbid at October AFEI -\$7/t. Glencore was bidding for two similar cargoes at balance September AFEI -\$1.5/t which equated October AFEI -\$8/t and October AFEI -\$7.5/t while Petrochina's bid was at October AFEI -\$8/t.

Glencore also emerged with a bid for 46,000t propane arriving in second-half October at balance September AFEI -\$4.5/t which equated October AFEI -\$11/t. Trafigura also returned to bid for 46,000t propane for second-half October arrival basis Chiba at balance September AFEI -\$4.5/t after having procured a similar cargo yesterday from Wanhua Chemical.

Fresh demand from Taiwan surfaced after CPC issued a tender seeking 11,000t+11,000t for second-half October delivery into Shen-Ao and/or Kaohsiung which closes 14 September. Offers are to remain valid till 16 September.

A PDH in Ningbo reportedly sought 23,000t propane to be delivered during the first decade of every month in 2022. The term tender closes 22 September with same-day validity.

11,500t+11,500t cargoes arriving 9-15 October were assessed at \$738/t, reflecting the average of propane and butane AFEI for first-half October arrival. 11,500t+11,500t cargoes arriving 16-24 October were assessed at \$743.5/t, reflecting the average of propane and butane AFEI for second-half October arrival. The Argus Mixed Index spanning 9-24 October averaged \$741/t.

The Argus cfr Ningbo propane Index for cargoes arriving 9-15 October were assessed at October AFEI -\$10.5/t or \$740/t, in consideration of private discussions. Cfr propane

Asia-Pacific						\$/t
	CP basis	Timing	±	Bid	Ask	±
Propane						
Gulf CP fob	Oct	Oct		-5.00 /	5.00	
Argus Middle East Index				714.00	+6.00	
Japan CP cfr	Oct	2H Oct	+1.00	26.00 /	31.00	+2.50
Japan cfr				+7.00 740.00 -	745.00	+8.50
Argus Far East Index™ (AFEI™)					742.50	+7.75
AFEI™ diff to M1					-8.00	+1.25
Butane						
Gulf CP fob	Oct	Oct		-5.00 /	5.00	
Argus Middle East Index				711.00	+6.00	
Japan CP cfr	Oct	2H Oct	+1.00	26.00 /	31.00	+2.50
Japan cfr				+7.00 737.00 -	742.00	+8.50
West coast India CP cfr	Sep	Sep	+7.00	67.00 /	72.00	+8.50
Argus Far East Index™ (AFEI™)					739.50	+7.75
11+11 propane-butane mix						
Japan cfr				+7.50 739.00 -	743.00	+8.00
Argus Mixed Index					741.00	+7.75
Propane pressurised						
South China CP fob	Sep	Sep		33 /	43	
South China fob		Sep		698 /	708	
South China CP cfr	Sep	Sep		63 /	73	
South China cfr		Sep		728 /	738	
Vietnam CP cfr	Sep	Sep		81 /	91	
Butane pressurised						
South China CP fob	Sep	Sep		33 /	43	
South China fob		Sep		698 /	708	
South China CP cfr	Sep	Sep		63 /	73	
South China cfr		Sep		728 /	738	
Vietnam CP cfr	Sep	Sep		81 /	91	

Propane swaps (5pm Singapore)			\$/t
CP swaps	AFEI™ swaps		
Oct	714.00	Sep	744.00
Nov	722.00	Oct	750.50
Dec	721.00	Nov	752.00

Butane swaps (5pm Singapore)			\$/t
CP swaps	Propane/Butane CP swaps Differential		
Oct	711.00	Oct	+3.0

cargoes arriving 16-24 October were valued at October AFEI -\$5/t or \$745.5/t, in consideration of private discussions. The Argus propane Ningbo Index spanning 9-24 October averaged \$743/t.

The Argus cfr Ningbo butane Index for cargoes arriving 9-15 October were assessed at \$737/t, reflecting October propane-butane CP differentials assessed at +\$3/t today. Cfr butane cargoes arriving 16-24 October were assessed at \$742.5/t, reflecting the same contango structure as cfr

Ningbo Index for propane. The Argus butane Ningbo Index spanning 9-24 October averaged \$740/t.

The Argus South China propane Index for cargoes arriving 9-15 October were assessed at October AFEI -\$11.5/t or \$739/t, in consideration of private discussions. Cfr propane cargoes arriving 16-24 October were assessed at October -\$6/t or \$744.5/t, in consideration of private discussions. The Argus south China propane Index spanning 9-24 October averaged \$742/t.

The Argus south China butane Index for cargoes arriving 9-15 October were assessed at \$736/t, reflecting October propane-butane CP differentials assessed at +\$3/t today. Cfr butane cargoes arriving 16-24 October were assessed at \$741.5/t, reflecting the same contango structure as the south China Index for propane. The Argus South China butane Index spanning 9-24 October averaged \$739/t.

Assessment rationale

Propane Argus Far East Index (AFEI) (PA0000403) was assessed based on bid, offers and other market data.

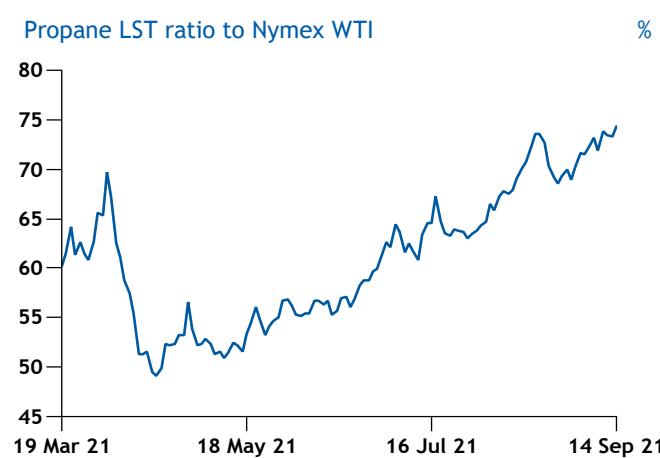
The October AFEI and October CP propane swaps were valued at \$750.5/t and \$714/t respectively.

