

# Biofuelscan

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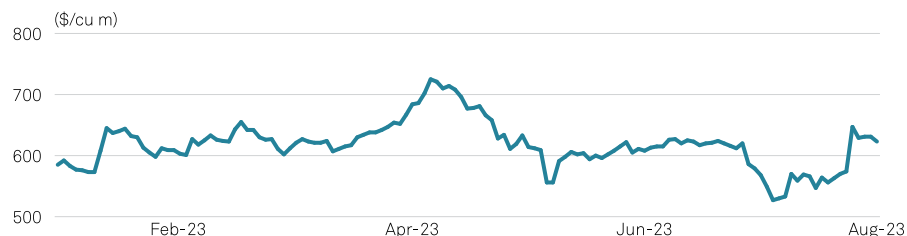
## Norway to introduce 6% biofuel mandate for domestic shipping

- Nordic country's new mandate to take effect from October
- RED-compliant HVO, FAME deemed as compliant fuels
- Norway has been pushing for green shipping regulations

Norway will require bunker suppliers to have at least 6% of their sales in domestic shipping from advanced biofuels from October, the government said Aug. 1 as it continues its push for a greener ship fuel.

[\(continued on page 21\)](#)

## Santos ethanol assessments



Source: S&P Global Commodity Insights

## Platts key daily ethanol assessments

		Low-High	Midpoint	Change
<b>United States (\$/gal) (PBF page 210)</b>				
Ethanol Chicago (terminal)	AALRI00	219.95-220.05	220.000	-3.700
Ethanol swap Chicago (Sep )	ESCM001	209.95-210.05	210.00	-9.50
<b>Brazil cargo assessments (\$/cu m) (PBF page 220)</b>				
Ethanol FOB Santos cargo	AAWFO00	622.95-623.05	623.00	-8.00
<b>Northwest Europe (€/cu m) (PBF page 1210)</b>				
Ethanol T2 FOB Rotterdam	AAYDT00	718.75-719.75	719.25	-4.50
<b>Asia Pacific (\$/cu m) (PBF page 2210)</b>				
Bioethanol CIF Philippines	AAWAA00	702.67-704.67	703.67	-30.33

## Platts key daily biodiesel assessments

		Low-High	Midpoint	Change
<b>Northwest Europe (\$/mt) (PBF page 1310)</b>				
FAME 0 (RED) FOB ARA	AAWGI00	1225.50-1230.50	1228.00	-50.50
RME (RED) FOB ARA	AAWKG00	1299.50-1304.50	1302.00	+16.50
UCOME (RED) FOB ARA (Eur/mt)	AUMEB00		1369.28	+28.59
UCO (RED) CIF ARA	AUCOA00		970.00	+0.00
<b>Northwest Europe premiums (\$/mt) (PBF page 1313)</b>				
FAME 0 (RED) FOB ARA	AAXNT00	324.50-329.50	327.00	-82.00
RME (RED) FOB ARA	AAXNU00	398.50-403.50	401.00	-15.00
UCOME (RED) FOB ARA	AUMEA00		600.00	-8.75
<b>United States (\$/gal) (PBF page 310)</b>				
Biodiesel B100 SME Chicago	AAURR00	563.30-563.40	563.35	+3.25
<b>Asia (\$/mt) (PBF page 2310)</b>				
Biodiesel FOB Southeast Asia	AAVSV00	980.90-981.10	981.00	-5.00
UCOME FOB China	UCFCA00		1095.00	+0.00
UCOME FOB Straits	UCFCB00		1130.00	+0.00
UCO FOB Straits	UCFCC00		940.00	+0.00
UCO North Asia	AUCOC00		930.00	+0.00

## Platts key daily renewable distillates

		Close	Change
<b>Northwest Europe (\$/mt) (PBF page 1013)</b>			
HVO	HVNW000	1703.312	+1.697
SAF	BJNWD00	1849.281	+2.174
<b>Americas (\$/gal) (PBF page 12)</b>			
SAF w/ credits	ASAFK00	591.404	+0.399
SAF w/o credits	ASAF000	157.600	+0.103
RD w/ credits	ARDFK00	566.488	+0.263
RD w/o credits	ARDF000	158.054	-0.091
<b>Southeast Asia (\$/mt) (PBF page 2013)</b>			
HVO (PFAD)	HVMAB00	1533.670	+15.870
SAF (PFAD)	ASMAA00	1665.150	+18.240
<b>North Asia (\$/mt) (PBF page 2013)</b>			
HVO (UCO)	HVNAA00	1659.990	-0.920
SAF (UCO)	ASFAC00	1802.930	-1.140

## Renewable distillates market commentary

### Platts Global Renewable Distillates Monthly Commentary

- Chinese UCO prices increase on month
- Neste production to decline in Q3: company
- Companies seek new production pathways, renewable feedstocks

Throughout July, sustainable aviation fuel and renewable diesel/HVO prices saw mixed movements alongside general increases in feedstock markets.

In Asia, the cost of production of SAF produced from used cooking oil rose \$95.31, or 5.6%, to end the month at \$1,804.07/mt July 31. UCO-based HVO followed the same pattern, rising \$99.87, of 6.4%, to \$1,660.91/mt.

Platts assessed the cost of production for PFAD-based SAF up \$18.32, of 1.1%, to \$1,646.91/mt on July 31. PFAD-based HVO rose \$29.68, or 2%, to \$1,517.80/mt.

In Europe, however, the cost of production for both SAF and HVO fell on the month in July. SAF production costs dropped \$35.291, or 1.9%, to \$1847.107/mt, while HVO production costs dropped \$17.728, or 1%, to \$1,701.615/mt.

Platts assessed US West Coast SAF with credits down 5.237 cents to \$5.91005/gal, and renewable diesel with credits down 2.558 cents to \$5.66225/gal.

North Asian UCO saw the most movement throughout July, rising 11.4% on the month to close at \$930/mt. Comparatively, PFAD rose 5.6% to \$829/mt.

UCO levels in Asia rose in July amid robust buying. Chinese UCO has not only been sold to the US, but also to Europe.

“Maybe the European stock levels have been depleted,” one source said.

UCO offers in bulk shipments climbed to \$950-\$975/mt, up almost \$100 on the month.

European UCO prices followed a similar — albeit more muted — trend to Asian UCO, rising 1.8% on

the month to close at \$970/mt. Sources also noted increased demand for European UCO, although summer holidays brought some demand variation into the market throughout the month.

“The market has been on the rise for the past few weeks,” a second source said.

In the US, tallow prices remained flat throughout the month, holding at 56.50 cents/lb.

Platts is part of S&P Global Commodity Insights.

#### **Conflict grows with US EPA over biofuel mandates**

Environmental groups said July 7 they will keep pushing the US Environmental Protection Agency to bolster airplane emissions standards after a court threw out their lawsuit charging that an existing rule fails to actually reduce pollution from aircraft.

In addition, the US EPA has increasingly denied requests by small refineries seeking biofuel blending exemptions, commodity analysts said.

The EPA may grant a temporary exemption to a small refinery from its annual renewable volume obligations, or RVOs, if it can demonstrate that compliance with the RVOs would cause the refinery to suffer disproportionate economic hardship.

#### **SAF production news**

Spanish energy company Cepsa has started sales of second-generation SAF at Spain’s four main airports in part of its plan to become the leading SAF producer in the Iberian Peninsula by 2030.

Elsewhere, French utility Engie announced plans to develop an industrial scale low-carbon and renewable fuel platform at the port of Le Havre, with the aim of supplementing decarbonization efforts in both the shipping and aviation sectors, it said July 25.

#### **Neste production to slow in Q3**

Renewable diesel and SAF production will be hit by repair works in the third quarter, leading to a decline compared with the second quarter, Finnish refiner Neste said July 27.

Second quarter renewable diesel and SAF sales volumes rose 17% year on year to 946,000 mt, the company said.

Neste said volumes in the third quarter would be somewhat lower due to continued repair works in July, after which the ramp-up of capacity would continue. Neste expects the ramp-up of production in Singapore to be completed by the end of the year and for renewable diesel and SAF sales volumes to grow after the third quarter.

The company has also scheduled a four-week maintenance shutdown at its Rotterdam refinery in the fourth quarter.

#### **Pre-feasibility study for e-SAF in New Zealand**

New Zealand’s Channel Infrastructure said July 5 a pre-feasibility study will be carried out for development of a green hydrogen manufacturing facility at its Marsden Point site to produce synthetic SAF, or eSAF.

Channel Infrastructure said the facility could potentially supply around 60 million liters/year of eSAF — equivalent to more than 3% of the “pre-COVID annual jet fuel requirements for the aviation sector in New Zealand.”

The proposed facility would use electrolyzers to produce 35,000 mt/year of green hydrogen. Work on the study began in early 2022. New Zealand’s sole refinery Marsden Point converted operations to an import-only fuel terminal in April.

#### **Chevron, Bunge enter feedstock partnership**

Chevron and partner Bunge will buy Argentinian camelina producer Chacraservicios for an undisclosed amount, giving the partnership access to a lower carbon-intensity renewable fuel feedstock to meet growing demand, the companies said in a joint statement issued July 5.

Founded in 2003, Chacraservicios is focused on the cultivation of camelina sativa, a cover crop with an oil content of 35%-38%. Bunge will provide Chacraservicios crush tolling and management services.

## Ethanol market commentary

### United States

#### Platts US Ethanol Daily Commentary

- Ethanol markets sink to a 20-week low; prices fall for the sixth straight day
- Production perhaps outpacing demand

US ethanol markets fell to a 20-week low Aug. 1 as tradable levels continued to slip.

The outright benchmark Chicago terminal ethanol fell 3.70 cents on the day, sinking to its lowest level since March 15. The premium to August Chicago paper narrowed to 2.75 cents/gal. The August/September Chicago paper structure remained backwardated but widened to plus 7.25 cents.

Ethanol markets continued to plummet, as prices fell for the sixth consecutive day. Since July 24, Chicago terminal ethanol has fallen 32.50 cents. "Ethanol production seems to be on par or outpacing demand during a time when the market was expecting [stock] draws. ... Overall it feels like margins are under pressure," said a source regarding the current dynamics pushing down physical ethanol markets.

