

OVERVIEW

■ LST propane at Mont Belvieu, Texas, rose by 1¢/USG to a 10-week high, exceeding gains in crude, and was valued at a stronger 50.2pc of Nymex WTI, its highest value versus crude since 23 June.

■ Mont Belvieu, Texas, EPC ethane surged alongside gains in natural gas.

■ January-loading propane cargoes rose in discussions as a modestly wider arbitrage and declines in freight bolstered netbacks on paper.

■ Mont Belvieu, Texas, EPC butane fell by 0.375¢/USG Friday, paring gains seen earlier in the week, and was valued at a weaker 48pc of Nymex RBOB.

■ Edmonton, Alberta, propane rose as temperatures in the region fell.

US Gulf coast LPG			
	Low	High	Mean
Propane			
fob USGC, diff to Mont Belvieu ¢/USG	+8.000	+8.500	+8.250
fob USGC ¢/USG	77.250	77.750	77.5000
fob USGC \$/t	402.5	405.1	403.8
del Japan (AUSJ) \$/t	525.5	528.0	
del ARA (AUSE) \$/t	469.5	472.0	
Propane AFEI™ USGC netback \$/t			357.02
Butane			
fob USGC ¢/USG	98.500	99.000	98.7500
fob USGC \$/t	446.2	448.5	447.34
Ethane			
fob USGC, diff to Mont Belvieu ¢/USG	+9.000	+10.000	+9.500
LPG freight			\$/t
			Rate
MGC Houston-Tuxpan			15.87
VLGC Houston-Chiba (via Panama)			123
VLGC Houston-Flushing			67

SPOT MARKET TRADE RANGES

Mont Belvieu				¢/USG	
	Month	Low	High	Mean	VWA
E/P mix Enterprise	Wet	26.625	27.125	26.875	
	Dec	26.625	27.125	26.875	26.875
	Jan	26.375	26.875	26.625	
Ethane Enterprise	Wet	30.750	31.250	31.000	
	Dec	30.750	31.250	31.000	31.034
	Jan	30.500	31.000	30.750	
Ethane Targa	Wet	31.000	31.125	31.063	
	Dec	31.000	31.125	31.063	31.063
	Jan	30.500	31.000	30.750	
Propane LST	Wet	71.250	72.125	71.688	
	Dec	71.250	72.125	71.688	71.544
	Jan	71.375	71.875	71.625	
Propane Enterprise	Wet	68.000	69.625	68.813	
	Dec	68.000	69.625	68.813	68.965
	Jan	68.875	69.625	69.250	
Propane Targa	Wet	68.250	68.375	68.313	
	Dec	68.250	68.375	68.313	68.313
	Jan	69.000	69.125	69.063	
Refinery grade butane LST	Wet	85.875	86.375	86.125	
	Dec	84.375	87.375	85.875	85.875
	Jan	88.125	88.625	88.375	
Normal butane Enterprise	Wet	89.250	89.750	89.500	
	Dec	86.500	89.500	88.000	88.771
	Jan	90.250	90.750	90.500	
Isobutane LST	Wet	90.375	90.875	90.625	
	Dec	89.625	91.000	90.313	90.313
	Jan	90.750	91.250	91.000	
Isobutane Enterprise	Wet	89.625	90.125	89.875	
	Dec	88.875	90.250	89.563	89.344
	Jan	90.000	90.500	90.250	
Natural gasoline Enterprise	Wet	127.000	127.500	127.250	
	Dec	126.000	128.000	127.000	127.028
	Jan	125.250	125.500	125.375	
Natural gasoline LST	Wet	126.000	126.500	126.250	
	Dec	125.000	127.000	126.000	126.000
	Jan	124.250	124.500	124.375	
Natural gasoline Targa	Wet	126.375	126.875	126.625	
	Dec	126.000	126.750	126.375	126.375
	Jan	125.250	125.500	125.375	

*Tables include hyperlinks to those values maintained in the Argus database.

MONT BELVIEU LIGHT NGLS

LST propane at Mont Belvieu, Texas, rose by 1¢/USG to a 10-week high, exceeding gains in crude, and was valued at a stronger 50.2pc of Nymex WTI, its highest value versus crude since 23 June.

December LST propane opened 0.5¢/USG higher at 71.25¢/USG and traded as high as 72.125¢/USG during the afternoon, pushing the midpoint of trade to 71.75¢/USG, its highest level since 26 September. January LST propane traded between 71.375-71.875¢/USG, and December/January spreads priced the months at parity.

LST propane rose by 5.5¢/USG from 26 November, the final session of last week, driven largely by gains in crude and delivered propane prices in Asia. Propane's value versus WTI strengthened by 2.8 percentage points across the same period.

December EPC propane opened 0.25¢/USG higher at 68¢/USG and traded as high as 69.625¢/USG during the afternoon. January EPC propane traded between 68.875-69.625¢/USG, and December/January spreads priced the months at parity. February EPC propane was discussed between 69.125-69.375¢/USG. December spreads priced EPC propane at a 2.5-2.625¢/USG discount to LST.

December EPC ethane rose by 0.875¢/USG to the highest level since 3 April, lagging gains in Nymex natural gas at the Henry Hub. December ethane opened 0.625¢/USG higher at 30.75¢/USG and traded at a high of 31.25¢/USG during the morning. January EPC ethane traded at 30.75¢/USG, and a December/January spread traded at a 0.375¢/USG backwardation.

December Targa ethane traded between 31-31.125¢/USG and at parity to EPC in a spread.

MONT BELVIEU HEAVY NGLS

Mont Belvieu, Texas, EPC butane fell by 0.375¢/USG Friday, paring gains seen earlier in the week, and was valued at a weaker 48pc of Nymex RBOB.

December EPC butane opened 1.875¢/USG lower at 86.5¢/USG and rose as high as 89.5¢/USG by midday alongside gains in crude and gasoline futures. Wet butane barrels were bid higher, at 89.25¢/USG, widening prompt premiums versus any-month December. January EPC butane traded at 90.5¢/USG.

Bids and offers for December LST refinery-grade butane

Current month-to-date averages, Dec		¢/USG
	Mean MTD	VWA MTD
Mont Belvieu		
E/P mix Enterprise	26.025	26.025
Ethane Enterprise	30.150	30.016
Ethane Targa	30.175	30.175
Isobutane LST	91.238	91.238
Isobutane Enterprise	90.488	90.437
Natural gasoline Enterprise	125.625	125.768
Natural gasoline LST	125.225	125.225
Natural gasoline Targa	125.050	125.050
Propane LST	69.975	70.087
Propane Enterprise	67.513	67.587
Propane Targa	67.788	67.788
Butane LST	85.163	85.163
Butane Enterprise	87.400	87.709
Conway		
E/P mix	19.000	19.169
Propane	64.225	64.868
Butane	88.700	88.683
Isobutane	95.850	95.850
Natural gasoline	122.025	122.063
Rail natural gasoline	127.525	na

remained wide, and refinery-grade was assessed at a steady 2.125¢/USG discount to normal.