Cfr propane cargoes arriving 9-15 October were valued at October AFEI -\$11/t, or \$739.5/t, in consideration of the best offer on 23,000t propane for first-half October arrival posted at balance September AFEI -\$2/t and the absence of bids. Cargoes arriving 16-24 October were assessed at October AFEI -\$5.5/t, or \$745/t, reflecting the midpoint of the best bid and offer on 23,000t propane for second-half October arrival posted at October AFEI -\$7/t and October AFEI -\$3.8/t respectively. The propane AFEI spanning 9-24 October averaged \$742.5/t.

The propane AFEI rose by \$7.75/t from the previous session.

Butane Argus Far East Index (AFEI) (PA0000361) was assessed on the basis of other market data.

China wholesale propane/butane mix		yuan/t	
	±	Bid	Ask
South China			
Ex terminal			
Dongguan		5,080	- 5,130
Zhuhai		5,080	- 5,140 +10
Shenzhen		5,080	- 5,130
Raoping		5,100	- 5,130
Nansha		5,080	- 5,130
Shantou		5,100	- 5,130
Yangjiang		5,080	- 5,120
Pearl River Delta Index			5,107 +3
Ex refinery			
Maoming	+40	4,960	- 5,010 +40
Guangzhou	+30	5,000	- 5,050 +30
East China			
Ex terminal			
Ningbo	+50	5,050	- 5,200 +100
Wenzhou	+50	5,050	- 5,200 +100
Taicang	+100	5,100	- 5,200 +100
Shanghai	+100	5,000	- 5,050 +100
Zhangjiagang	+100	5,100	- 5,200 +100
Fujian	+100	5,200	- 5,250 +100
Ex refinery			
Shanghai		4,750	- 4,800
Zhenhai		4,900	- 4,950
Yangzi	+50	5,100	- 5,150 +50
Fujian		5,050	- 5,100
Gaoqiao		4,750	- 4,800
Qingdao	+100	5,050	- 5,100 +100
Northeast China ex refinery			
Daqing		4,750	- 4,800
Dalian		4,780	- 4,820
Northwest China ex refinery			
Urumqi		3,700	- 3,750
Inland China ex refinery			
Lanzhou		0	- 0
Yan-An	+135	4,885	- 4,890 +135



Cfr butane cargoes arriving 9-15 October were assessed at \$736.5/t, reflecting October propane-butane CP differentials assessed at +\$3/t today. Cargoes arriving 16-24 October were assessed at \$742/t to reflect the same contango structure between first-half and second-half October as the propane AFEI. The butane AFEI spanning 9-24 October averaged \$739.5/t.

The butane AFEI rose by \$7.75/t from the previous session.

Pressurised

Pressurised premiums held steady amid a lack of fresh spot trading activity.

Terminals in south China continued to offer prompt-loading cargoes at September CP +high-\$30s/t, while notional offers into north Vietnam were at September CP +\$86/t on a cfr Haiphong basis.

Wholesale prices in east China extended gains on Tuesday on the back of firmer international prices and a drop in imports owing to typhoon Chanthu. Prices in south China are largely stable amid muted trade discussions.

The Pearl River Delta index (PRD) inched up by 3yuan/t to 5,107yuan/t from the last trading session. Terminals were cautious about raising offers owing to tepid demand from downstream bottlers who were facing high stockpiles, a south China importer said. Prices at JOVO Dongguan, China Gas Guangzhou and Sinobenny Shenzhen were unchanged at Yn5,105/t today. Zhuhai terminal prices edged up by Yn5/t to Yn5,110/t. Prices at Siamgas and New Ocean prices were unchanged while CNOOC Gaolan prices rose by Yn30/t to Yn5,030/t.

Raoping and Shantou terminal prices were steady at Yn5,115/t amid a balanced supply and demand outlook. Yangjiang terminal held prices unchanged at Yn5,100/t.

In south China, refinery prices at Guangzhou and Maoming moved up by Yn30/t and Yn40/t respectively, supported by moderately low inventory levels. Refinery LPG prices were more competitive than terminal prices.

In east China, terminal prices strengthened after delays in VLGC discharging due to the typhoon had boosted trad-

ing sentiments. Also, some terminals and refineries had suspended sales as a result of poor weather conditions. In Shandong province, residential grade LPG prices at Qingdao refinery rose by Yn100/t as firmer crude prices supported prices of etherified butane in the gasoline blending sector. Local refinery LPG supply had gradually tightened in the wake of planned shutdowns. The crude import quota at some independent refineries in Shandong had been used up, a market participant said.

In northeast China, Dalian and Daqing prices held steady amid limited trading interest today. Urumqi refinery prices in northwest China were also unchanged.

In inland China, Yan'an refinery prices surged by Yn135/t today, tracking firmer prices in east China.

US GULF EXPORTS

The Houston Ship Channel remained closed to traffic Tuesday as the remnants of tropical storm Nicholas, which made landfall overnight as a Category 1 hurricane, passed over the region. Normal traffic is expected to resume Wednesday. Pilot service also remained suspended at Freeport and Nederland, Texas, Tuesday.