Chicago Board of Trade September corn futures fell 7 cents on the day, settling at \$4.97/bushel.

The R11 rail car market fell 1.50 cents on the day but rose to a 0.50-cent premium to Chicago terminal ethanol.

New York harbor markets closely followed the downward movement seen in Chicago terminal ethanol, as front-month barges slipped to a 20-week low.

#### Platts US Ethanol Daily Assessment Rationale & Exclusions

Platts assessed Chicago Argo ethanol at \$2.20/gal Aug 1.

## US ethanol price assessments

		Low-High	Midpoint	Change
<b>United States (¢/gal) (PBF page 210)</b>				
Ethanol Chicago (terminal)	AALRI00	219.95-220.05	220.000	-3.700
Ethanol Chicago (Rule 11)	AAVWD00	220.45-220.55	220.50	-1.50
Ethanol swap Chicago (Aug)	ESCM00	217.20-217.30	217.250	-30.750
Ethanol swap Chicago (Sep)	ESCM001	209.95-210.05	210.00	-9.50
Ethanol swap Chicago (Oct)	ESCM002	200.70-200.80	200.75	-11.75
Ethanol NYH Barge (Aug)	AAMPF00	228.95-229.05	229.000	-3.250
Ethanol NYH Barge (Sep)	AAUEG00	222.20-222.30	222.250	-2.500
New York Harbor Terminal	ANYHA00	230.70-230.80	230.75	-2.25
Ethanol Houston 5-15 Tank	AATGJ00	230.45-230.55	230.50	-2.50
Ethanol Houston rail 15-30 days	AABFE00		224.50	-2.50
Ethanol Houston rail spread to Chicago swap	AACFF00		9.00	+0.00
<b>North California Rail (¢/gal) (PBF page 210)</b>				
Ethanol North Cal	AAMFT00	236.20-236.30	236.25	-1.50
Ethanol N. Cal spread to Chicago swap (Sep)	AAVXD00		26.25	+8.00
Ethanol North Cal 70 Cl	AENCA00	247.20-247.30	247.25	-1.50
Ethanol North Cal 70 Cl spread to Chicago swap	AENCB00		37.25	+8.00
<b>LCFS Carbon Credits (\$/mt) (PBF page 214)</b>				
Front quarter ( Q3 )	AAXYA00	74.25-74.75	74.50	+0.50
Second quarter ( Q4 )	AAXYZ00	74.25-74.75	74.50	+0.50
Ethanol: Cl value per point (¢/gal)	ACIVA00		0.60	+0.00

## US dried distiller grains price assessments (\$/st) (PBF page 501)

		Low-High	Midpoint	Change
CIF New Orleans barge	AADDG00	242.95-243.05	243.00	-4.00
FOB Chicago truck	ACDDG00	219.95-220.05	220.00	0.00

In the Platts Market on Close assessment process, three consecutive trades were seen on the offer at \$2.20/gal. Platts considered an outstanding bid of \$2.18/gal and an outstanding offer of \$2.22/gal.

ITT Sewaren was assessed at \$2.3075/gal at an unchanged 13.50-cent premium to August Chicago paper. Platts considered an outstanding offer of \$2.42/gal.

Platts assessed New York Harbor any-August barges at \$2.29/gal and any-September barges at \$2.2225/gal. Platts assessed any-August barges at an 11.75-cent premium to August Chicago paper. Platts considered a heard offer for any-August barges/August Chicago paper of plus 12 cents.

Any-September barges were assessed at an

unchanged 12.25-cent premium to September Chicago paper. Platts considered a heard offer for any-September barges/September Chicago paper of plus 13 cents.

Platts is part of S&P Global Commodity Insights. This rationale applies to the symbols <AAMPF00>, <AAUEG00>, <AALRI00> and <ANYHA00>.

Exclusions: No data was excluded from the assessment.

#### Platts US Ethanol Bids, Offers, Trades

Bids: CHICAGO ITT ARGO  
 PLATTS ETHANOL: AUGUST 6-16: VALERO BIDS  
 5KB AT \$2.1800

PLATTS ETHANOL: AUGUST 6-16: HARTREE BIDS 5KB AT \$2.1650

Offers: CHICAGO ITT ARGO

PLATTS ETHANOL: AUGUST 6-16: ECO-ENERGY OFFERS 5KB AT \$2.2200

PLATTS ETHANOL: AUGUST 6-16: HARTREE OFFERS 5KB AT \$2.2300

ITT SEWAREN

PLATTS ETHANOL: AUGUST 6-16: VANTAGE OFFERS 5KB AT \$2.4200

Trades: CHICAGO ITT ARGO

PLATTS ETHANOL: AUGUST 6-16: BP BUYS FROM VITOL\* 5KB AT \$2.2000 (18:00:20)

PLATTS ETHANOL: AUGUST 6-16: RAIZEN BUYS FROM VITOL\* 5KB AT \$2.2000 (18:00:27)

PLATTS ETHANOL: AUGUST 6-16: RAIZEN BUYS FROM VITOL\* 5KB AT \$2.2000 (18:00:34)

This assessment commentary applies to the following market data codes: <AALRI00>, <AAMPF00>, <AAUEG00>, <AAVWD00>, <AATGJ00>, <AAMFT00>, <ANYHA00>

### Platts US California Ethanol and LCFS Assessment Rationale

Platts assessed third-quarter 2023 California Low Carbon Fuel Standard carbon credits up at \$74.50/mt on Aug. 1, at an unchanged flat differential to fourth-quarter credits.

Fourth-quarter 2023 LCFS credits were assessed up at \$74.50/mt, above a heard bid of \$74/mt for fourth-quarter credits.



### Renewable Identification Number (RIN)

(¢/RIN)	Rolling code	Calendar code	Low-High	Midpoint	Change
<b>Ethanol (D6) (PBF page 201)</b>					
RIN Calendar-Year 2022	RINCY01	RD62022	155.20-155.30	155.25	+0.25
RIN Calendar-Year 2023	RINCY02	RD62023	150.20-150.30	150.25	+0.25
RIN Calendar-Year 2024	RINCY03	RD62024	144.45-144.55	144.50	-0.75
<b>Biodiesel (D4) (PBF page 301)</b>					
RIN Calendar-Year 2022	BDRCY01	RD42022	156.20-156.30	156.25	+0.00
RIN Calendar-Year 2023	BDRCY02	RD42023	150.45-150.55	150.50	+0.00
RIN Calendar-Year 2024	BDRCY03	RD42024	146.70-146.80	146.75	+0.00
<b>Advanced biofuel (D5) (PBF page 201)</b>					
RIN Calendar-Year 2022	ABRCY01	RD52022	155.20-155.30	155.25	+0.00
RIN Calendar-Year 2023	ABRCY02	RD52023	149.45-149.55	149.50	+0.00
RIN Calendar-Year 2024	ABRCY03	RD52024	145.70-145.80	145.75	+0.00

### Cellulosic biofuel (D3) (PBF page 201)

RIN Calendar-Year 2022	CBRCY01	RD32022	297.95-298.05	298.00	-1.00
RIN Calendar-Year 2023	CBRCY02	RD32023	299.95-300.05	300.00	-1.00
RIN Calendar-Year 2024	CBRCY03	RD32024	272.95-273.05	273.00	+0.00

The calendar codes indicate the traditional full calendar year codes for Platts RINs assessments, while the supplementary rolling codes are unique to the specific calendar-year RINs.

### Platts US Renewable Volume Obligation – Calculated Values (PBF page 302)

	¢/gal	Change	Biodiesel	Ethanol	%/gal	Advanced Biofuel
<b>Cellulosic</b>						
2022 RVO	RV0Y022	18.7338	+0.0180	RVBY022	2.3300	RVEY022 8.5700
2023 RVO	RV0Y023	18.9030	+0.0169	RVBY023	2.5800	RVEY023 8.7100
Current Year	RV0R002					
2024 RVO	RV0Y024	18.9398	-0.0653	RVBY024	2.8200	RVEY024 8.7100

RVOs are Renewable Volume Obligation values. RVO is the aggregate cost of the Renewable Identification Number percentages per gallon of transportation fuel for biomass based diesel, ethanol, advanced biofuel, and cellulosic ethanol as mandated by US Environmental Protection Agency in Renewable Fuel Standard Program (RFS2). Platts calculates these RVO values factoring the value of biodiesel, ethanol, advanced biofuel and cellulosic biofuel RIN credits as assessed by Platts for the respective RVO years; RINs are assessed as cents/RIN. Current year RVO reflects the current calendar year

### Ethanol prices at key rack locations (¢/gal)

	Des Moines	Grand Forks	Kansas City	Minneapolis	Omaha	Sioux Falls	Tulsa
C&N Eth	DE059TV 229.00	DE175TV 239.00	DE099TV 237.00	DE141TV 226.00	DE185TV 237.00	DE256TV 239.00	
BioUrja	DE059QB 261.00	DE175QB 276.00	DE099QB 275.00	DE141QB 259.00	DE185QB 267.00	DE256QB 267.00	DE229QB 283.00
Fl Hills	DE059IF 231.89	DE175IF 235.99	DE099IF 233.54	DE141IF 220.20	DE185IF 236.60	DE256IF 225.65	
Hartland	DE059UJ 287.00		DE099UJ 298.00	DE141UJ 271.00	DE185UJ 295.75	DE256UJ 169.00	DE229UJ 298.00
RPMG	DE059QW 224.50	DE175QW 236.00	DE099QW 230.00	DE141QW 223.50		DE256QW 224.50	DE229QW 248.25
Western		DE175FN 246.00	DE099FN 244.00	DE141FN 233.00	DE185FN 249.00	DE256FN 237.00	DE229FN 256.00

Prices effective as of 12:01 am EST 01AUG23, provided by DTN.

This-week shipment Northern California ethanol with 70 CI was assessed at \$2.4725/gal, based on a 70 CI value at that level that reflected a 1.50-cent decrease in Midwest rail pricing.

This-week shipment delivered Northern California ethanol with 88.25 CI was assessed at \$2.3625/gal.