December EPC isobutane fell by 0.5¢/USG alongside weakness in butane. December EPC isobutane opened 1.125¢/USG lower at 89¢/USG and fell to 88.875¢/USG before recovering to 90.25¢/USG by midday. A December spread versus normal butane priced isobutane at a 0.75¢/USG premium. January EPC isobutane traded at 90.25¢/USG, and a December/January spread priced the months at parity.

December EPC natural gasoline rose by 1¢/USG, supported by gains in crude, and was valued at a stronger 88.8pc of Nymex WTI. December EPC natural gasoline opened 0.5¢/USG higher at 126.5¢/USG and fell to 126¢/USG before rising as high as 128¢/USG by midday. January EPC natural gasoline was discussed at a backwardation to December, between 125.25-125.5¢/USG, during the afternoon.

December LST natural gasoline was assessed at a wider 1¢/USG discount to EPC based on discussions. December Targa natural gasoline was offered as low as 126.75¢/USG and was assessed below that level.

NGL fractionation spreads

	¢/USG	\$/mmBtu
Gulf, Mont Belvieu		
Ethane Enterprise	2.533	2.054
Propane Enterprise	27.701	2.270
Normal butane Enterprise	42.921	0.811
Isobutane Enterprise	45.141	0.577
Natural gasoline Enterprise	77.469	1.377
Total barrel value		7.089
Total barrel frac spread		2.599
Midcontinent, Conway		
Ethane-propane mix	-4.527	1.428
Propane	29.572	2.218
Normal butane	46.748	0.810
Iso-butane	56.002	0.623
Natural gasoline	77.127	1.329
Total barrel value		6.408
Total barrel frac spread		2.293

CONWAY LIGHT NGLS

Conway, Kansas, propane rose by 1.375¢/USG Friday as the region experiences higher heating demand. Forecasters showed parts of the northeastern US and midcontinent with temperatures as low as -12°C (10° Fahrenheit) and -9°C (16° Fahrenheit), respectively. Crude futures and propane at Mont Belvieu, Texas, also rose. Conway propane was valued at a stronger 46.48pc of Nymex WTI.

December propane opened 0.125¢/USG lower at 65¢/USG and traded between 64.75-68.25¢/USG thereafter. Wet barrels traded at 67.25¢/USG, and January propane traded between 69.25-69.75¢/USG. A December/January spread traded at a 2¢/USG carry.

December E/P mix rose by 2.625¢/USG alongside gains in EPC ethane at Mont Belvieu, opening 1.625¢/USG higher at 20.625¢/USG and rising as high as 22.5¢/USG.

CONWAY HEAVY NGLS

Conway, Kansas, heavy NGLs rose Friday in active trading.

December butane strengthened by 0.25¢/USG alongside gains in gasoline futures, and was valued at a slightly weaker 48.59pc of Nymex RBOB. December butane opened 0.625¢/USG stronger at 89.5¢/USG and fell to 88.625¢/USG thereafter. Wet barrels traded between 88.875¢/USG and 90¢/USG. January butane traded at 90¢/USG. December/January spreads twice at a 0.75¢/USG carry. Spreads between wet and any-December butane priced wet barrels between a 0.25¢/USG and 0.5¢/USG premium to any-December.

SPOT MARKET TRADE RANGES

Conway					
	Month	Low	High	Mean	VWA
E/P mix	Wet	20.625	22.500	21.563	
	Dec	20.625	22.500	21.563	21.781
	Jan	22.750	23.250	23.000	
Propane	Wet	67.000	67.500	67.250	
	Dec	64.750	68.250	66.500	67.208
	Jan	69.250	69.750	69.500	
Normal butane	Wet	88.875	90.000	89.438	
	Dec	88.625	89.500	89.063	89.167
	Jan	89.750	90.250	90.000	
Isobutane	Wet	96.750	97.250	97.000	
	Dec	96.750	97.250	97.000	97.000
	Jan	97.250	97.750	97.500	
Natural gasoline	Wet	122.500	123.000	122.750	
	Dec	122.500	123.000	122.750	122.750
	Jan	123.500	124.000	123.750	
Rail natural gasoline	Dec	128.000	128.500	128.250	

Hattiesburg					
	Month	Low	High	Mean	Mean MTD
Propane	Dec	69.750	70.250	70.000	67.7500

Bushton					
	Month	Low	High	Mean	Mean MTD
Propane	Dec	67.000	67.500	67.250	64.9750

Napoleonville					
	Month	Low	High	Mean	Mean MTD
E/P Mix	Dec	8.875	9.375	9.125	11.4752
Ethane	Dec	13.000	13.500	13.250	14.0002
Propane	Dec	47.313	47.813	47.563	47.0128
Normal butane	Dec	65.125	65.625	65.375	64.3502
Isobutane	Dec	66.313	66.813	66.563	67.8876
Natural gasoline	Dec	105.625	106.125	105.875	105.6000

Northeast markets					
		Low	High	Mean	Mean MTD
NYH butane		118.000	122.000	120.000	118.325

December isobutane rose by 1.5¢/USG, trading at 97¢/USG.

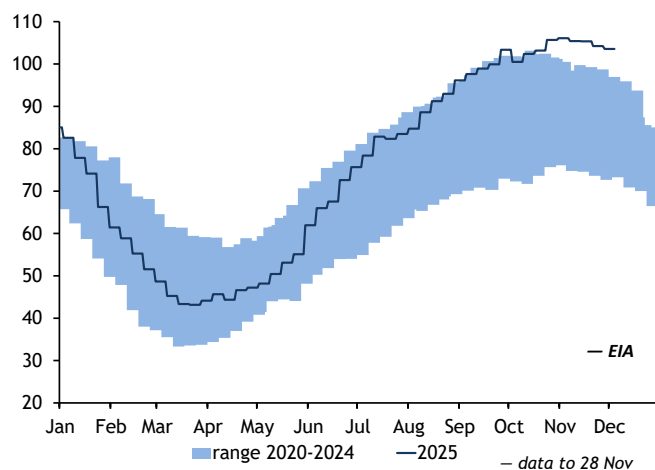
December natural gasoline rose by 0.75¢/USG, lagging gains in crude. Natural gasoline traded at 122.75¢/USG, and was valued at a slightly weaker 85.81pc of Nymex WTI.