Spot fob discussions for October Gulf coast loadings remained thin as market participants monitored power outages and other possible storm-related delays, with the last levels heard just above 4¢/USG this week. The October LST/FEI arbitrage widened on paper, however, with October LST/FEI paper trading from \$103/t to \$105/t during the morning.

Vessel tracking indicated four VLGCs moored in Houston and two VLGCs moored at Nederland Tuesday afternoon.

US

Mont Belvieu light NGLs

Mont Belvieu, Texas, LST propane extended gains as inventories remain tight ahead of the winter heating season and was valued at 74.43pc of Nymex WTI.

September LST propane opened 1.875¢/USG higher at 124.75¢/USG and traded between 124.25-125.375¢/USG. Sep-

ANNOUNCEMENT

Argus successfully completes annual losco assurance review

Argus has completed the ninth external assurance review of its price benchmarks covering crude oil, products, LPG, petrochemicals, biofuels, thermal coal, coking coal, iron ore, steel, natural gas and biomass benchmarks. The review was carried out by professional services firm PwC. Annual independent, external reviews of oil benchmarks are required by international regulatory group losco's Principles for Oil Price Reporting Agencies, and losco encourages extension of the reviews to non-oil benchmarks. For more information and to download the review visit our website <https://www.argusmedia.com/en/about-us/governance-compliance>

tember LST/EPC spreads priced the caverns either at parity or LST at a 0.125-0.25¢/USG discount.

EPC propane opened 1.375¢/USG higher at 125¢/USG and traded between 124.75-125.5¢/USG.

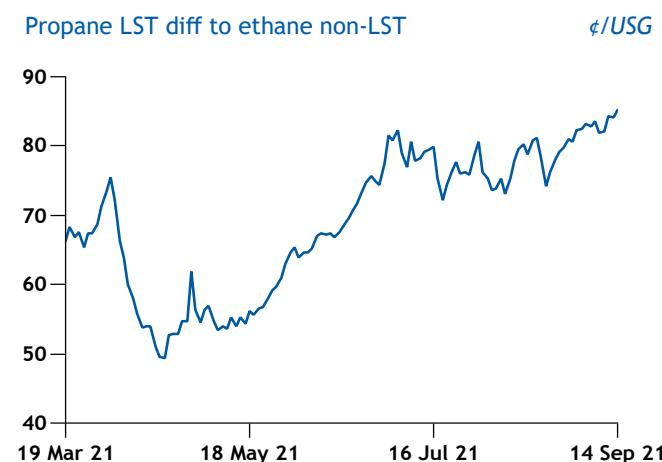
A small volume of Targa propane traded at 125¢/USG. Targa was valued at parity to both LST and EPC propane in spreads.

EPC ethane edged higher, opening 0.625¢/USG higher at 39.5¢/USG and trading between 39-40¢/USG.

Targa ethane opened 0.625¢/USG higher at 39.25¢/USG and rose to 39.5¢/USG.

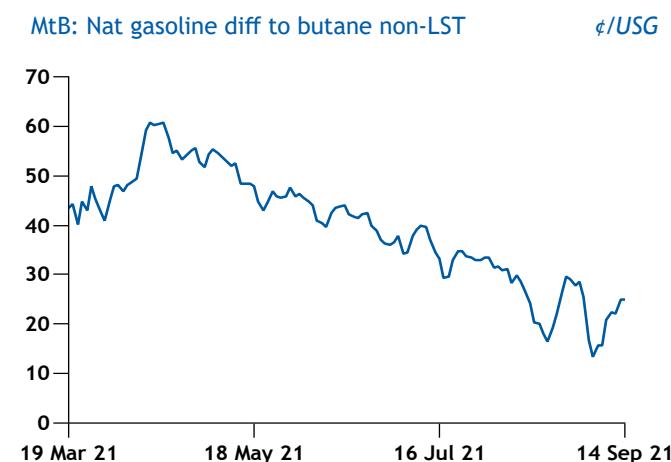
October Nymex light sweet crude futures rose by 1¢/bl to settle at \$70.46/bl. Nymex RBOB rose by 1.15¢/USG to \$2.1724/USG.

US Gulf coast LPG			
	Low	High	Mean
Propane			
fob USGC, diff to Mont Belvieu ¢/USG	+4.000	+4.500	+4.250
fob USGC ¢/USG	128.875	129.375	129.125
fob USGC \$/t	671.4	674.0	672.7
del Japan (AUSJ) \$/t	745.5	748.0	
del ARA (AUSE) \$/t	710.5	713.0	
AFEI™ propane calculated netback USGC \$/t			654.36
Butane			
fob USGC ¢/USG	145.75	146.25	146.00
fob USGC \$/t	660.25	662.51	661.38
LPG freight			
	Price		
Handysize Houston EC Mexico \$/t			23.25
VLGC Houston-Chiba \$/t			74.00
VLGC Houston-Flushing \$/t			39.00



Americas: Mont Belvieu pipeline fob (Sep)					
	VWA	±	Low	High	±
Enterprise					
Propane	125.085	+1.500	124.750	- 125.500	+1.500
Propane equivalent \$/t		+7.815	649.948	- 653.855	+7.815
Butane	142.726	+0.000	141.500	- 144.000	+1.000
Butane equivalent \$/t		+0.000	640.995	- 652.320	+4.530
Purity ethane	39.494	+0.625	39.000	- 40.000	+0.750
Purity ethane equivalent \$/t		+5.000	288.000	- 295.000	+5.000
Ethane-propane mix	37.875	+0.625	37.625	- 38.125	+0.625
Isobutane	141.775	+0.250	141.500	- 141.875	-0.125
Natural gasoline	167.690	+0.500	167.000	- 168.500	+0.500
LST					
Propane	124.966	+2.250	124.250	- 125.375	+1.625
Butane	142.375	-0.625	142.125	- 142.625	-0.625
Targa					
Propane	125.000	+1.500	124.750	- 125.250	+1.500
Ethane	39.417	+0.750	39.250	- 39.500	+0.375