Platts is part of S&P Global Commodity Insights.

This rationale applies to the symbols <AAXYA00>, <AAXYZ00>, <AAMNK00> and <AAMFT00>.

### Platts US RINs Daily Assessment Rationale & Exclusions

Platts assessed 2024 D6 RINs at \$1.445/RIN Aug. 1, at the level of the last heard trade and considering the last heard bid-offer of \$1.44-\$1.45/RIN.

Platts assessed 2023 D6 RINs at \$1.5025/RIN, considering the last heard bid-offer of \$1.50-\$1.505/RIN.

Platts assessed 2022 D6 RINs at \$1.5525/RIN, at an unchanged 5-cent premium to 2023 D6 RINs.

Platts assessed 2024 D4 RINs unchanged at \$1.4675/RIN, at an unchanged 3.75-cent discount to 2023 D4 RINs.

Platts assessed 2023 D4 RINs unchanged at \$1.505/RIN, below the last heard offer of \$1.51/RIN and at a 0.25-cent premium to corresponding D6 RINs. Platts considered a heard offer for 2023 D4 RINs/2023 D6 RINs of plus 0.50 cents.

Platts assessed 2022 D4 RINs unchanged at \$1.5625/RIN, at an unchanged 5.75-cent premium to 2023 D4 RINs.

Platts assessed D5 RINs at an unchanged 1-cent discount to corresponding D4 RINs.

Platts assessed 2024 D3 RINs unchanged at \$2.73/RIN, considering the last heard bid of \$2.72/RIN.

Platts assessed 2023 D3 RINs at \$3/RIN, at the level of the last heard trade.

### Brazil Ethanol price assessments

		Low-High	Midpoint	Change
<b>Brazil Cargo Assessments (PBF page 220)</b>				
Ethanol FOB Santos Cargo (¢/gal)	AATAE00	235.75-235.85	235.80	-3.10
Ethanol FOB Santos Cargo (\$/cu m)	AAWF000	622.95-623.05	623.00	-8.00
Ethanol FOB Santos Cargo (R\$/cu m)	AAWFP00	2985.15-2985.25	2985.20	+0.30
<b>Hydrous ANP (PBF page 223)</b>				
Domestic Ex-mill Ribeirao with taxes (R\$/cu m)	AAXNQ00	2590.00-2600.00	2595.00	+0.00
FOB Santos/Paranagua (\$/cu m)	AAXNR00	563.50-568.50	566.00	-6.00
<b>Anhydrous ANP (PBF page 223)</b>				
Domestic Ex-mill Ribeirao with taxes (R\$/cu m)	AAXNN00	2790.00-2800.00	2795.00	+0.00
<b>Grade B (PBF page 223)</b>				
FOB Santos/Paranagua (\$/cu m)	AAXNS00	583.50-588.50	586.00	-6.00
<b>Daily Prices (PBF page 226)</b>				
Spot Ex-mill Ribeirao Hydrous expressed as Raw Sugar equivalent (basis 96 degrees pol) (¢/lb)	AAXOA00	14.42-14.44	14.43	-0.18

### RIN D6 ethanol year 2



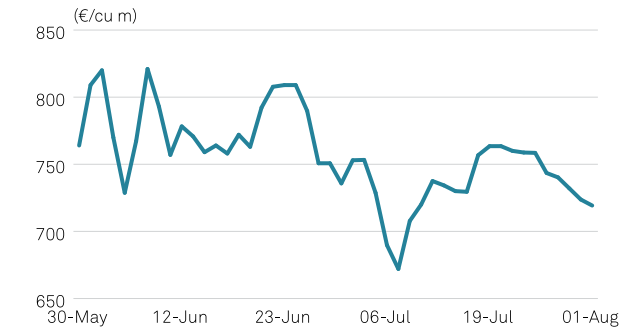
Source: S&P Global Commodity Insights

Platts assessed 2022 D3 RINs at \$2.98/RIN, at an unchanged 2-cent discount to 2023 D3 RINs.

Platts is part of S&P Global Commodity Insights.

This rationale applies to symbol(s) <RINCY01> <RINCY02> <RINCY03> <ABRCY01> <ABRCY02> <ABRCY03> <BDRCY01> <BDRCY02> <BDRCY03> <CBRCY01> <CBRCY02> <CBRCY03>

### Ethanol T2 FOB Rotterdam



Source: S&P Global Commodity Insights

Exclusions: No data was excluded from the assessment.

### Platts US RINs Bids, Offers, Trades

Bids: none  
Offers: none



Trades: none

This assessment commentary applies to the following market data codes: <RINCY01>, <RINCY02>, <RINCY03>, <ABRCY01>, <ABRCY02>, <ABRCY03>, <BDRCY01>, <BDRCY02>, <BDRCY03>, <CBRCY01>, <CBRCY02>, <CBRCY03>

## Platts US Distiller Grains DDGS Daily Commentary

- Corn prices slow decline
- DDGS lower with inactive trade

The US dried distiller grains with solubles export market was steady to lower on Aug. 1 as poor demand and cheaper corn prices lead values downward.

The CBOT September corn futures contract closed the session 7 cents/bushel lower at \$4.97/bu. This was the sixth consecutive lower close and the first close below \$5/bu since July 17. Corn futures saw another day of lower prices on a milder weather forecast despite a decline in crop conditions. The weekly crop conditions update showed 55% of US corn rated in good or excellent condition, down 2 percentage points from the previous week, according to US Department of Agriculture data released after the close on July 31.

While corn prices still extended their decline, selling was at a slower pace than recent sessions. Calmer corn futures helped to bring buying interest back into the market, but trade activity remained quiet. "Starting to get price inquiries again from buyers, so price stability is a least helping reopen conversations," a source said. Bid-offer ranges were heard \$4-5/st lower for nearby CIF New Orleans DDGS barges compared to the previous session. Ranges for trucks delivered into the Chicago market held firmer on the day, but nearby August offers also saw a \$4/st reduction. Volatility in corn futures and

## Northwest Europe ethanol price assessments

		Low-High	Midpoint	Change
<b>Northwest Europe (PBF page 1210)</b>				
Ethanol T2 FOB Rotterdam (€/cu m)	AA YDT00	718.75-719.75	719.25	-4.50
Ethanol T2 FOB Rotterdam (\$/cu m)	AA YDT10	787.89-788.99	788.44	-9.57
Ethanol T1 FOB Rotterdam (\$/cu m)	AA WUQ00	687.25-688.25	687.75	-8.00
Ethanol T1 CIF NWE Cargo (\$/cu m)	AA YDS00	675.25-676.25	675.75	-8.00
Ethanol T2 FOB Rotterdam Premium (€/cu m)	AA SNS00		5.481	-0.032

### Northwest Europe Swaps Assessments (€/cu m) (PBF page 1610)

		Low-High	Midpoint	Change
M1 (Sep)	AA XCL00	731.50-732.50	732.00	-4.00
M2 (Oct)	AA XCM00	721.50-722.50	722.00	-10.00
M3 (Nov)	AA XCN00	711.50-712.50	712.00	-10.00
M4 (Dec)	AA XCO00	711.50-712.50	712.00	+0.00
M5 (Jan)	AA XCP00	710.50-711.50	711.00	-1.00
M6 (Feb)	AA XCQ00	710.50-711.50	711.00	+0.00
M7 (Mar)	AA XCR00	710.50-711.50	711.00	+0.00
M8 (Apr)	AA XCS00	714.50-715.50	715.00	+4.00
M9 (May)	AA XCW00	714.50-715.50	715.00	-4.00
M10 (Jun)	AA ZZA00	713.50-714.50	714.00	-5.00
M11 (Jul)	AA ZZB00	709.50-710.50	710.00	-9.00
M12 (Aug)	AA ZZC00	709.50-710.50	710.00	-8.00

## BioLPG price assessments

		Midpoint	Change
<b>Northwest Europe (\$/mt)</b>			
Bio-Propane FCA NWE	AB PRA00	2710.00	-2.75

## ETBE price assessments

		Low-High	Midpoint	Change
<b>Northwest Europe (\$/mt) (PBF page 1420)</b>				
ETBE FOB AR	AA SLQ00	1332.75-1333.25	1333.00	+12.75
ETBE spread to MTBE	AA SLQ02		80.00	+0.00

## Asian ethanol price assessments

		Low-High	Midpoint	Change
<b>Fuel grade (\$/cu m) (PBF page 2210)</b>				
Bioethanol CIF Philippines	AA WAA00	702.67-704.67	703.67	-30.33
Bioethanol CIF Philippines H2 Sep	AA WAB00	712.00-714.00	713.00	-41.00
Bioethanol CIF Philippines H1 Oct	AA WAC00	703.00-705.00	704.00	-25.00
Bioethanol CIF Philippines H2 Oct	AA WAE00	693.00-695.00	694.00	-25.00
<b>Industrial (\$/cu m) (PBF page 2210)</b>				
Ethanol Grade B CFR Ulsan	AA XVA00	679.00-681.00	680.00	+0.00

building supply pressure gave the market a weaker tone and kept most buyers inactive. "It is going to be slow for a while still," a source said.

### Platts US Dried Distiller Grains DDGS Daily Assessment Rationale

Platts CIF New Orleans Dried Distillers Grains with solubles barges for August shipment was assessed at \$243/st for Aug. 1, \$4/st lower than the previous session. The assessment was based on an offer for 34%-35% profit specification DDGS heard \$4/st lower at \$242/st and a bid for the same heard \$5/st lower at \$228/st. The assessment also considered feedback from sources that an equivalent decline applied to 36%-37% profit DDGS.

The FOB Chicago DDGS market for August truck delivery was assessed unchanged at \$220/st based on an August offer heard \$4/st lower at \$222/st and a bid heard \$1/st lower at \$214/st.

Platts is part of S&P Global Commodity Insights.