NGL spot deals			
	Timing	¢/USG	bl
Butane Conway	Dec	88.625	5,000
	Dec	88.625	5,000
	Dec	89.250	15,000
	Dec	89.250	10,000
	Dec	89.500	5,000
	Dec	89.500	5,000
	Dec/Jan	-0.750	15,000
	Dec/Jan	-0.750	10,000
	Jan	90.000	15,000
	Jan	90.000	10,000
	wet/Dec	0.250	5,000
	wet/Dec	0.500	5,000
	wet	88.875	5,000
	wet	88.875	5,000
	wet	90.000	5,000
Butane EPC	Dec	86.500	10,000
	Dec	88.500	10,000
	Dec	89.250	10,000
	Dec	89.375	10,000
	Dec	89.500	10,000
	Dec	89.500	10,000
Butane EPC/Isobutane EPC	Dec	90.500	10,000
	Dec	-0.750	10,000
	Dec	-0.750	10,000
E/P mix Conway	Dec	20.625	5,000
	Dec	22.000	10,000
	Dec	22.500	5,000
Ethane EPC	Dec	30.750	10,000
	Dec	30.750	10,000
	Dec	31.000	20,000
	Dec	31.000	15,000
	Dec	31.000	15,000
	Dec	31.000	10,000
	Dec	31.000	10,000
	Dec	31.000	10,000
	Dec	31.000	10,000
	Dec	31.000	10,000
	Dec	31.000	10,000
	Dec	31.125	25,000
	Dec	31.125	10,000
	Dec	31.125	10,000
	Dec	31.125	10,000
	Dec	31.125	10,000
	Dec	31.125	10,000
	Dec	31.250	10,000
	Dec/Jan	0.375	25,000
	Jan	30.750	25,000
Ethane Targa	Dec	31.000	10,000
	Dec	31.125	10,000
Ethane Targa/Ethane EPC	Dec	0.000	10,000
Isobutane Conway	Dec	97.000	5,000
	Dec	97.000	5,000
Isobutane EPC	Dec	88.875	10,000
	Dec	89.000	10,000
	Dec	89.250	10,000
	Dec	90.250	10,000
	Dec/Jan	0.000	10,000
	Jan	90.250	10,000
Natural gasoline Conway	Dec	122.750	5,000
Natural gasoline EPC	Dec	126.000	10,000
	Dec	126.125	10,000
	Dec	126.250	10,000
	Dec	126.375	10,000

NGL spot deals			
	Timing	¢/USG	bl
	Dec	126.500	10,000
	Dec	126.750	5,000
	Dec	127.250	10,000
	Dec	127.250	10,000
	Dec	127.375	10,000
	Dec	127.500	10,000
	Dec	127.500	10,000
	Dec	127.625	10,000
	Dec	127.750	10,000
	Dec	128.000	10,000
Propane Conway	Dec	64.750	5,000
	Dec	64.750	5,000
	Dec	65.000	5,000
	Dec	65.250	5,000
	Dec	66.750	10,000
	Dec	67.000	5,000
	Dec	67.000	5,000
	Dec	67.250	10,000
	Dec	67.250	5,000
	Dec	67.250	5,000
	Dec	67.500	15,000
	Dec	67.500	10,000
	Dec	67.750	20,000
	Dec	67.750	10,000
	Dec	68.000	5,000
	Dec	68.000	5,000
	Dec	68.000	5,000
	Dec	68.250	10,000
	Dec/Jan	-2.000	10,000
	Jan	69.250	20,000
	Jan	69.750	10,000
	wet	67.250	5,000

EIA propane stocks

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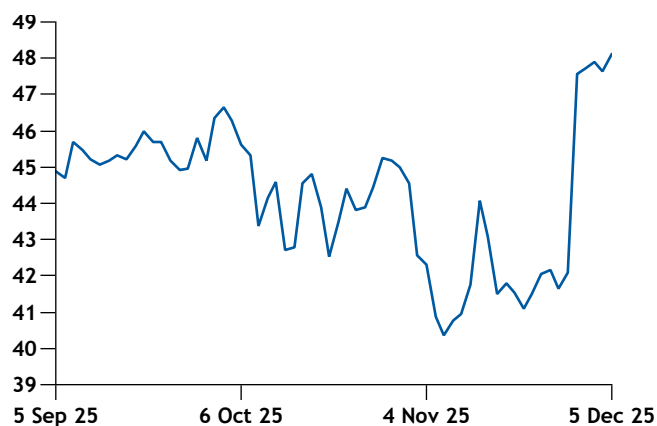


NGL spot deals			
	Timing	¢/USG	bl
Propane EPC	Dec	68.000	10,000
	Dec	68.250	10,000
	Dec	68.250	10,000
	Dec	68.375	10,000
	Dec	68.375	10,000
	Dec	68.375	10,000
	Dec	68.500	10,000
	Dec	68.500	10,000
	Dec	68.500	10,000
	Dec	68.625	10,000
	Dec	68.625	10,000
	Dec	68.750	10,000
	Dec	68.750	10,000
	Dec	68.875	15,000
	Dec	68.875	10,000
	Dec	68.875	10,000
	Dec	68.875	10,000
	Dec	68.875	10,000
	Dec	68.875	10,000
	Dec	69.000	10,000
	Dec	69.000	10,000
	Dec	69.125	10,000
	Dec	69.250	20,000
	Dec	69.250	10,000
	Dec	69.375	10,000
	Dec	69.375	10,000
	Dec	68.875	10,000
	Dec	68.875	10,000
	Dec	69.500	10,000
	Dec	69.500	10,000
	Dec	69.625	30,000
	Dec	69.625	25,000
	Dec	69.625	10,000
	Dec/Jan	0.000	30,000
	Dec/Jan	0.000	25,000
	Dec/Jan	0.000	20,000

NGL spot deals			
	Timing	¢/USG	bl
Propane Hattiesburg	Dec/Jan	0.000	15,000
	Dec/Jan	0.000	10,000
	Dec/Jan	0.000	10,000
	Jan	68.875	15,000
	Jan	68.875	10,000
	Jan	69.000	10,000
	Jan	69.250	30,000
	Jan	69.250	20,000
	Jan	69.625	30,000
	Jan	69.625	25,000
	Dec	70.000	5,000
	wet	69.000	15,000
Propane LST	Dec	71.250	15,000
	Dec	71.250	10,000
	Dec	71.250	10,000
	Dec	71.250	10,000
	Dec	71.375	15,000
	Dec	71.500	10,000
	Dec	71.500	10,000
	Dec	71.500	10,000
	Dec	71.500	10,000
	Dec	71.500	10,000
	Dec	71.500	10,000
	Dec	71.500	10,000
	Dec	71.625	10,000
	Dec	71.875	10,000
	Dec	72.000	10,000
	Dec	72.125	10,000
Propane LST/Propane EPC	Dec	72.250	5,000
	Dec/Jan	0.000	15,000
	Dec/Jan	0.000	10,000
	Dec/Jan	0.000	10,000
	Jan	71.375	15,000
	Jan	71.500	10,000
	Jan	71.875	10,000
	Dec	2.500	10,000
	Dec	2.625	10,000