US Enterprise averages			
Month to date			
	±	Low	High
Propane (Sep)		120.535	+0.574
Butane (Sep)		143.639	-0.111
US forward market			
	±	Low	High
Mont Belvieu propane			
Sep	+1.625	124.875	- 125.375
Oct	+1.375	124.625	- 125.125
Nov	+1.375	124.125	- 124.625
Dec	+1.375	122.625	- 123.125
4Q21	+1.375	123.750	- 124.250
Mont Belvieu butane			
Sep	+0.500	142.500	- 143.000
Oct	+1.000	141.875	- 142.375
Nov	+0.875	141.125	- 141.625
Dec	+1.125	139.000	- 139.500
4Q21	+1.000	140.625	- 141.125



AMERICAS DEALS

Mont Belvieu heavy NGLs

Mont Belvieu, Texas, EPC natural gasoline extended gains alongside crude, valued at 100pc of Nymex WTI.

September EPC natural gasoline opened 0.75¢/USG higher at 168¢/USG and traded between 167¢/USG and 168.5¢/USG. October natural gasoline was discussed between 166.25-166.5¢/USG.

LST natural gasoline traded at 168¢/USG, with September LST/EPC spreads valuing LST either at parity or a 0.125¢/USG discount to EPC natural gasoline.

Targa natural gasoline traded at 166.75¢/USG.

EPC September butane opened 0.5¢/USG stronger at 142.75¢/USG and traded between 141.5¢/USG and 144¢/USG, valued 85.1pc of Nymex WTI. October butane was discussed between 141.75¢/USG and 142.625¢/USG.

Targa butane traded at 141.25¢/USG and was valued at a 1.25¢/USG discount in a spread against EPC normal butane.

AMERICAS DEALS

EPC isobutane opened 0.125¢/USG weaker at 141.5¢/USG and increased to 141.875¢/USG thereafter. An isobutane/butane spread valued isobutane at a 1¢/USG discount to EPC normal butane.

INDUSTRY NEWS

Kem One to be acquired by Apollo Funds

French-based polyvinyl chloride (PVC) and caustic soda producer Kem One is to be sold to US-based hedge fund Apollo Global Management, Kem One said today.

Kem One Group president Alain de Krassny is negotiating terms with the hedge fund, with the proposed sale scheduled to be finalised by the end of 2021, subject to regulatory approval. Funds will be managed by Apollo Funds, an affiliate of Apollo Global Management.

Financial terms of the transaction were not disclosed.

The transaction will include eight industrial sites located across France and Spain, where Kem One produces several PVC grades including suspension, mass, paste and post-chlorinated PVC. Under de Krassny, the company improved the quality and reliability of its production facilities, reduced production costs and its environmental footprint, supported by an investment programme of more than €500mn (\$591mn).

The investment includes three main projects – the conversion and upgrade of electrolysis units at the company's Lavera site completed in 2017, the construction of an ethylene storage terminal at the company's Fos-sur-Mer site, to be finalised in the fourth quarter this year, and an additional conversion and upgrade of electrolysis units at Fos-sur-Mer. The latter is expected to launch in the coming months, with additional works to be completed under Apollo's ownership.

By Michael Vitiello

India refiners should target LPG: Official

An Indian government official has said the country's state-run refiners must reconfigure to target lighter products such as gasoline, naphtha and LPG and reduce the amount of diesel.

These changes will have to happen to match the country's needs, said oil ministry secretary Tarun Kapoor at an industry event today.

"Going forward the refining configuration will have to be different," said Kapoor, who is India's most senior oil bureaucrat. A change in focus from diesel to gasoline and LPG will happen in case of new projects and expansion programs, he said.

"The new refineries which we are planning they will have

Mont Belvieu spot deals		Timing	¢/USG	bl
		Sep	125.000	10,000
		Sep	125.000	10,000
		Sep	125.125	10,000
		Sep	125.125	10,000
		Sep	125.250	10,000
		Sep	125.375	10,000
		Sep	125.500	25,000
		Sep	125.500	10,000
		Sep	125.500	10,000
Propane LST		Sep	124.250	10,000
		Sep	124.625	10,000
		Sep	124.625	10,000
		Sep	124.750	10,000
		Sep	124.875	10,000
		Sep	125.000	10,000
		Sep	125.000	5,000
		Sep	125.000	5,000
		Sep	125.375	30,000
		Sep	125.375	10,000
Propane LST/EPC		Sep	-0.250	10,000
		Sep	-0.250	10,000
		Sep	-0.125	10,000
		Sep	-0.125	10,000
		Sep	-0.125	10,000
		Sep	0.000	10,000
		Sep	0.000	10,000
Propane Targa		Sep	125.000	5,000
Propane Targa/EPC		Sep	0.000	10,000
Propane Targa/Propane LST		Sep	0.000	5,000

to have slightly different configuration and we will have to bring petrochemicals attached with refineries to keep the costs low and viability high," he said.

Indian state-controlled oil companies, which control around 90pc of the country's fuel market, plan to spend 2 trillion rupees (\$27bn) to boost capacity by 1mn b/d to 6mn b/d by 2025, according to the oil ministry. Government estimates put capacity additions at 2mn-3mn b/d by 2030.