This rationale applies to symbol(s) <ACDDG00> <AADDG00>

### Biodiesel price assessments

		Low-High	Midpoint	Change
<b>Northwest Europe (\$/mt) (PBF page 1310)</b>				
FAME -10 (RED) FOB ARA	AAWH00	1294.50-1299.50	1297.00	+16.00
FAME 0 (RED) FOB ARA	AAWGI00	1225.50-1230.50	1228.00	-50.50
PME (RED) FOB ARA	AAXNZ00	1175.50-1180.50	1178.00	-50.50
RME (RED) FOB ARA	AAWGK00	1299.50-1304.50	1302.00	+16.50
SME (RED) FOB ARA	AAWJ00	1250.25-1255.25	1252.75	-28.00
UCOME (RED) FOB ARA (Eur/mt)	AUMEB00		1369.28	+28.59
UCO (RED) DAP ARA	AUCOA00		970.00	+0.00

<b>Northwest Europe differential to ICE gasoil (\$/mt) (PBF page 1313)</b>				
FAME 0 (RED) FOB ARA	AAXT00	324.50-329.50	327.00	-82.00
PME (RED) FOB ARA	AAXY00	274.50-279.50	277.00	-82.00
RME (RED) FOB ARA	AAXU00	398.50-403.50	401.00	-15.00
SME (RED) FOB ARA	AAXX00	349.25-354.25	351.75	-59.50
UCOME (RED) FOB ARA	AUME00		600.00	-8.75

<b>Asia (\$/mt) (PBF page 2310)</b>				
Biodiesel FOB Southeast Asia*	AAVSV00	980.90-981.10	981.00	-5.00
UCOME FOB China	UCFCA00		1095.00	+0.00
UCOME FOB Straits	UCFCB00		1130.00	+0.00
UCO FOB Straits	UCFCC00		940.00	+0.00
UCO North Asia	AUCOC00		930.00	+0.00

\*Loadings in Southeast Asia normalized to Port Klang, Pasir Gudang and Lahad Datu.

<b>Brazil Biodiesel (Real/cu m) (PBF page 010)</b>				
Biodiesel DAP Paulinia	ABPLA00		4115.00	+0.00

<b>United States (¢/gal) (PBF page 310)</b>				
Biodiesel B100 SME Chicago	AAURR00	563.30-563.40	563.35	+3.25
Biodiesel B100 SME Houston	AAURS00	558.30-558.40	558.35	+3.25

Delivered by truck or rail to location, 3-10 days ahead.

## Platts

S&P Global  
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## Biofuelscan

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## Brazil

## Platts Brazil Ethanol Daily Commentary

- CS Brazil hydrous ethanol price remains unchanged on day
- Sugar export market at 896-point premium to hydrous ethanol

Platts assessed hydrous ethanol ex-mill Ribeirão Preto at Real 2,595/cu m on Aug. 1, Real 5 below the last offer heard, unchanged from the previous assessment.

Platts assessed domestic anhydrous ethanol at Real 2,795/cu m ex-mill Ribeirão Preto, unchanged from July 31. Domestic anhydrous ethanol's premium over hydrous remained relatively unchanged at 23.77% net of the ICMS tax.

"Center-South ethanol prices remained unchanged Aug. 1 with small volumes being traded in the spot market because supply and demand are in a state of equilibrium," a Sao Paulo-based trader said.

Brazilian ethanol's production premium to sugar, which shows the most profitable product to produce, reached a 996-point discount as of Aug. 1, S&P Global Commodity Insights data showed. Sugar's premium to ethanol production in Brazil would move closer to 896 points if decarbonization credits were added to the premium calculation.

The CBIO, the equivalent of 1 mt of CO<sub>2</sub> not released into the atmosphere, is an instrument that biofuel producers and importers are issued to ensure Brazil attains its decarbonization targets.

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## Platts Brazil FOB Santos Anhydrous Ethanol Daily Rationale

Platts assessed hydrous ethanol ex-mill Ribeirão Preto at Real 2,595/cu m on Aug. 1, Real 5 below the last offer heard, unchanged from the previous assessment.

## Renewable distillates

		Close	Change
<b>Northwest Europe (\$/mt) (PBF page 1013)</b>			
HVO	HVNWD00	1703.312	+1.697
SAF	BJNWD00	1849.281	+2.174
<b>Americas (PBF page 12)</b>			
SAF w/ credits (¢/gal)	ASAFK00	591.404	+0.399
SAF w/o credits (¢/gal)	ASAFLO0	157.600	+0.103
RD w/ credits (¢/gal)	ARDFK00	566.488	+0.263
RD w/o credits (¢/gal)	ARDFLO0	158.054	-0.091
SAF w/ credits (\$/mt)	ASAF000	2010.774	+1.357
SAF w/o credits (\$/mt)	ASAFD00	535.840	+0.350
RD w/ credits (\$/mt)	ARDF000	1920.394	+0.891
RD w/o credits (\$/mt)	ARDFD00	535.803	-0.309
<b>Southeast Asia (\$/mt) (PBF page 2013)</b>			
HVO	HVMAB00	1533.670	+15.870
SAF	ASMAA00	1665.150	+18.240
<b>North Asia (\$/mt) (PBF page 2013)</b>			
HVO (UCO)	HVNAA00	1659.990	-0.920
SAF (UCO)	ASFAC00	1802.930	-1.140
<b>Feedstocks</b>			
UCO CIF ARA (\$/mt)	AUCOA00	970.00	0.00
UCO North Asia (\$/mt)	AUCOC00	930.000	0.000
Chicago packer tallow (¢/lb)	ATALA00	56.50	0.00

## Blended fuels

## Asia (\$/mt) (PBF page 2500)

Bio-Bunkers B24 Singapore	ABUNA00	754.96	+8.40
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Platts assessed domestic anhydrous ethanol at Real 2,795/cu m ex-mill Ribeirão Preto, unchanged from July 31. Domestic anhydrous ethanol's premium over hydrous remained relatively unchanged at 23.77% net of the ICMS tax.

Platts assessed FOB Santos anhydrous ethanol for loading 10-30 days forward at \$623/cu m, down \$8 from the last assessed price.

Platts assessed Grade B FOB Santos loading 20-30 days forward at \$586/cu m, down \$6 from the last-

assessed price. The FOB Santos Grade B premium to FOB hydrous ethanol remained at \$20/cu m.

FOB Santos ethanol prices decreased primarily because of a depreciation in the real against the dollar.

In the FOB assessments, Platts considered a Real 4.7917/\$1 exchange rate, compared with Real 4.7306/\$1 on July 31.

Platts is part of S&P Global Commodity Insights. This rationale applies to symbol(s) <AAWFO00>



## Northwest Europe

### Platts European Ethanol Daily Commentary

- T2 prices inch lower
- Gasoline prices ease after July surge

European undenatured fuel-grade ethanol prices recorded losses for an eighth-straight session Aug. 1.

Platts assessed European T2 ethanol at Eur719.25/cu m FOB Rotterdam Aug. 1, down Eur4.50/cu m from July 31. Ethanol prices continued a weaker trend into the start of August.

In the Platts Market on Close assessment process, one trade was seen for backend loading dates Aug. 12-16 at Eur718/cu m.

“Demand is good but not as good as expected,” a market participant said.

Activity in the T2 ethanol swaps market was limited, with Switzerland observing public holiday Aug. 1. The structure on deferred positions flattened slightly, as the Q2/Q3 spread was traded in a Eur5/cu m backwardation and the Q2/Q4 spread traded at plus Eur14/cu m.

Gasoline prices eased over the previous two sessions, coming off a rally through July, though they have remained elevated on the month. Platts assessed gasoline Eurobob FOB AR Barge and E10 Barge at \$972/mt Aug 1, down \$5/mt on the day but 17.5% and 17.8% higher on the month, respectively.

On imports, trade sources reported some intra-EU trade flows, with 6,000 cu m lined up from the ARA to Hamble, UK, and 3,500 cu m from Lilleborne, France to the ARA.

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### Platts European Ethanol Daily Assessment Rationale & Exclusions

Platts assessed T2 ethanol at Eur719.25/cu m FOB Rotterdam Aug. 1, down Eur4.50/cu m from July 31. Aug. 14 loading was assessed to reflect a backend window

loading traded offer at Eur718/cu m. The structure was assessed in a Eur0.33/day backwardation to reflect the M1/M2 paper structure.

This rationale applies to symbol(s) <AAYDT00>

Exclusions: No data was excluded from the assessment.

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### Platts European Ethanol Daily Bids, Offers, Trades

Bids:

PLATTS T2 ETHANOL 33.52G: BE: AUGUST 12-16:

TRAFIGURA BIDS 1KMT AT EUR715.00

Offers:

PLATTS T2 ETHANOL 33.52G: BE: AUGUST 12-16:

SHELL OFFERS 1KMT AT EUR720.00

Trades:

PLATTS T2 ETHANOL 33.52G: BE: AUGUST 12-16:

TRAFIGURA BUYS FROM SHELL\* 1KMT AT EUR718.00 (15:26:41)

This assessment commentary applies to the following market data codes: <AAYDT00>

## Asia

### Platts Asia Ethanol Daily Commentary

- Thin demand in Asia
- Smaller sugar crop expected for Philippines

Asian fuel ethanol marker plunged on Aug. 1 following the expiry of the Chicago ethanol July paper derivatives and on lower US ethanol values.

This was driven mainly by the weakness in Chicago Board of Trade corn futures. Lower temperatures and rains in the forecast for the US Corn Belt pressured the CBOT corn values.

Trade activity for the fuel and industrial ethanol market remained limited with thin demand in the region.