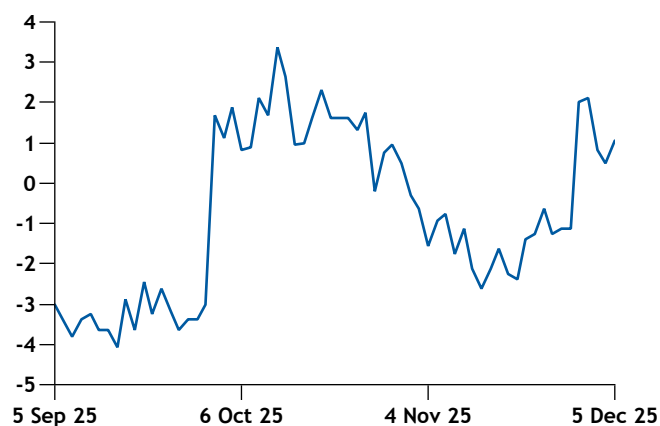
Enterprise propane % of Nymex WTI

%



Conway butane vs Enterprise butane

¢/USG



NORTHEAST

No new deals were reported for railed butane into the New York Harbor. Barring new evidence, NYH butane was assessed steady, between a 30¢/USG and a 34¢/USG premium to EPC butane at Mont Belvieu, Texas.

CANADA

Edmonton, Alberta, in-well propane rose in discussions versus the US midcontinent, as Environment Canada reports temperatures in the area to have dropped significantly, from a mean temperature of -1.2°C (29.84° Fahrenheit) Thursday to -13°C (8.6°F) Friday, driving up heating demand. Edmonton propane at the Keyera fractionator was discussed between an 8¢/USG and 5¢/USG discount to propane at Conway, Kansas, and was assessed at that level. The discount is 10.2¢/USG tighter than the five-year-average discount of 16.7¢/USG relative to Conway for this time of year. The latest available data indicates propane inventories in western Canada began November 5.7pc below year-earlier levels, and that and a colder December is adding to bullish sentiment.

Edmonton butane rose versus crude, with a trade at the Keyera fractionator reported at 50pc of the calendar-month average of Nymex WTI. January butane at the Redwater fractionator was discussed between 49.5pc and 51pc of CMA WTI.

No new deals were reported for propane in Sarnia, Ontario, which was assessed unchanged, between a 10¢/USG to 12¢/USG premium to LST propane at Mont Belvieu, Texas.

No new deals were reported for Sarnia butane or isobutane. Sarnia butane was assessed steady, between a 0.5¢/USG to 3.5¢/USG premium to EPC butane at Mont Belvieu, barring new evidence, and Sarnia isobutane was assessed at parity to EPC isobutane.

CANADA

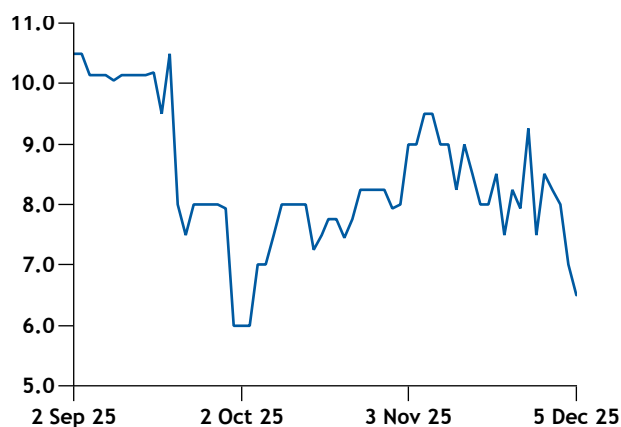
Edmonton					¢/USG
Daily	Month	Low	High	Mean	Mean MTD
Propane	Dec	58.500	61.500	60.000	56.575
Diff to Conway	Dec	-8.000	-5.000	-6.500	-7.650
Field grade butane	Dec	70.250	71.000	70.625	69.088
Can. condensate \$/bl	Jan	59.74	60.04	59.890	
Diff to Nymex CMA \$/bl	Jan	+0.050	+0.350	+0.200	
AFEI™ netback to Edmonton propane \$/t					262.419

Sarnia					¢/USG
Daily	Month	Low	High	Mean	Mean MTD
Propane	Dec	81.750	83.750	82.750	79.525
Diff to LST	Dec	+10.063	+12.063	+11.063	9.550
Butane	Dec	88.500	91.500	90.000	89.425
Diff to LST	Dec	+2.625	+5.625	+4.125	4.263
Isobutane	Dec	89.375	89.875	89.625	90.500
Diff to LST	Dec	-0.938	-0.438	-0.688	-0.738

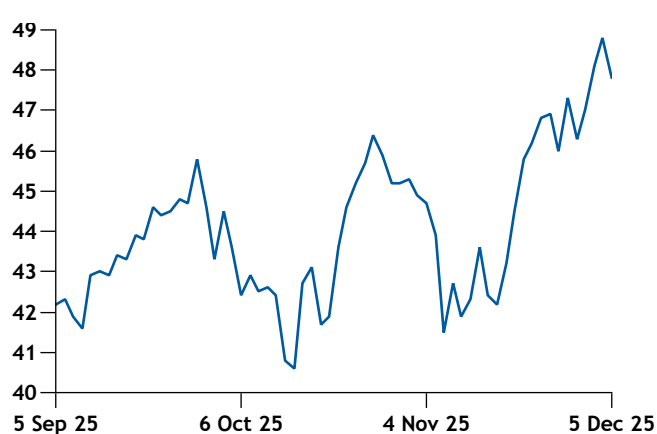
BRAZIL

Delivered LPG Brazil		\$/t	
	Mid	±	
Propane Santos	495.3958	+18.8307	
Propane-butane 90:10 Santos	499.7673	+18.1287	
Propane-butane 70:30 Santos	508.5103	+16.7248	
Propane-butane 50:50 Santos	517.2533	+15.3209	
Propane Suape	471.2729	+18.8540	
Propane-butane 90:10 Suape	475.6444	+18.1520	
Propane-butane 70:30 Suape	484.3874	+16.7481	
Propane-butane 50:50 Suape	493.1304	+15.3442	

Conway propane vs Edmonton propane ¢/USG



Enterprise butane % of USGC 87 gasoline %



US EXPORTS

The propane arbitrage on paper to Asia widened slightly Friday, with January AFEI/LST trading between \$151-153/t during the morning.