State-run refiners, which operate around 3.2mn b/d of capacity, or 64pc of India's capacity, have traditionally focused on diesel as it is India's biggest selling product with a 40pc market share. But Kapoor said diesel use is 7-8pc below pre-pandemic levels, while gasoline demand is 4pc above pre-Covid levels. LPG use has increased, but inadequate output from domestic plants forces India to import 55pc of its needs.

Kapoor said that refiners must focus on LPG and naphtha, which can be used to make petrochemicals, and reduce dependence on diesel. Private-sector refiners such as Reliance

INDUSTRY NEWS

Industries have a more balanced product mix with a focus on lighter products and chemicals.

Provisional ministry data show that India's gasoline demand rose by around 2pc on the month in August to 734,000 b/d, and was higher by 13pc and 5pc respectively from the same time last year and in August 2019. Diesel consumption was 1.35mn b/d, down by 9pc on the month and lower by 8pc from pre-pandemic August 2019.

The IEA today estimated that India's 2021 demand for diesel will increase by 131,000 b/d year on year to 1.55mn b/d and gasoline use will rise by 69,000 b/d to 736,000 b/d.

By *Dinakar S*

ANSI freight rate edges up again

The freight rate used to calculate the **Argus** North Sea Index (ANSI) for propane and butane from October 2021 to September 2022 will rise by \$0.50/t on the year to \$21.50/t, following a consultation with the shipping industry.

The ANSI rate represents average timecharter rates for 20,000t LPG cargoes on a one load/two port discharge basis across key North Sea routes from export terminal sites at Braefoot Bay, UK, or Karsto or Mongstad, Norway to key consumption sites Antwerp, Belgium, or Flushing or Terneuzen, the Netherlands.

Timecharter rates for midsize gas carriers (MGCs) are little moved year on year, leading to just a marginal gain in the freight element compared with 2020-2021.

ANSI prices are broadly used in both spot deals and term contracts across Europe. The monthly price is based on the last five days of the previous month's propane or butane large cargo cif ARA, minus the yearly adjusted freight element.

The ANSI freight rate element has been assessed across a \$17.50-28/t range since 2011. But large cargo propane and butane prices that contribute the product element to the monthly prices have each been assessed in a very wide range from under \$150/t to over \$1,000/t.

Recent years have seen the freight element edge northwards steadily year-on-year from \$17.50/t across October 2017-September 2018 to the fresh \$21.50/t assessment for October 2021-September 2022.

By *Peter Wilton*

Ministry rows with Rosneft over Fepco

Russia's finance ministry and Rosneft are in dispute over the scope of state support for the company's proposed 240,000 b/d Fepco refining and petrochemicals complex in Russia's far east.

The disagreement centres on the amount of financing the project might receive from the National Wealth Fund (NWF) — accumulated from oil export duty revenue — and whether any should be allocated at all, according to deputy finance minister Alexei Sazanov. President Vladimir Putin ordered the government to devise support measures for Fepco in January, possibly including tax breaks.

As well as tax incentives, Rosneft wants the state to take responsibility for building necessary external infrastructure for Fepco — such as power supply and pipelines. And it wants Gazprom to supply gas to the complex, near the port of Nakhodka, which the gas firm is reluctant to agree to.

The energy ministry said last year that it expected Rosneft to commission the first Fepco units in 2026 — starting with 4.5mn t/yr of petrochemicals capacity, followed by a 240,000 b/d refinery in 2029. Russia's biggest refiner has recently highlighted the lack of refining capacity in the country's far east region in a bid to secure state backing for the project — specifically a shortfall in gasoline production and supply that has resulted in shortages.

Rosneft previously abandoned Fepco in May 2019, after a decade of planning, when attempts to attract foreign investment partners were unsuccessful — an outcome that the company blamed on a lack of endorsement from the federal government. Rosneft insisted at the end of last year that a revival of the project was possible only if the government granted tax concessions.

The NWF accumulates from oil export revenues when the price of crude is above a baseline figure for the federal budget — \$43.30/bl in 2021. The government has previously agreed to lend NWF funds to Novatek to help finance its 17.44mn t/yr Yamal LNG project and to petrochemicals company Sibur for construction of its 2mn t/yr Zapsibneftekhim complex in western Siberia.

By *Oksana Yablokova*

IEA cuts 3Q refinery throughput projection

The IEA has cut its forecasts for third-quarter global refining throughput, citing a steep fall in China's processing activity in July and the after-effects of Hurricane Ida on the US Gulf coast industry this month.

In its latest monthly *Oil Market Report* (OMR), the IEA said it sees throughput this quarter at 78.5mn b/d, a cut of 830,000 b/d from its prior projection.

Chinese throughput fell by 900,000 b/d in July, the agency said, to 13.9mn b/d, the lowest since May 2020 and 10,000 b/d below the year-earlier level.

"The surprisingly large month-on-month fall in China

INDUSTRY NEWS

more than offset an otherwise solid increase in run rates for the rest of the world", the IEA said. "For the first time since 2009, global refining throughput failed to ramp up in July."

A partial recovery in China, and a seasonal increase in Europe, pushed global throughputs up by 1mn b/d to 79.1mn b/d in August, but US refinery activity was hit by Hurricane Ida at the end of that month. Some of the region's facilities are still disrupted, with the IEA noting that 700,000 b/d of capacity remained shut as of 12 September. It forecasts US runs will fall by 400,000 b/d month on month in September, having dropped by 170,000 b/d in August.

The combination of lower Chinese runs in July and hurricane-related outages in August and September meant that the IEA revised the quarterly increase in throughput to 1.5mn b/d in the period, compared with a 1.8mn b/d increase in the April-June period.

The agency said it expects refining activity to remain held back into next year.