## Platts futures assessments (PBF page 2)

### Singapore close

BMD CPO Mo3 (MYR/mt)	BMAA003	3870.00	-14.00
ICE Gasoil Mo3 (\$/mt)	IGOSB03	860.50	+16.25
PO-GO (\$/mt)	POVG000	-3.93	-21.41

### London close

ICE LS Gasoil Mo1 (\$/mt)	AARIN00	911.75	+34.25
ICE LS Gasoil Mo2 (\$/mt)	AARIO00	891.75	+31.50
BO-GO (\$/mt)	CBAAA00	533.16	-21.46
NYSE Liffe Paris rapeseed (€/mt)	NLAAB00	442.00	+32.00
CBOT soybean oil (¢/lb)	CBAAE00	65.54	+0.58

### US close

CBOT soybean oil (¢/lb)	CBAAD00	67.09	+1.51
CBOT corn (¢/bu)	CBAAF00	497.00	-7.00
CBOT soybean meal (\$/st)	CBAAB00	456.10	+4.90
BO-HO (¢/gal)	CBABG00	192.11	+7.88

## London – other parities

FOB EU wheat CVB basis Constanta, 11.5% (\$/mt)	ACVBB00	246.75	-3.25
FOB CVB corn, basis Constanta (\$/mt)	ACVBC00	236.00	-1.00

## Platts foreign exchange assessments (PBF page 2)

### Singapore close

USD.MYR	MYRUB00	4.52	+0.01
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### London close

EUR.USD	AAFCW00	1.0962	-0.0064
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### US close

USD.BRL	USDBR00	4.7917	+0.0613
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Ravaging weather conditions in Southeast Asia are also going to impact the next sugar crop production. In the Philippines, sources said that Typhoon Doksuri has exited the nation but has left behind a trail of death and destruction in at least 13 regions in the Philippines.

“The estimates for Philippines’ 2023-24 crop are about 1.8 million mt nowadays. I believe this will drive sugar and the domestic ethanol prices higher, but the

weather is always changing so more to be seen about the crop next year,” said a local source.

### Platts Asia Ethanol Daily Assessment Rationale

Platts assessed Asian ethanol down \$30.33/cu m day on day at \$703.67/cu m CIF Philippines Aug. 1, following the expiry of the July Chicago ethanol futures and tracking the downward movement of the subsequent months.

Platts assessed Grade B ethanol unchanged on the day at \$680/cu m for cargoes arriving over Sept. 30-Oct. 30, with no disproving information.

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This rationale applies to symbol(s) <AAWAA00> <AAWAB00> <AAWAC00> <AAWAD00> <AAXVA00>

## Biodiesel market commentary

### United States

#### Platts SME Biodiesel Daily Rationale

Platts assessed the Chicago SME biodiesel market at \$5.6335/gal on Aug. 1, at a 261-cent premium to NYMEX August ULSD futures. The premium was stable based on unchanged D4 RINs prices.

Platts assessed the US Gulf Coast SME biodiesel market at \$5.5835/gal, at a 256-cent premium to NYMEX August ULSD futures. The premium was steady based on unchanged D4 RINs prices.

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This rationale applies to symbol(s) <AAURR00> <AAURS00>.

#### Platts Brazil Biodiesel Daily Rationale

Platts assessed Brazilian Biodiesel DAP Paulinia for one to seven delivery days at Real 4,115/cu m on Aug. 1, unchanged on the day.

The assessment considered a trade of 120 cu m heard at Real 4,070/cu m ex-mill Santa Catarina, a

region with a freight of Real 180/cu m to Paulinia, followed by an offer at Real 3,770/cu m, ex-mill Mato Grosso and a freight of Real 350/cu m to Paulinia hub.

There were no bids or trades heard in the spot market after the outstanding offer.

Platts is part of S&P Global Commodity Insights.

This rationale applies to symbol(s) <ABPLA00>.

### Northwest Europe

#### Platts European Biodiesel Daily Commentary

- ICE LSGO at multimonth high
- FAME 0 drops 20% on day

European biodiesel prices plummeted Aug. 1, with ICE LSGO front month at a multimonth high.

The FAME 0 FOB ARA premium over ICE LSGO futures dropped 20% on the day Aug. 1, closing at \$327/mt. The RME premium fell 14.3% to \$351.75/mt and UCOME premium slipped 1.4% to \$600/mt.

The ICE low sulfur gasoil front month contract broke above \$900/mt for the first time in six months in midmorning European trading Aug. 1, despite crude futures moving slightly lower during the session, with traders citing concerns over diesel supply into Europe.

At 12:40 pm London time (1140 GMT), the ICE LSGO front month futures contract traded at \$902.25/mt, up \$25/mt from the previous close and advancing from a recent low of \$805.75/mt on July 25. Prices eased in the afternoon session and by 2:12 pm were trading around \$895.50/mt. The front month contract closed at \$911.75/mt.

The ICE LSGO front month contract was last assessed higher than \$900/mt on Jan. 31.

“Front month [gasoil] futures jumping due to the lack of resupply in Europe,” a European market source said. The source said that, with Russian supply now excluded from Europe, volatility has been more

pronounced in 2023 as supply is further away from the pricing center.

“The arbitrage from the east to Europe is shut a bit for the next month, only cargoes fixed from a long time ago will go,” a Middle East-based source said, adding that Europe needed to price higher to attract barrels from the east that could explain the upward move in the futures market.

Norway will require bunker suppliers to have at least 6% of their sales in domestic shipping from advanced biofuels from October, the government said Aug. 1 as it continues its push for a greener ship fuel.

In an emailed statement to S&P Global Commodity Insights, the Norwegian Environment Agency said suppliers need to use hydrotreated vegetable oil and fatty acid methyl ester that meet the EU Renewable Energy Directive’s sustainability criteria to stay compliant.

Each supplier can determine its own blending ratio in fuel deliveries as long as it can ensure 6% from its total sales are attributed to HVO or FAME, according to the government agency. Biomethane is not covered by the upcoming regulation.

Norway’s biofuel mandate is expected to affect the bunker mix of passenger ships, coastal cargo carriers and offshore supply vessels in the Norwegian Continental Shelf.

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#### Platts European Biodiesel Daily Assessment Rationale

The differential for biodiesel meeting Platts’ maximum carbon intensity (CI) of 37.6 g of carbon dioxide equivalent per megajoule (CO<sub>2</sub>e/MJ), compared with material meeting a maximum CI of 40.42g CO<sub>2</sub>e/MJ, was assessed at flat Aug. 1.

RED FAME 0 loading Aug. 18 was assessed below an offer heard live at \$320/mt. Structure was assessed unchanged at \$1/d in backwardation.

RED RME loading Aug. 18 was assessed below an

offer heard live at \$400/mt. Structure was assessed unchanged at 25 cents/day in backwardation.

RED PME loading Aug. 18 was assessed at a minus \$50/mt spread to FAME 0. Structure was assessed unchanged at \$1/d in backwardation.

RED UCOME loading Aug. 18 was assessed below an offer heard live at \$595/mt. Structure was assessed unchanged at 75 cents/d in backwardation.

UCO flexibag CIF Amsterdam-Rotterdam-Antwerp loading 15-30 days forward, 5% FFA, 2% MIU, maximum 50 ppm sulfur, minimum 80 grams iodine, was assessed at \$970/mt, amid no disproving market data.

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This rationale applies to symbol(s) <AAXNT00>, <AAXNU00>, <AAXNY00>, <AUMEA00>, <AUCOA00>.

## Asia

### Platts Asia Biodiesel Daily Commentary

- UCO and UCOME offers stay steady on day
- Interest for UCOME slows

Gap between sellers and buyers of UCOME remained above \$50/mt with buying ideas below \$1,100/mt FOB China while sellers were at \$1,150/mt and above.

On the Malaysia front, UCOME selling idea was reported at \$1,170/mt while another seller was at \$1,150/mt on July 31 with no bids surfacing. With orders been booked in the past two weeks, some sellers are not keen to chase bids.

"I sold out for August and September cargoes, will probably come into play a week later," said a source.

On the UCO front, Indonesian UCO in containers is offered to Malaysia at \$950-\$1,000/mt CFR basis, a level some will consider a tad too expensive although unconfirmed trades were said to have taken place around the \$900-\$1,000/mt levels. Bulk shipment of UCO loading from China remains above \$900s/mt, unchanged day on day.

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### Platts Asia Biodiesel Daily Assessment Rationale

Platts assessed RED PME \$5/mt lower at \$981/mt FOB Southeast Asia on Aug. 1 for August loading, tracking Malaysian CPO futures.

Platts assessed UCO FOB North Asia flat at \$930/mt for Aug. 21-Sept. 10, while UCO FOB Straits was assessed unchanged at \$940/mt.

Platts assessed UCOME FOB China flat at \$1,095/mt with no disproving information, while FOB Straits UCOME was unchanged at \$1,130/mt.

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This rationale applies to symbol(s) <AAVSV00>.

## Biofuels industry news

### REFINERY NEWS ROUNDUP: Hydrogen, biofuel in focus in Europe

Hydrogen and biofuel remain in focus in Europe, with new projects in wind and solar power also announced.

Bio throughput at Eni's Italian biofuel plants in the second quarter fell 3% to 140,000 mt, while utilization was at 55%, almost unchanged from 56%. "Higher volumes processed at the Gela biorefinery, following the shutdown...in 2022, were more than offset by lower throughputs at the Venice biorefinery due to a planned turnaround," Eni said. Throughput was 17% higher in H1 at 276,000 mt, while utilization was also up at 54% compared with 46% last year "thanks to higher volumes processed."

Finland's Neste ramped up production from its renewable facilities in Q2 and reported a 17% increase to 946,000 mt in renewable diesel and sustainable aviation fuel sales volumes compared with the year-ago period.

The European Investment Bank has granted a Eur575 million (\$635 million) loan to support Repsol's rollout of wind and solar photovoltaic plants in Spain,

the energy group said July 25. The projects, with a total capacity of 1.1 GW, are due to be operational before the end of 2025. "This new financing supports the company's roadmap set out in the 2021-2025 Strategic Plan, aiming to reach 6 GW of installed capacity by 2025 and 20 GW by 2030," said Repsol CEO Josu Jon Imaz.

Repsol already has 1.9 GW of renewable energy projects in operation, most of which are in Spain.

Spanish refiner Cepsa said July 28 its Eur3 billion Hydrogen Valley project was on track, with basic engineering and permitting taking place in Q2, confirming a 2026 startup for a hydrogen electrolyzer at Huelva and another in 2027 at Algeciras. A green ammonia plant with 750,000 mt/year capacity at Algeciras is also due to start operations in 2027 as part of a deal with supplier Yara at Algeciras and offtaker Gasunie at the port of Rotterdam. In other decarbonization projects, the company has started selling SAF at four Spanish airports in July from Algeciras.