The wider arbitrage on paper and declining VLGC freight, with a fixture reported below \$120/t on Friday on a Houston-Chiba basis, bolstered netbacks on paper and prompted buyers to re-engage. An early January propane loading was resold at Mont Belvieu EPC +8¢/USG, and discussions remained at or just above that level thereafter.

The lower VLGC freight and the wider arbitrage bolstered bullish sentiment, especially as upcoming maintenance work in Houston later this month is expected to lead to fewer cargoes on offer on a spot basis in the weeks ahead.

EUROPE/ASIA

Northwest Europe

Gunvor entered the market on the final working day of the week with an inquiry for a ToT23 cargo for delivery on 22-26 December, starting at 50pc \$480/t and December cif ARA +\$8/t. The bid was later revised to 50:50 \$485/t and December +\$9.50/t, equivalent to \$484.875/t cif Antwerp, or \$482.84/t cif Flushing. The attempt once again failed to attract selling interest, and no deal was concluded.

Market participants noted that the last propane deal was done in the mid-to-high teens relative to paper, at \$16.50/t at the time, and consensus suggests that this level is likely required remains to attract selling interest, leaving an at least a \$6-9/t gap between the current bid and the level likely to spark a deal. While this premium is steep, with demand from the Asia-Pacific region is rising, the potential level required to secure US product could even increase further. On Friday large cargo propane was assessed above the bid at \$485.75/t up by \$6/t.

Asia-Pacific

The Asian market extended gains on Friday on the back of firmer swaps values. January Argus Far East Index (AFEI) propane swaps rose by \$11/t day-on-day to close at \$523/t at Asian timestamp while the front-month Brent contract gained \$0.33/bl.

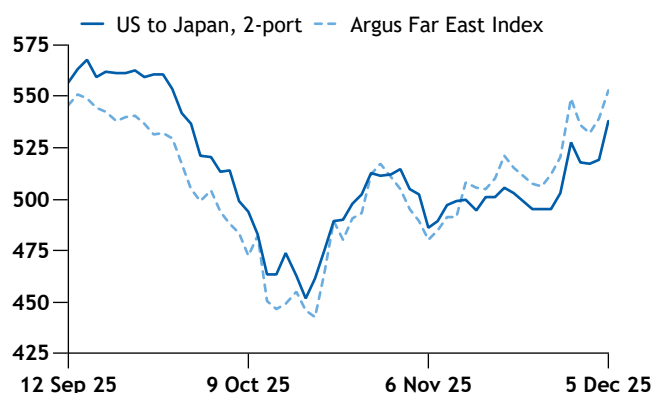
WTI comparisons: Percentage of crude			
	Mont Belvieu %	Conway %	Mont Belvieu / Conway spread %
Propane	48.1	46.5	+1.6
Propane LST	50.1		+3.6
Normal butane	61.5	62.3	-0.8
Isobutane	62.6	67.8	-5.2
Isobutane LST	63.1		-4.7
Natural gasoline	88.8	85.8	+3.0

Mont Belvieu grades are Enterprise except where noted

Ice daily weighted averages		¢/USG
	Timing	Averages
Mont Belvieu ethane	Dec	31.030
Mont Belvieu propane	Dec	71.450
Conway propane	Dec	67.000

USGC propane delivered Asia, 2-port vs FEI

USD/t

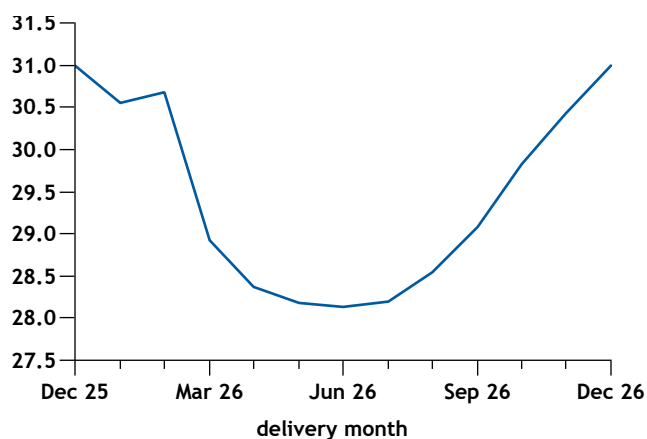


The afternoon window saw Trafigura return to bid for 23,000t propane arriving in first-half January basis Chiba at December AFEI +\$10/t but a technical glitch on the messaging platform approximately 13 minutes before Asian close of market halted further price updates. Service was restored only after timestamp. Itochu and Chevron each posted a bid on 23,000t propane for second-half January arrival at January AFEI +\$15/t and \$16/t respectively, while Petrochina was a buyer for 46,000t propane for second-half January delivery to Chiba at AFEI +\$10/t.