"Refiners globally seem more financially disciplined this year and less eager to ramp up runs when demand growth is periodically set back by pandemic-control measures," it said, cautioning that the demand recovery is itself "uneven across both regions and products".

It forecasts Indian demand growth this year to be limited to two-thirds of the amount lost in 2020, and for Covid-19 lockdowns in the rest of Asia-Pacific, excluding China, to result in demand regaining just 43pc of that year's falls. It does not expect a full recovery in that region until 2022. In Europe, a "mere" 40pc recovery will be achieved in 2022.

By Harry Riley-Gould

OECD CLIs indicate moderating growth

The OECD's latest monthly composite leading indicators indicate that economic growth remains above trend, but is moderating in the OECD area as a whole.

The organisation said in its monthly report today that signs of moderating growth at above-trend levels in OECD economies – first signalled in last month's assessment – have been confirmed in Canada, the eurozone as a whole including Germany and Italy, and in the UK. But the CLI for France indicates moderating growth and remains below trend.

The CLIs for the US and Japan point to stable growth above trend, it said.

In major emerging market countries, the CLIs for Russia and China point to steadily increasing growth above trend. The CLI for India remains below trend but continues to indicate stable growth, but for Brazil the CLI continues to anticipate a slowdown in growth from above trend.

The OECD reiterated again that its survey should be interpreted with care as "persisting uncertainties" may cause higher than usual fluctuations in the CLI and its components despite the lifting of Covid-19 lockdowns in some countries and progress in vaccination campaigns. While restrictions continue to be lifted in most of Europe, lockdowns have been reimposed in some Asia-Pacific countries.

By Gavin Attridge

US propane stocks expected to rise: Survey

US propane inventories are expected to post another seasonal build when the US Energy Information Administration (EIA) reports weekly stocks tomorrow.

Fourteen market participants surveyed by Argus predicted on average that inventories in the week ended 10 September rose by 1mn bl, with responses ranging from build of 500,000 bl to 1.5mn bl.

US propane inventories rose by 800,000 bl during the week ended 3 September, the EIA reported last week. Stocks stood at 70.1mn bl, 28pc below the same week in 2020.

By Yulia Golub

Storm causes Texas power, pipeline issues

Tropical storm Nicholas brought widespread power outages in the Houston, Texas, area today, knocking out some pipeline operations, including a major refined products line.

The storm briefly reached hurricane status as it made landfall at about 1:30am ET 20 miles southwest of Freeport, Texas, with 75mph sustained winds.

About 180,000 customers in the Houston area remain without power as of 5pm ET from a high of about 450,000 earlier today, according to utility CenterPoint Energy.

Butane: Mt Belvieu non-LST ratio to WTI

¢/USG



INDUSTRY NEWS

Colonial Pipeline has resumed service on its 1.5mn b/d gasoline-bearing Line 1 from Houston to Greensboro, North Carolina at 12:58pm ET, after shutting it and a diesel line early this morning because of power outages. The 1.2mn b/d distillates-carrying Line 2 along the same route will resume operations once product is made available from refiners, the company said.

Other midstream operators were assessing storm damage at Texas facilities.

Enterprise Products incurred minimal damage and all of its assets are operational, the company said. Enterprise operates the Echo crude terminal in Houston, the 450,000 b/d Midland to Echo crude pipeline, and various other assets in the area.

Magellan Midstream said several of its facilities and terminals are operating normally but it was waiting for full power restoration in order "to resume normal operations" at other assets along the Gulf Coast. The company provided no details on individual assets.

Magellan operates two large Permian-to-Houston crude pipelines, the 440,000 b/d BridgeTex and the 275,000 b/d Longhorn pipeline, as well as the Magellan East Houston (MEH) terminal.

All three liquefaction trains at the [Freeport LNG export terminal](#) were off line today, likely because of power outages.

Nicholas shifted to the east before landfall, sparing a direct hit on export facilities in Corpus Christi, Texas. NuStar Energy's Corpus Christi crude export terminal was not impacted by the storm.

Moda Midstream also reported no damage or power outage at its large marine export terminal at Ingleside, near Corpus Christi. Moda has resumed crude loadings at the facility.

Refinery, offshore impact limited

Texas and Louisiana refineries appear to have made it through the storm without major issues.

Phillips 66's 247,000 b/d Sweeny Refinery in Brazoria County, Texas, is operational and conducting post-storm assessments, while its 164,000 b/d Lake Charles complex in Louisiana is also operating as normal, the company said.

Citgo's 157,500 b/d refinery in Corpus Christi, Texas, was operating normally today, as was its 425,000 b/d refinery in Lake Charles.

ExxonMobil's 557,000 b/d Baytown and 362,000 b/d Beaumont refineries are operating as normal today, with "no significant damage or flooding" observed on first checks, the company told Argus.

Assessments were ongoing at Shell's 340,000 b/d facility in Deer Park, Texas, with no serious damage observed from wind, rain or storm surge thus far.

Chevron did not lose power at its 100,000 b/d Pasadena refinery near Houston, where operations remain normal. LyondellBasell's Gulf coast assets, which include the 268,000 b/d Houston Refining facility, were undamaged, although the company shut its Matagorda polymer complex in Bay City, Texas, because of a widespread power outage.

In the offshore, Shell shut in production at its Perdido platform in the southwestern Gulf of Mexico last night because of high winds from the storm.

"Perdido is now ready to re-start contingent on power being restored at a non-Shell downstream facility that lost power during the storm," the company said. There is no timetable on when the power will be restored.