Germany added 229 MW of offshore wind capacity in the first half of 2023 with two projects in construction and another three financed, sector associations said July 25. Total capacity reached 8.4 GW by end-June with the 247-MW Arcadis Ost 1 in the Baltic Sea on course for full commissioning later this year and 24 turbines connected by end-June, they said.

Poland's largest energy company Orlen has signed a preliminary deal worth Eur107 million to acquire two renewable energy projects from Portugal's Greenvolt, it said July 25. Orlen is acquiring the Opalenica project, comprising three solar parks of combined 22 MW capacity, and the Sompolno project, Poland's first licensed hybrid project with 26 MW of installed wind and 10 MW of solar capacity. Both projects are located in Wielkopolska province, central western Poland. The deal was signed between Orlen's utility subsidiary Energa and Greenvolt Power. It will be concluded as soon as the Sompolno park begins operations, which is scheduled in December this year. Opalenica is due to launch in June next year.

## Conventional upgrades

### Existing entries

\*\* Greece's Motor Oil Hellas said in April 2023 that an investment in a new propylene splitter unit is "about to begin". The unit will have 100,000 mt annual capacity and is expected to be completed by 2026. It will use the existing infrastructure of the FCC unit which will switch part of the gasoline production into propylene.

\*\* Croatia's Rijeka refinery completed planned activities during a shutdown and was starting up, it said in early May 2023. The refinery halted operations for five months between November 2022 and April 2023 while it continues with its upgrade project. During the shutdown, works will be carried out on "connecting existing units with new systems", the company said. It also clarified that "several suspensions" of operations are planned for the duration of the upgrade project, in which it is investing more than HRK4 billion (\$524 million), as "the refinery cannot operate continuously while work is being carried out" on the existing and new units. The upgrade involves construction of a new residue complex, which includes a delayed coker. Works on the new residue complex started in 2020. Commissioning of the new complex is planned for 2024.

\*\* UK-based Petrofac has secured a new EPC contract for the modernization and expansion of Orlen Lietuva's refinery in Lithuania, it said in April 2023.

"Petrofac's scope of work encompasses the design, procurement, construction, and commissioning of new facilities, as ORLEN Lietuva invests to expand the existing refinery complex," it said, adding that it has previously secured an EPC for the addition of a new residue hydrocracking unit at the refinery.

In October 2021, Petrofac was awarded another EPC contract to build a bottom of the barrel unit at the Mazeikiai refinery in Lithuania, due to be completed by the end of 2024. The construction started in August 2022. The new EPC includes the installation of a

new amine regeneration unit and stabilization tower, interconnecting pipework and tie-ins to the existing refinery units, Petrofac said.

\*\* Slovakia's Slovnaft has awarded an engineering, procurement services and construction management (EPSCM) contract for an off-gas upgrade at its Bratislava steam cracker to McDermott. The project will upgrade the existing steam cracker unit by adding a low-pressure recovery unit, increasing ethylene production capacity utilizing the off-gas from the existing production, McDermott said in a statement. Following the expansion, the capacity of the PP3 unit will increase by 33,000 mt/year to 300,000 mt/year. Construction was expected to start in the summer of 2023 and be completed in October 2024.

\*\* Romania's Rompetrol said the cogeneration plant at the Petromidia refinery has reached "over 80%" general progress, including "around 95% progress on the engineering side, more than 96% on the procurement side and the actual construction is approaching 72%." The Kazakh-Romanian Energy Investment Fund (KREIF) "has made considerable progress in commissioning the cogeneration plant," the company said in March 2023. The project, which started in May 2021, will ensure the refinery's energy needs "exclusively from the cogeneration plant," it said. The new facility will generate approximately 80 MW of electricity. The KREIF is owned by KMG International, a subsidiary of Kazakhstan's state-owned KazMunaiGaz, and the Romanian state.

\*\* Poland's PKN said its 2022 investments included the construction of a visbreaking unit at Plock. The visbreaking unit refinery will have a capacity to produce 200,000 mt/year of diesel. Ongoing modernization of the hydrocracking and diesel hydrodesulfurization units at Plock will also increase the refinery's diesel production capacity.

PKN Orlen has bought a license and base design from US engineering company KBR for a potential bottom-of-the-barrel project. If PKN takes a final

investment decision, it will construct a production complex using solvent de-asphalting and fluid catalytic cracking technologies.

Separately, PKN Orlen has signed a contract with Linde to build a new oxygen and nitrogen production unit at its Plock refinery. The unit will produce 38,500 cu m/hour of oxygen and 75,000 cu m/hour of nitrogen, supplying gas feedstock for the new Olefin III complex and other installations at Plock. The project is due to be completed by the start of 2025.

\*\* Poland's PKN Orlen said it would invest around Zloty 2 billion (\$460 million) to build a hydrocracking unit with a capacity of 400,000 mt/year and an oil product loading terminal in Gdansk. PKN said both investments are scheduled to be commissioned by mid-2025. The hydrocracking base oils project will help the company diversify into second- and third-generation base oils.

\*\* The expansion of Orlen Unipetrol's steam cracker at Litvinov is still ongoing, the company said Dec. 2022. The company said in October 2021 it was contracting Technip Energies to build a new steam cracker furnace to be commissioned in 2022. The construction of an 11th furnace is set to boost production capacity to 585,000 mt/year of ethylene from 545,000 mt/year. The company plans to increase total petrochemical production capacity to 1.4 million mt/year by 2030 from 900,000 mt/year.

PKN Orlen has completed the Czech Koruna 9.6 billion (\$410 million) polyethylene 3 unit investment at Litvinov. The refinery's owner, Unipetrol, a 100%-owned PKN subsidiary, has taken charge of the black polyethylene unit, the second part of the investment. The first part, the natural polyethylene unit, was completed in April 2020. The polyethylene 3 unit, which can produce 270,000 mt/year of high density polyethylene, will replace production of one of the two existing production units with a capacity of 120,000 mt/year. Litvinov's polyethylene capacity will increase from 320,000 mt/year to 470,000 mt/year. PKN Orlen was

launching construction of a unit at Litvinov to produce up to 26,000 mt/year of dicyclopentadiene, or DCPC, used in the automotive, construction and electronic industries. Separately, McDermott International has been awarded a contract for engineering, procurement and construction management services for an upgrade of the hydrocracker at the Litvinov refinery.

\*\* France's Donges refinery is building a new hydrodesulfurization unit due to start up in the fourth quarter of 2023.

\*\* OMV Petrom will build a new unit for aromatics products at its Petrobrazî refinery. The company said it will invest Eur130 million (\$142 million) on the new unit whose processing capacity will be around 1,500 mt/day of reformed gasoline. The existing aromatics unit, which started production in 1961, will be replaced over 2023-2025, and the new unit will be put in operation in 2026. OMV also said it has "successfully completed the transportation of four coke drums." The new drums will replace the current ones, which have been in use since 1989, and will be operational in 2023. The company is also considering other significant investments at Petrobrazî, "both in the technological efficiency of the refinery as well as in the production of second-generation biofuels," the company said.

\*\* Repsol will build a new plant at Tarragona to produce 27,000 mt/year of cross-linkable polyethylene (XLPE) from mid-2024. It will also invest Eur18 million in an upgrade of its polyols unit, due to conclude in Q4 2023.

\*\* Bosnia's Brod refinery has started construction of a bitumen unit. The refinery, which has been offline since 2019 for an upgrade, had been expected to restart once it was connected to a gas pipeline, allowing it to switch to gas-fired power operations. The line was connected in December 2021, but the plant remains offline. A solar power facility at the plant has also been built to help power operations.

\*\* Azerbaijan's state oil company Socar is looking to expand the capacity of its 212,000 b/d Star refinery in

Turkey. Socar said it could expand Star's capacity to 13 million mt/year (261,000 b/d) by means of "flexibilities" in the refinery's design.

\*\* Turkish construction group Tekfen Insaat said that together with partner HMB Hallesche Mitteldeutsche Bau it has signed an EPC contract with Turkey's main refiner Tupras to construct a new sulfur recovery unit at the Kirikkale refinery. Tupras' upgrade plans for its four refineries include new sulfur units at its three main refineries, Izmit, Izmir and Kirikkale. Tupras is also carrying out a revamp of the FCC unit at Izmit, which will include the installation of flue gas treatment and energy back recovery systems.

\*\* Portugal's Galp will build a desulfurization unit with a processing capacity of 20,000 b/d at the Sines refinery. The project will allow the company to widen its crude slate.

\*\* Greece's Hellenic Petroleum said in 2021 that Eur35 million had been approved for a capacity increase at the polypropylene production unit at Thessaloniki to 300,000 mt/year, with the implementation targeted within 2-1/2 years.

\*\* Serbia's Pancevo refinery expects to complete its FCC project in 2023. The refinery also plans to build a unit to produce the octane enhancement chemical ETBE by 2024.

\*\* Bulgaria's Burgas refinery has awarded a contract to US Lummus Technology for a 280,000 mt/year polypropylene plant. The deal includes a technology license as well as basic design engineering, training and services, and catalyst supply.

\*\* ExxonMobil said it has "made a final investment decision to expand" the Fawley refinery in the UK to increase production of ultra low sulfur diesel by 45%, or 38,000 b/d. The more than \$1 billion investment includes a hydrotreater to remove sulfur from diesel, supported by a hydrogen plant.

\*\* Israel's Haifa District Court has rejected an appeal by Haifa municipality along with six other neighboring communities and environmental groups

against the proposed expansion of the Bazan refinery.

## Biofuel, hydrogen upgrades

### New and revised entries

\*\* In the coming weeks, Repsol plans to start operations at its first hydrogen electrolyzer at Bilbao with 2.5-MW of capacity. In the coming months it will take final investment decisions on larger projects at Bilbao and Cartagena.

Repsol plans to commission the country's largest hydrogen electrolyzer at its Tarragona refinery in 2026 after the project was granted European financing from the Innovation Fund program, the company said July 2023.

The 150-MW project is part of the Hydrogen Valley of Catalonia and the Ebro Hydrogen Corridor and is included in the Repsol-led SHYNE consortium. Repsol leads the consortium which counts Enagas Renewable, Iqoxe and Messer as partners.