FORWARD CURVES

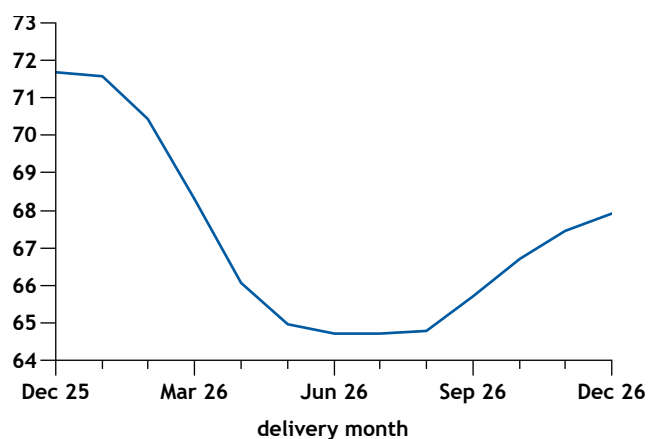
Mont Belvieu ethane

¢/USG



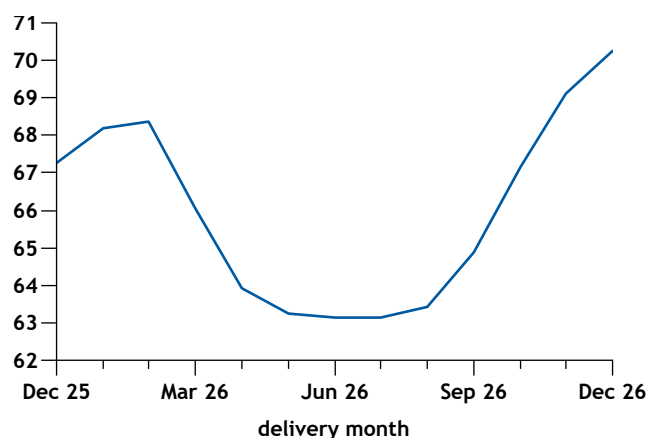
Mont Belvieu propane LST

¢/USG



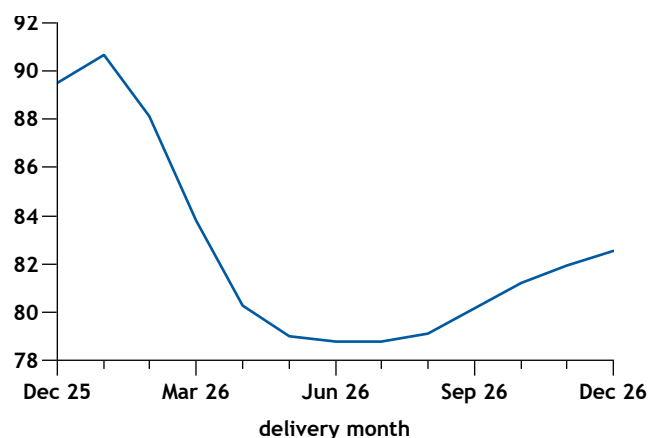
Conway propane

¢/USG



Mont Belvieu Enterprise butane

¢/USG



— Argus NGL Americas Forward Curves

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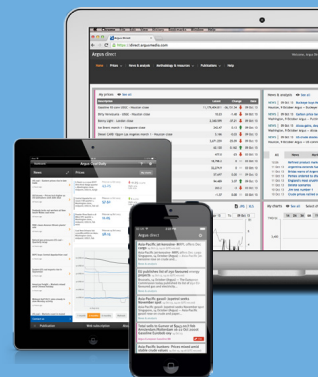
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RELATED MARKETS

Crude

US benchmark WTI crude rose Friday on growing speculation the Federal Reserve is preparing another interest rate cut as soon as next week, as well as geopolitical tensions from Venezuela to Ukraine.

January Nymex WTI rose by 41¢/bl to \$60.08/bl while February Ice Brent rose by 49¢/bl to \$63.75/bl. The February Brent-February WTI spread widened by 2¢/bl to \$3.97/bl.

WTI at the Magellan East Houston (MEH) terminal was discussed at a prompt 60-80¢/bl premium bid-ask spread to the Cushing benchmark, according to the Argus Crude Market Ticker (ACMT), down from Thursday's 86¢/bl volume-weighted average premium.

US personal spending rose by 0.3pc in September, down from 0.5pc the prior month, according to the Bureau of Economic Analysis, a sign consumers were slowing their spending before the 43-day partial federal government shutdown that began on 1 October. Probabilities of a quarter-point Fed rate cut next week were at 87.2pc Friday, down a point from Thursday, according to the CME FedWatch tool. A cut on 10 December would be the third of the year.

Gasoline

US Gulf coast gasoline cash differentials were mixed on Friday with some conventional grades firming while reformulated gasoline softened, causing RBOB to fetch the narrowest premium to CBOB in five sessions. Deals for Colonial 13.5 RVP regular CBOB (A4) were struck from January Nymex -12.5¢/USG to -11.5¢/USG on the second day of prompt trading for cycle 70. Trade levels trended higher through the session, with differentials rising by 0.38¢/USG in daily comparison.

Group Three 91 conventional gasoline sellers continuously eased their offers this week as government data showed a six-week high in total US midcontinent gasoline stockpiles. Group Three A grade 91 conventional gasoline was pegged by market participants at January Nymex -4¢/USG, decreasing cash differentials by 4¢/USG from the previous session and narrowing its premium to V grade to 15¢/USG.

Naphtha

Differentials for heavy and full-range N+A naphtha continued to strengthen amid stronger gasoline cracks on Friday.

Trading activity was sparse and skewed to barrels with less than 100ppm sulphur. This stronger trend was already noted

Petrochemical feedstock comparisons		
	¢/USG	\$/t
E/P mix	26.88	188.20
Purity ethane	31.00	228.78
Propane Enterprise	68.81	358.50
Butane Enterprise	88.00	397.53
Isobutane Enterprise	89.56	404.57
Natural gasoline Enterprise	127.00	533.40
Paraffinic naphtha 80 min	128.75	512.43
Reformer naphtha 40 N+A	142.78	517.97
Diesel 10ppm Colonial	220.67	685.84
Heating oil Colonial	197.12	609.06

Ethylene cash margins		¢/lb
		Margins
Purity ethane		0.630
Propane Enterprise		-6.020
Normal butane Enterprise		-8.440
Light naphtha		-19.120
Heating oil Colonial		-54.550

Global swaps			\$/t
US	Ethane	Propane	
Dec	230.83		359.41
Jan	228.96		361.69
Feb	228.41		361.04
Northwest Europe	Propane	Naphtha	
Dec	475.25		523.75
Jan	460.50		521.75
Feb	445.75		519.00
Asia-Pacific	Propane	Naphtha	
Dec	542.00		542.25
Jan	525.00		535.05
Feb	512.00		527.85

in the sale of a heavy virgin naphtha (HVN) with 58.9 API and 70ppm sulphur on Thursday. This quality traded at January Nymex RBOB -41¢/USG on a delivered Gulf coast basis. Generic heavy virgin naphtha (HVN) was assessed at January Nymex RBOB -43.5¢/USG< the previous day's midpoint, and -37.75¢/USG, delivered Gulf coast basis on Friday. On Friday, a trade was reported for 64 API naphtha with 99ppm sulphur at January Nymex RBOB -37.75¢/USG for delivery over the weekend. Talk that this trade was for a smaller volume on a pumpover was not directly confirmed. Although the API reflects more full-range qualities, the lower sulphur can pave the way into a higher-value gasoline blending market. A Calcasieu barge that was offered at January Nymex RBOB -42¢/USG on Thursday

was eventually heard traded at the said January Nymex RBOB -42¢/USG level on Friday. Calcasieu naphtha also has the potential to serve as a gasoline blendstock, thus despite overall full-range properties, its pricing tends to track closer to HVN. Generic full-range N+A naphtha intended as reformer feedstock remained pinned between a 5-6¢/USG discount to the generic heavy grade. Selling interest for a 67.5 API barge with 22.3ppm sulphur at January Nymex RBOB -47¢/USG was not reiterated on Friday. No trades were verified to this end.

Light virgin naphtha (LVN) differentials to natural gasoline (C5) continued to weaken on Friday amid closed arbitrage. Light naphtha was better supplied on the domestic front due to diminished export interest, which had pressured values, particularly for sour light straight run (LSR). A barge of LSR with 80.5 API, 68.5 AKI, 41ppm sulphur and 12.6 RVP was offered at C5 +3¢/USG and bid at flat to C5 early Friday. This barge was eventually heard traded at C5 +0.5¢/USG Friday afternoon, which was pegged at the bottom of the generic light virgin naphtha (LVN) price range. Another sour LSR quality out of Texas City was offered at C5 +2.75¢/USG and bid at C5 +1.5¢/USG early Friday as well. No deal was confirmed to this end.