Nicholas was expected to continue to bring strong winds and heavy rains to other key energy hubs in Texas and Louisiana today, including the Beaumont/Port Arthur, Texas, area and Lake Charles, Louisiana.

The storm came about two weeks after Hurricane Ida hit the coast of Louisiana, causing lingering disruptions to offshore oil and gas production and refinery operations.

About 720,000 b/d, or 40pc, of offshore Gulf of Mexico crude output was still shut as of 12:30pm ET today, the Bureau of Safety and Environmental Enforcement said.

Ports in the Houston area remained closed today. The Port of Houston is expected to resume cargo operations tonight and container operations tomorrow.

Tanker lightering operations off Corpus Christi, Galveston, Texas, and Sabine Pass on the Texas/Louisiana border were discontinued as Nicholas approached and remained shut this morning.

The storm also disrupted air travel. Nearly 200 flights have been cancelled at Houston Bush Intercontinental Airport, with another 112 delayed as of 4pm ET, according to flight-tracking service FlightAware.

By Eunice Bridges and Dylan Chase

Lyondell shuts HDPE plant in Bay City, Texas

LyondellBasell has shut down its 821,000 t/yr high density polyethylene (HDPE) Matagorda complex in Bay City, Texas, due to widespread power outages in the aftermath of tropical storm Nicholas.

The storm briefly reached hurricane status as it came ashore at about 1:30am ET 20 miles southwest of Freeport, Texas. The storm knocked out power to more than 450,000 customers in the Houston area. It also resulted in wide-

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spread power outages in the Bay City area, a spokesman for LyondellBasell said.

The company offered no estimate on when the facility will restart.

LyondellBasell's other US Gulf coast facilities are operating as planned, the spokesman said.

The fresh outages will contribute to tight supply for HDPE in the US market, following earlier outages in Louisiana in the aftermath of Hurricane Ida, which hit on 29 August. In the immediate aftermath of that storm, roughly 18pc of total US PE capacity was down, although much of that capacity has either restarted or is in the process of restarting.

By Michelle Klump

Houston-area ports closed after storm

Ports in the Houston area remain closed today as Texas ports assess damage from tropical storm Nicholas, which brought rain and high winds to the state overnight.

The Port of Houston is expected to resume cargo operations tonight and container operations tomorrow.

All of the port's terminals, including Turning Basin Terminal, Barbours Cut and Bayport Container Terminals, will be closed today because of continued effects of Hurricane Nicholas, including widespread power outages, the port said. Vessel operations will resume at 8pm ET and terminal gates will open tomorrow morning.

Nicholas made landfall at 1:30am ET near Sargent Beach, Texas, with 75mph (120.7km/h) winds, storm surge and heavy rains. Nicholas briefly became a hurricane before it came ashore, with winds that knocked out power to more than 450,000 customers in the Houston area, according to utility provider CenterPoint Energy.

The Port of Galveston is conducting assessments of the damage and expects to resume cargo operations this afternoon. The Port of Freeport is assessing its status amid power disruptions. The port of Texas City is assessing damage with minimal problems so far, according to the West Gulf Maritime Association.

The Port of Corpus Christi reopened this morning.

Heavy rainfall will fall along the Texas and Louisiana coasts, southern Mississippi, Alabama and the Florida Panhandle through Thursday, the National Hurricane Center said.

The ports of Lake Charles and Cameron in Louisiana remain open with restrictions.

Lightering operations on the US Gulf coast have stopped and are expected to be disrupted for a couple more days.

By Liz Ramanand

Chevron to triple spending on carbon goals

Chevron plans to triple spending on lower-carbon initiatives to more than \$10bn through 2028, as the oil industry faces mounting scrutiny over its plans to navigate the energy transition.

Chief executive Mike Wirth doubled down on his "high return, lower carbon" strategy by setting targets for boosting Chevron's renewable fuels, hydrogen and carbon capture business through the end of the decade.

The company is keen to avoid the fate of its larger rival, ExxonMobil, which was targeted by activist investors earlier this year over its lack of strategy in preparing for a lower-carbon world, and ended up losing three board members as a result. Chevron **shareholders in May defied** management by backing a motion calling on the company to tackle emissions from its customers.

The company said it plans to respond to shareholder calls for addressing those scope 3 emissions next month. "It's much easier to make a declaration of ambition than it is to actually have a plan to get there," Wirth cautioned. "This is a big complicated issue and we're not going to treat it like a simple pledge you sign without understanding it very well."

Chevron plans to boost spending on its lower-carbon business from an initial \$3bn. Its new investment plan includes \$2bn to lower the carbon intensity of the company's operations.

The company, which recently set up a lower-carbon unit, announced a number of green initiatives in the past few weeks in an effort to play up its environmental credentials.

Its new targets include expanding renewable natural gas production to 40,000 mmBtu/d, and boosting renewable fuels output capacity to 100,000 b/d to meet growing demand for renewable diesel and sustainable aviation fuel.

Chevron also aims to increase production of low-carbon hydrogen, including green hydrogen, to 150,000 metric tonnes/yr, while increasing carbon capture and offsets to 25mn t/yr by developing regional hubs.

Wirth defended the relatively small amount of cash being directed at Chevron's low-carbon efforts, given the company has an estimated annual capital spending plan of \$15bn to \$17bn over the next few years.

"Throwing more money at them faster in some cases isn't going to accelerate technology or market adoption," he told analysts.

Chevron anticipates its low-carbon businesses will produce "double digit" returns and result in cash flow in excess of \$1bn a year by 2030.

Analysts at RBC Capital Markets expressed surprise that

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Chevron did not mention any longer-term net zero-related goals, choosing instead to reiterate its 2028 upstream greenhouse gas intensity targets, which equate to a 35pc reduction from 2016 levels.