Following the first phase of the project, a second phase starting from 2027 could boost renewable hydrogen production capacity to 1 GW, Repsol said.

\*\* The ramp-up of production at Neste's Singapore facility following its expansion "progressed during the second quarter but was slowed down by a need for an operational shutdown for equipment repairs at the new production line in June," it said in its Q2 results. Repairs continued in July, "after which the ramp-up of the capacity expansion continues" and the work is expected to be completed by the end of the year. Its Singapore expansion started up production after mid-April. SAF production will start in Singapore during the third quarter, Neste also said July 27.

Its renewables products' results were affected by the costs related to the ramp-up at the Singapore refinery but also to a low sales margin at Martinez "in the absence of pretreatment facilities, which are expected to be available by the end of the year." Its joint venture with Marathon Petroleum for renewable



diesel production at Martinez, California, started up its first phase in February.

Neste also said it had a scheduled a four-week maintenance period at the Rotterdam facility in Q4 and the existing Singapore production line will undergo a five-week maintenance shutdown in the second half of the year.

Neste also decided to expand the Rotterdam facility, with construction “well underway.” The expansion is set to add 1.3 million mt/year to a total of 2.7 million mt/year.

By increasing its SAF capabilities it expects to produce up to 1.5 million mt/year of SAF in 2024, which will reach 2.2 million mt/year by the end of 2026.

Neste’s production capacity for renewable products is set to increase to 5.5 million mt/year at the beginning of 2024 due to the expansion at Singapore and the Martinez joint venture.

When completed, the Rotterdam expansion project will further increase total capacity to 6.8 million mt/year by the end of 2026.

\*\* Portuguese energy group Galp’s new HVO unit (260,000 mt/year capacity and 193,000 mt/year SAF capacity) and a 100-MW hydrogen electrolyzer are still awaiting final investment decisions. CEO Filipe Silva told analysts on a conference call July 2023 that both projects “will go ahead, but not all the boxes are ticked” for the FIDs. Portugal’s environment agency APA cleared the HVO plant project July 17 and the electrolyzer plans June 16.

The hydrogen would be used principally for internal refinery use at Sines, but Galp’s plans include a potential expansion to 600 MW, which it would integrate into a wider hydrogen project for the region.

Galp has said that the Sines industrial site around the refinery will undergo a gradual transformation into a green energy hub.

\*\* Spanish refiner Cepsa said July 2023 that the Hydrogen Valley project is on track, with basic engineering and permitting taking place in Q2,

confirming a 2026 startup for a hydrogen electrolyzer at Huelva and another in 2027 at Algeciras.

A green ammonia plant with 750,000 mt/year capacity at Algeciras is also due to start operations in 2027 as part of a deal with supplier Yara at Algeciras and offtaker Gasunie at the port of Rotterdam.

The company has started selling SAF at four Spanish airports in July from Algeciras.

Cepsa said March 2023 it would build a new unit to produce second-generation biofuel at the Huelva refinery with an investment of Eur1 billion. The plant will produce renewable diesel and SAF. The biofuels will be produced from organic waste, including used cooking oil and agricultural residues.

The plant will contribute to Cepsa’s strategy to reach 2.5 million mt/year of biofuel production by 2030, making it a leader in the Iberian peninsula. The total will include 800,000 mt/year of SAF.

\*\* Italy’s Saras could start producing biofuels by “upgrading” an existing refinery desulfurization unit, which would allow it to produce 200,000 mt/year of biofuel, it said July 2023.

### Existing entries

\*\* France’s TotalEnergies said June 2023 that it will invest Eur70 million in its La Mede biorefinery during its first big maintenance in 2024. The aim of the investment is to enable the refinery to process more used cooking oil and animal fat into biofuels. Since 2019, La Mede has been capable of producing 500,000 mt/year of renewable diesel. The investment is part of the company’s objective to achieve 75% waste from circular economy as well as the acceleration of production of sustainable aviation fuel.

\*\* Italy’s Sarpom refinery has inaugurated the start of production of advanced biofuel will be produced from second-generation biomass, local media reported.

\*\* France’s TotalEnergies said it is “stepping up” production of sustainable aviation fuel at the site of

its former Grandpuits refinery in France to 285,000 mt/year, “more than double the capacity announced in 2020.” TotalEnergies will also construct biomethane production unit at the zero-crude platform at Grandpuits, with annual capacity of 80 GWh, which will be supplied with organic waste from the biorefinery.

Grandpuits, near Paris, stopped refining in the first quarter of 2021 and will be converted to a zero-oil platform.

Technip Energies has been awarded a contract by TotalEnergies for the production of sustainable aviation fuel at the Grandpuits refinery.

Separately, Air Liquide is to invest over Eur130 million in a low-carbon hydrogen unit at the Grandpuits biorefinery. TotalEnergies has committed to buy the hydrogen under a long-term contract to produce sustainable aviation fuel. The new reforming unit, with capacity to produce over 20,000 mt/year of hydrogen, will partly recycle residual biogas from the Grandpuits biorefinery, in place of the natural gas it normally uses.

\*\* Lummus Technology said June 2023 that it has agreed with Hungary’s MOL Group to cooperate in “the deployment and integration of chemical recycling of plastics at MOL’s assets in Hungary and Slovakia.” “Chemical recycling of plastics is part of MOL’s commitment to collect close to 5 million tonnes of municipal solid waste, which includes the treatment and related investments,” the companies said in a statement.

Lummus will provide MOL “its advanced waste plastic pyrolysis technology, which effectively converts plastic waste into high-value chemicals and feedstocks, creating circularity,” the statement said, adding that MOL plans to build a production portfolio of over 100,000 mt/yr recycled plastic materials.

Separately, MOL will build a 10-MW electrolyzer for renewable hydrogen production at its Danube refinery in Szazhalombatta, Hungary. The electrolyzers from US company Plug Power will produce 1,600 mt/year of green hydrogen, with operations starting in 2023.

\*\* French President Emmanuel Macron has announced the construction of a bio-refinery in Lacq in southwest France as part of a series of investments to decarbonize aviation, according to French media reports. The start-up Elyse Energy will build the plant with partners Avril, Axens, Bionext et IFP Investissements. The plant will have a total capacity of 110,000 mt/year of biofuels including 75,000 mt/year of sustainable aviation fuel and 35,000 mt/year of bio-naphtha.

\*\* France's TotalEnergies said it has signed an agreement with VNG, a German natural gas distribution company, to start green hydrogen supply to its Leuna refinery in Germany which will contribute to its decarbonization. The hydrogen will be produced from renewable electricity at a 30 MW electrolyzer operated by VNG with its partner Uniper. The pipeline connection with the electrolyzer in Bad Lauchstadt will "give the Leuna refinery access to the future European hydrogen infrastructure and the international markets for green hydrogen."

\*\* France's TotalEnergies said June 2023 it is "actively responding to a call from its aviation customers to increase production of sustainable aviation fuel (SAF)" and from 2028 will produce 500,000 mt/year of SAF at its sites in France. The volume, which will come from its Grandpuits, Gonfreville and La Mede plants, will be "enough to cover the gradual increase in the European SAF blending mandate, set at 6% for 2030."

Grandpuits will be able to produce 210,000 mt/year of SAF as of 2025 and further 75,000 mt/year by 2027. At the Gonfreville refinery in Normandy the company started coprocessing SAF from used cooking oil. It plans to increase annual production to 40,000 mt from 2025. It will also produce additional 150,000 mt/year by coprocessing HVO biodiesel produced at La Mede.

Biodiesel produced at the biorefinery La Mede is already used at the Oudalle plant near Le Havre to make SAF.

Meanwhile TotalEnergies is studying a new investment to have the capacity to process by 2024 at La Mede 100% waste from circular economy, such as used cooking oil and animal fat to produce biofuels and SAF by coprocessing.

La Mede stopped processing crude oil at the end of 2016 and was converted into a bio plant in 2019.

\*\* Finland's Neste has made the final investment decision to build upgrading facilities for liquefied plastic waste at its Porvoo refinery, it said June 2023. The facility will have a capacity to upgrade 150,000 mt/year of liquefied plastic waste which can then be used as high-quality feedstock for new plastics. It is due to be finalized in the first half of 2025.

"We have developed our capability to process circular raw material at the Porvoo refinery over the recent years and are now set to build a respective facility," said Markku Korvenranta, Executive Vice President in Neste's Oil Products.

Neste started processing liquefied waste plastic at Porvoo in 2020 as trial runs. The company has said it aims to process more than 1 million mt/year of plastic waste from 2030.

Neste aims to make its Porvoo refinery the most sustainable in Europe by 2030 and possibly end crude refining by the mid-2030s. The transformation of the Porvoo refinery would start with coprocessing of renewable and circular feedstock and could continue with the retrofit of existing units at a later stage.

Neste is also developing a lignocellulosics project which aims to convert "forestry-based waste and residue raw materials into advanced biofuels" at Porvoo.

Separately, Neste said it has decided to "proceed to the basic engineering phase" of a 120 MW electrolyzer project at Porvoo aimed to produce green hydrogen. If an investment decision is made in 2024, production could start in 2026. The green hydrogen would be used primarily in Porvoo to replace hydrogen produced from fossil fuel and will support the company's goal "to

transform the Porvoo refinery to the most sustainable refinery in Europe by 2030," it said.

\*\* BP's Castellon and Cepsa's Huelva refineries have been awarded around Eur15 million apiece from Spanish energy transition funds to build hydrogen electrolyzers. The project at Castellon is a 25 MW electrolyzer (named gH2 project), which will be developed together with Spain's Iberdrola at a total cost of around Eur43 million. BP previously said it plans to have 60 MW of electrolyzer capacity in operation at the site by 2025, 200 MW by 2027 and 2 GW by 2030.

BP also plans Castellon's production of biofuels triple to 650,000 mt/year by 2030 with the green hydrogen used as a feedstock in biofuel production, specifically of SAF. The refinery also has a target to triple sustainable jet fuel output to 15,000 b/d as part of its overall decarbonization program.