Natural gas

US natural gas futures rallied Friday, ending at a fresh three-year high, on forecasts showing a prolonged bout of colder-than-normal weather, despite high gas inventories.

Nymex gas for January delivery at the Henry Hub rose by 22.6¢/mmBtu, or 4.5pc, to settle at \$5.289/mmBtu, the highest since 21 December 2022. The 12-month strip increased by 2.6pc to \$4.477/mmBtu, while the 2027-calendar strip was up by 0.7pc to \$4.071/mmBtu. Prompt-month prices ended the week 9.1pc higher than a week earlier on a cold start to December. That cold weather provided a jolt of winter heating demand following mostly mild weather in November.

The weather outlook Friday showed an increase in expected heating demand on colder weather next week and more intense cold at the end of the upcoming two-week period, according to the private forecaster Commodity Weather Group. The forecast showed slightly milder weather in coming days, but temperatures across key heating demand centers in the northeast and Midwest were still expected to remain below normal.

Colder-than-normal weather was expected across those regions and parts of the southeastern US through 19 December, while above-normal temperatures expand through the western

US, the forecaster said.

That cold weather will spur more demand for gas to heat homes and businesses. It will also support larger draws from gas storage, pulling high US gas stockpiles closer to average levels.

US gas inventories were headed into December at higher-than-average levels because rising prices had increased gas production. Mild weather in November, the start of the winter heating season, also limited demand.

US inventories in the four weeks ended on 28 November increased by 8 Bcf (227mn m³) as a large injection at the start of that month more than offset a string of three consecutive draws.

The cumulative inventory build for those weeks compares with a five-year-average drop for that period of 21 Bcf, according to US Energy Information Administration data. Heating demand in November was 5pc lower than the seasonal norm, the National Weather Service said.

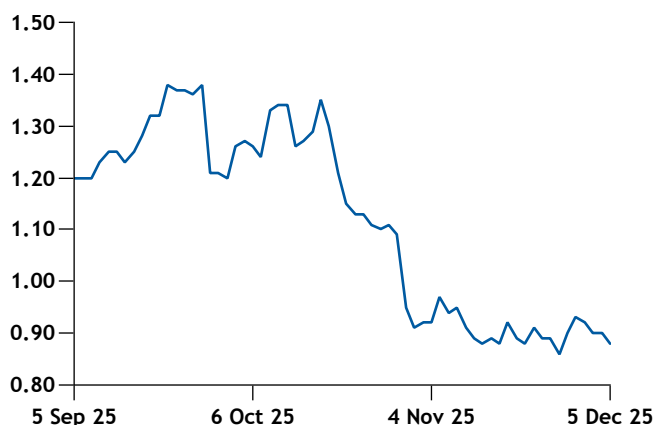
This week's cold, though, will likely result in a large draw from gas storage that more than offsets the lackluster heating needs in November.

In addition, demand for gas along the US Gulf coast has remained robust because of recent expansions of LNG export capacity. That capacity was expected to grow in the coming months at the Corpus Christi LNG terminal in Texas. The 2.4 Bcf/d Golden Pass LNG export terminal, also in Texas, was scheduled to start service either late this year or early next year.

The spot price at the Henry Hub rose by 29.5¢/mmBtu to \$5.19/mmBtu, while the price at Transco zone 6 in New York was up by \$1.505/mmBtu to \$8.83/mmBtu.

Enterprise ethane % Nymex natural gas

%



INDUSTRY NEWS

Argentina routes LPG supplies to China

Argentinian LPG supplies have started flowing to China, with at least three vessels making the journey this year following a five-year hiatus.

The very-large-gas-carrier (VLGC) *Gas Jupiter* departed the coastal city of Bahia Blanca with 51,024t of LPG on 3 December and is expected to arrive in China in mid-January, making it the third vessel – and the first VLGC – this year to sail the route, Kpler data shows. The VLGC will make the long transatlantic voyage around the Cape of Good Hope.

In July, the MGC *Lkey* was the first LPG-laden vessel in five years to voyage from Argentina to China, moving 20,849t of propane to China that month and sailing again in early November with a similar-sized volume. The MGC *Cerro Alto Explorer* embarked on the same route with 21,946t in early October.

Argentina LPG exports to China were more frequent just a few years earlier. Kpler data shows Argentina exported 44,000t of LPG to China in 2018, 46,000t in 2019, and another 46,000t in 2020. The removal of tariffs on US propane exports to China in 2020, which coincided with a boom in PDH expansions in that country, meant US LPG exports to China ballooned to nearly 6mn t in 2020, up from 62,000t in 2019, as more term contracts there eliminated the need for supplemental cargoes from Argentina.

However, with the tit-for-tat trade war between the US and China this year, Chinese buyers started to [diversify their LPG sources amid the risk of steep tariffs](#) on US exports to China. China has absorbed rare supplies from [Canada](#) and [Norway](#) against a backdrop of trade uncertainty and is now looking to South America, where Argentina has re-emerged as an LPG supplier.

Argentina to China flows may rise further as more Argentinian supplies make their way to the export market, driven by growing LPG production and a deregulation of the LPG market following decades of government intervention.

By Giovann Rosales

Brazil duties reshape US PVC export landscape

January-November US polyvinyl chloride (PVC) exports to Brazil fell by 11pc from a year earlier thanks to the government's decision to raise provisional anti-dumping duties on US PVC, according to official data from Brazil's Comexstat.

The duties surged to around 44pc from 8.2pc earlier this year.

The sharp increase in tariffs made US PVC far less competitive, prompting Brazilian buyers to shift to suppliers such as Colombia and Egypt, which posted strong gains during the same period.

Brazilian PVC imports rose by 14pc in January-November, reaching 570,420 metric tonnes (t), up from 500,800t in 2024. Import revenues rose to \$482mn in the 11-month period, up from \$420mn the previous year.

Exports totaled 3,040t, a 33pc drop from 4,560t in January-November 2024, with export revenues falling to \$3.74mn from \$5.82mn.

November imports reached 38,695t, 7.7pc above the 35,945t in the same month last year.

Colombia remained as the leading supplier, providing 14,604t – 38pc of total imports – followed by Egypt with 13,275t, or 34pc.

Exports in November grew to 399t, nearly triple from a year earlier. Argentina continued to be the main buyer, accounting for 84pc of total exports in the period, while Chile ranked second with 6.3pc.

By Isabela Mendes

Ukrainian drones hit Black Sea port

A Ukrainian drone attack caused a fire at the Russian Black Sea region port of Temryuk early on 5 December, state news agency Ria Novosti reports citing local emergency services.