"We think this target is conservative and we were expecting the company to increase its ambition," RBC said in a note.

By *Stephen Cunningham*

Formosa fined for Clean Air Act violations

Formosa Plastics has agreed to pay a \$3.85mn fine to the Environmental Protection Agency (EPA) for violations of the Clean Air Act (CAA) at its petrochemical manufacturing plant in Point Comfort, Texas.

The EPA alleges Formosa committed 20 violations of the Chemical Accident Prevention Provisions of the CAA. These provisions are designed to prevent the accidental release of hazardous substances that could cause injury to plant workers.

The EPA said, "Formosa repeatedly failed to comply with the chemical accident prevention provisions of the Clean Air Act at the Point Comfort plant, repeatedly placing their workers, neighbors and the environment in danger."

As part of the penalties, Formosa will be required to update incident response and safety plans. The company must also conduct third party audits on risk management procedures and make proper adjustments from audit results.

The EPA's investigation of Formosa was spurred by a series of fires, explosions, and accidental releases that caused injury to employees at the Point Comfort plant between 2013 and 2016.

Formosa manufactures olefins, LLDPE, HDPE, polypropylene, chlor-alkali, ethylene dichloride, and PVC at the Point Comfort plant.

By *Austin Jones*

Biden to fill Democratic vacancies at CFTC

President Joe Biden has made nominations to two Democratic vacancies at the US Commodity Futures Trading Commission (CFTC) and plans to make acting chairman Rostin Behnam the agency's official leader in a second term.

The nominations, if confirmed by the US Senate, would give Democrats a 3-1 voting majority at the CFTC they could use to revisit the agency's approach to regulating derivatives used by banks, commodity traders, energy companies, metal producers and others. Behnam has focused in particular on the need to account for climate-related financial risks and improving customer protections.

Biden intends to nominate Kristin Johnson, a professor at Emory University School of Law who has focused on financial markets risk management, to one of the Democratic seats. The other nomination would go to Christy Goldsmith Romero, who is special inspector general for the Troubled Assets Relief Program created after the 2007-08 financial crisis and previously served as counsel to the US Securities and Exchange Commission.

Democrats now hold a 2-1 majority on the CFTC, but Democratic commissioner Dan Berkovitz plans to exit the agency on 15 October. The White House said that Biden will nominate Behnam to a second term and appoint him as the CFTC's official chairman.

By *Chris Knight*

Democrats try to unify on \$3.5 trillion bill

Democratic leaders in the US Congress are citing the need to act on climate change as they attempt to find agreement on a fast-moving \$3.5 trillion budget when they have little room for dissenting votes.

The budget measure as drafted seeks to raise taxes on large corporations, provide \$300bn in clean energy tax credits, impose [new taxes on the oil sector](#), overhaul federal oil and gas leasing and impose a price on oil sector methane emissions. US House of Representatives committees held markups today, as Democratic leaders attempt to meet a self-imposed 15 September deadline to finish work on their portions of bill.

But Democrats still must sort out how much of those bills can pass in both the House and the evenly-divided US Senate, where moderates such as Joe Manchin (D-West Virginia) have balked at the bill's price tag. Senate majority leader Chuck Schumer (D-New York) said today there will be "intense discussions" in the next few weeks but was optimistic Democrats can unify. Schumer on 13 September said Democrats cannot lose their opportunity to act on climate change.

"The Senate will act in a way that is commensurate with the magnitude of the climate crisis by reducing carbon pollution, making our infrastructure more resilient, creating green jobs in the future," he said at a rally near the Capitol.

House debate today focused on key parts of the budget, including a tax credit of up to \$12,500 for electric vehicles made primarily in the US by union workers. Republicans argue the tax credit is wasteful because it could be partially available to families earning up to \$800,000/yr. They also worry domestic supply chains cannot scale up quickly enough to manufacture large numbers of electric vehicles.

"We are trading dependence on foreign oil for dependence on rare earth minerals and batteries from China," House Ways and Means Committee member Drew Ferguson (R-Georgia) said today.

The House Energy and Commerce Committee on 13 September voted to back a [methane "fee" on emissions](#) that would initially apply to about 2,400 large oil and gas facilities. The committee revised the fee to set it at \$1,500 per metric tonne of methane, rather than basing the fee on its CO₂-equivalent emissions, and delayed fee collection by a year until 2023.

Complicating budget negotiations are three approaching deadlines.

House speaker Nancy Pelosi (D-California) has pledged to vote on 27 September on a separate \$1 trillion infrastructure bill, which some Democrats might oppose if it is not paired with the budget. Congress also needs a bipartisan funding deal to avoid a partial government shutdown after 30 September. Finally, Congress needs to raise the US debt limit by next month to avoid a potentially catastrophic default, according to US treasury secretary Janet Yellen.

But Republican leaders are threatening to vote against increasing the debt limit. Senate minority leader Mitch McConnell (R-Kentucky) said if Democrats want to vastly increase spending and raise taxes without Republican input, then they can "come up with the financing on their own as well." Democrats argue Republicans are trying change the

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rules when they are out of power, noting Democrats voted to raise the debt limit when former president Donald Trump was in office.

President Joe Biden, hoping to push congressional Democrats to pass the budget, is citing the growing cost in the US from climate change, in the form of more extreme weather and droughts.

The world will be in "deep trouble" if global leaders are unable to dramatically reduce emissions and keep global warming below 1.5° C, Biden said during a visit to California to view wildfire damage. US wildfires this year have burned nearly 5.3mn acres, roughly the size of New Jersey, he said. *By Chris Knight*



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