No further details are available. Temryuk has handled around 120,500t of LPG and 27,400t of fuel oil exports this year, according to trade analytics platform Vortexa. In a related development, the mayor of Syzran in Samara region, Sergei Volodchenkov, reported that an air alert in the city was triggered by a drone attack. The city is home to Rosneft's 200,000 b/d Syzran refinery. Samara region governor Vyacheslav Fedorishchev reported an attack on an "industrial object" in Syzran on 22 November, without specifying exactly what had been hit. In November the plant completed repairs to a CDU and secondary units, which were damaged on 15 August after a drone attack. Other recent targets in the Ukrainian drone campaign against Russian energy infrastructure underway since August include the Black Sea ports of Tuapse and Novorossiysk, Lukoil's 290,000 b/d Volgograd refinery and the independent 120,000 b/d Afipsky plant in southern Russia.

European propane hits two-month high

European large cargo propane prices have hit a two-month high lifted by rising prompt demand, lower selling interest and some growing concerns about forward supply.

The cif Amsterdam-Rotterdam-Antwerp (ARA) large cargo price has gained \$36/t in the past two weeks to settle at \$479.75/t on 4 December, almost \$80/t above the late-October low of \$398/t.

More notably, large cargo propane's ratio to Ice Brent futures has gained four percentage points in two weeks and nearly eight percentage points since mid-October.

The recent price strength reflects a combination of regional fundamentals and possible shifts in global trade flows. Regionally, colder temperatures arrived with mid-November marking the first sustained cold spell of the season. This translated into firmer interest for prompt product.

But the European market remains heavily shaped by the continued arrival of record US supply. Nearly 800,000t of US LPG landed in Europe in November, according to Kpler data, leaving the region well supplied. For prices to sustain meaningful upward momentum, the region would need a more robust demand response than the intermittent inquiries seen so far.

Support has instead come from global fundamentals, particularly in Asia-Pacific. Buyers there have been placing sizeable orders for US cargoes for January delivery, a shift already reflected in the east-west paper spread that has widened sharply into the \$60s from levels in the \$30s in mid-October. This substantially improves US netbacks to the east, raising the likelihood that more US cargoes could be pulled away from Europe in early 2025.

This has amplified concern among European participants about future arrivals and has encouraged prompt buying while availability is assured. The emerging tightness is also evident on the forward curve, where the backwardation between December and January cif ARA swaps widened to \$15.75/t on 4 December, from \$4.50/t two weeks earlier. The steeper structure signals tightening prompt conditions rather than anticipation of looser fundamentals further forward.

Early December US LPG arrivals into northwest Europe appear to have slowed, with just 276,000t currently on route for delivery by 20 December. In prior months nearly double that amount would typically arrive within a similar timeframe.

The sustainability of the European propane price upswing will hinge on how aggressively Asia-Pacific buyers continue to draw US supply, and on whether European demand strengthens enough to compete with Asian prices.

By Efcharis Sgourou

EU provisionally OKs deforestation law delay

EU states and the European Parliament have provisionally agreed a one-year postponement of the application of the bloc's deforestation law (EUDR). The agreement updating the EUDR regulation still needs to be formally agreed and published before the end of the year.

The EUDR delay postpones application of due diligence requirements by one year for large and medium operators, with application now starting from 30 December 2026. On top of this one-year delay, an extra six months has been granted for small operators, such as private individuals, micro- and small firms, such that the EUDR will now apply from 30 June 2027. Only those micro- and small operators covered by the bloc's timber regulation (EUTR) will fall under EUDR application from 30 December 2026.

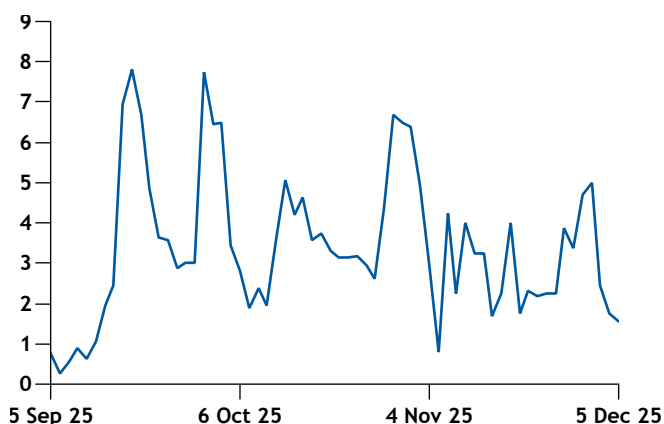
Without formal agreement and publication in the bloc's official journal, the EUDR would have entered into force on 31 December 2025 for listed commodities and derived products, notably cattle, cocoa, coffee, oil palm, rubber, soya, and wood.

The provisional deal also narrows the scope of operators to cover only those who first place listed products on the EU's market. And only the first downstream operator in a supply chain will have to collect and retain reference numbers of initial due diligence statements. The provisional deal also removes certain printed products, including books, newspapers, and printed pictures, from the EUDR's scope.

"We managed to swiftly address the capacity issues of the IT system and we will now work on the implementation of the law in the most efficient way possible," said EU environment commissioner Jessika Roswall. The commission adds that

Enterprise isobutane vs butane

€/USG



amendments reduce the data load on the IT system so as to be capable of handling due diligence statements and simplified declarations submitted by operators. And a simplified one-off declaration will be available for micro- and small primary operators in low-risk countries.

The deal reached by parliament and EU states further obliges the European Commission to carry out a "simplification" review accompanied by a report by 30 April 2026 that, where "appropriate", could include legislative proposals for additional simplification.

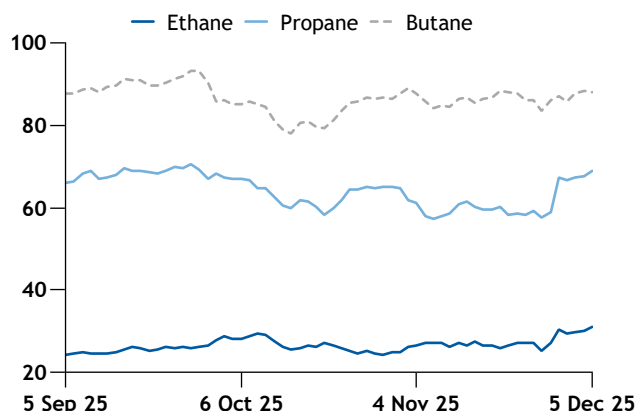
The EUDR originally should have been applied from 30 December 2024. But the bloc agreed an initial one-year delay to 30 December 2025. This has now been further extended by one year.

Parliament is expected to vote on the revised EUDR at its 15-18 December plenary session with EU states also formally approving the delay thereafter.

Dafydd ab Iago

NGL prices

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Argus NGL Americas is published by Argus Media group

Registered office

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ISSN: 1537-2200

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