\*\* Operator Petronor said May 2023 that owner Repsol and Saudi Aramco have taken a final investment decision to construct a synthetic biofuel plant at Bilbao that will be completed in 2025. The project was previously targeted for 2024.

The companies will invest Eur103 million between them to produce the fuel, which can be used in any combustion engine for road, air and sea vehicles.

The plant will be the first at industrial scale to use CO2 and green hydrogen as feedstock to output 2,100 mt/year of fuel, equal to 18,000 barrels. The project includes a 10 MW electrolyzer, which will have Enagas and Ente Vasco de Energia as partners. Bilbao has been approved as a recipient of EU funding for a planned 100 MW of hydrogen electrolyzer capacity. The refinery is due to conclude the first phase in 2023 with 2.5 MW before scaling it up to 100 MW by 2025.

\*\* Greece's Helleniq Energy said in May 2023 that the pilot investment in "green" hydrogen at the Elefsis refinery "edges closer to the final investment decision," while projects for the production of biofuels, such as HVO and SAF at its refineries, are "in the implementation phase."

\*\* OMV Petrom said May 2023 that it has signed a financing contract through the National Plan for Recovery and Resilience for the production of green hydrogen at the Petrobrazi refinery in Romania. The project involves putting into operation a capacity of 20 MW for production of hydrogen by water electrolysis, which will be powered by renewable energy. It is estimated to produce over 2,600 mt/year. The final investment decision is due to be made in 2024 with completion expected for 2025.

\*\* Germany's Schwedt refinery will halt fossil fuel processing and be transformed into a "hydrogen hub" producing synthetic and biofuels and other products by 2045, the refinery's management said at a press conference, according to local media reports. The refinery, which can currently produce around 11 million mt/year of oil products, would be able to make about 1 million mt/year of synthetic aviation fuels, 1 million mt/year of methanol and high-value chemical products, and 1 million mt/year of biodiesel, ethanol and biomethane, according to the reports. In order to produce synthetic hydrocarbons, the refinery will need 800,000 mt/year of green hydrogen from 2045. By 2027 it is expected to have electrolyzer capacity of 400 MW which would be able to produce 30,000 mt/year of hydrogen, with production reaching 160,000 mt/year in 2030 and increasing further to 240,000 mt/year, renewable energy services provider Enertrag, which is working on the feasibility study for the plant's transformation together with the refinery's management, said in a statement May 9.

\*\* Repsol said it was retrofitting the hydro units in all five Spanish refineries it operates to increase its use of bio feedstock as the business was starting to give positive impetus to its refining margins. Mild hydrocracker units at A Coruna, Bilbao and Puertollano as well as hydrocrackers at Cartagena and Tarragona will all be modified with no real capex impact, CEO Josu Jon Imaz said.

\*\* The European Commission has approved a

Eur158 million Polish green hydrogen support package for Poland's Gdansk refinery under state aid rules, it said in April 2023. PKN Orlen via its LOTOS Green H2 subsidiary plans a 100 MW electrolyzer to produce renewable hydrogen used in refinery processes as well as a 50 MW solar power plant and 20 MWh battery storage, it said. The electrolyzer is expected to start operating in 2027 and gradually increase production to 13,600 mt/year.

\*\* Poland's PKN said its 2022 investments included the construction of a hydrotreated vegetable oils installation at Plock. PKN Orlen had approved a Zloty 600 million investment to build a HVO unit to produce biofuels at its Plock refinery. The unit will process used rapeseed oil to produce an additive to diesel or aviation fuel. The annual production of the unit will be 300,000 mt of biodiesel or aviation biofuel. The start of production is scheduled for mid-2024.

\*\* Poland's PKN said its 2022 investments included the construction of a bioethanol unit at the company's small Polish biofuels plant, Orlen Poludnie. PKN Orlen is also constructing a hydrogen plant at its Poludnie biorefinery in Trzebinia. Annual production will be 16 million cu m, and three-quarters of that will be used to produce glycol. The remainder will be used to produce 45 kg/h of fuel-grade hydrogen for use in transport.

\*\* PKN Orlen said its subsidiary Orlen Poludnie has signed an agreement to build a "complex of units for production of II generation bioethanol" at its biofuel refinery in Jedlicze, southern Poland. The B2G complex will include a main unit for bioethanol production and will have the capacity to produce 25,000 mt/year of bioethanol from biomass. In the next stage, a biogas plant will be built. The biomass will be mainly cereals straw sourced from Polish farmers. The bioethanol complex will also include a biomass-fired combined heat and power plant, which will generate heat for bioethanol production. The Jedlicze refinery is a small former petroleum refinery, which together with the Trzebinia refinery, was incorporated into Orlen

Poludnie, the company's biofuels subsidiary.

\*\* Gunvor Group said that as part of its Rotterdam refinery starting a "journey to a sustainable future" it has been renamed from Gunvor Petroleum Rotterdam to Gunvor Energy Rotterdam, "a name that is more inclusive of the increasing number of energy transition projects that are underway." The new programs underway at the site include "plastics recycling and a proposed green hydrogen import terminal", it said adding that more projects are being planned. Gunvor had already closed the two crude processing units at the refinery, one in 2019 and the other in 2020, saying that it was developing new processes around hydrogen and co-processing of vegetable oil.

In Oct. 2021, Gunvor said it had agreed to partner with petrochemical group Dow to purify pyrolysis oil feedstocks derived from plastic waste, using an existing unit at its refinery site in Rotterdam. The venture will purify pyrolysis oil feedstock derived from plastic waste that are of sufficient quality to produce new polymers. Under the deal, Gunvor will supply cracker-ready feedstock to Dow in Europe, which will be used to produce circular plastics for customers.

\*\* Phillips 66 is looking at carbon capture and storage as well as electrolytic green hydrogen production to decarbonize operations at its Humber refinery in the UK, Commercial Manager for Emerging Energy Mike Wailes said Feb. 2023. The initial focus is on post-combustion capture from the refining process, including from the crude topping unit, fluid catalytic cracker and hydro-desulfurization unit, with further more expensive options coming from refueling to use hydrogen, he said.

Phillips 66 is developing a 100-MW electrolyzer to be powered by offshore wind which can be scalable to 300 MW.

The Humber refinery completed its first delivery of SAF under a supply agreement with British Airways in early 2022.

Phillips 66 has said previously its UK refinery was

moving to produce 5,000 b/d renewable diesel by 2024 after expanding capacity to 3,000 b/d from 1,000 b/d. Humber produced 1,000 b/d of renewable diesel in 2020, after starting production in 2019.

\*\* Spain's Repsol is to build a new 25,000 mt/year production line for recycled polyethylene at its Puertollano site. The new line, which will produce high- and low-density polyethylene (HDPE and LDPE) with a recycled plastic content of 10%-80%, was expected to come into operation by the end of 2024. Current capacity for the plastics production at the site is 16,000 mt/year. Puertollano is also due to start a first polyurethane foam recovery plant this year at Puertollano while it also has plans to build a new unit to produce 15,000 mt/year of ultra-high molecular weight polyethylene (UHMWPE) to come online in 2024 with an investment of Eur105 million.

\*\* Renewable hydrogen company Everfuel has signed an agreement in Jan. 2023 to supply oxygen to an undisclosed company from its HySynergy electrolyzer in Fredericia, Denmark, enabling a higher utilization of the plant. The conditional agreement will improve the overall utilization and efficiency of the second phase of the electrolyzer, providing a long-term revenue stream, Everfuel said. HySynergy 2.0 will extend the existing 20 MW electrolyzer with 300 MW of additional capacity by 2025. It will be developed with Crossbridge Energy Fredericia and will produce hydrogen to decarbonize industrial processes and transportation. The first 20-MW phase started hydrogen production in December, with first commercial deliveries due in 2023. The plant, adjacent to the Fredericia oil refinery, will supply renewable hydrogen to the facility and for local zero-emissions transport, Everfuel said. The plant will send 80% of the hydrogen produced to the refinery for use as a feedstock in the refining process. The remaining 20% will go to hydrogen mobility applications. Phase two is to be built in three 100-MW stages.

\*\* Piling work for a new biofuel plant being built

by Shell at the site of Europe's biggest refinery, Shell Energy and Chemicals Park Rotterdam (formerly Pernis), was due to be completed around summer 2023, with the new plant expected to start up in 2024 or 2025. Shell is building an 820,000 mt/year biofuel plant in Rotterdam to produce sustainable aviation fuel and renewable diesel from waste. The facility will not use virgin palm oil as a feedstock although it will process vegetable oils, such as rapeseed, to supplement the waste feedstocks "until even more sustainable advanced feedstocks are widely available," it said.

\*\* Repsol along with Spanish companies Naturgy and Reganosa plan to construct a hydrogen electrolyzer at Meirama, close to the A Coruna plant, with the output used to feed the refinery. The first phase of the project will see 30 MW of installed capacity by 2025 at the site of a closed thermal power plant. A subsequent upgrade will take the project to 200 MW capacity, producing 30,000 mt of green hydrogen per year. A newly installed hydrotreatment unit at Spain's A Coruna that processes vegetable and cooking oils was expected to boost biofuel output by 5,500 mt/year in 2022, with the volume rising to 10,500 mt/year by 2024.

\*\* Turkey's Tupras said it had completed basic engineering studies to produce sustainable aviation fuel at its Izmir refinery using Honeywell's UOP ecofining technology. Tupras said it plans eventually to produce 400,000 mt/year of SAF, renewable diesel and other products at Izmir.

\*\* Croatia's INA is studying options for its Sisak refinery, including a biorefinery, biogas plant and production of pure hydrogen.

\*\* Italy's Eni said it was "investigating the opportunity to build a new bio-refinery at Eni's industrial site in Livorno." It will be Eni's third biorefinery in Italy after converting its Gela and Venice refineries into biofuel plants. Eni said its feasibility study involves building "three new plants for the production

of hydrogenated biofuel: a biogenic feedstock pre-treatment unit, a 500,000 mt/year Ecofining plant and a plant for the production of hydrogen from methane gas." The design of the three plants will be completed by 2023 and construction by 2025. Local officials welcomed the potential conversion of the Livorno refinery into a biorefinery as it would maintain "the current workforce and the entire production chain."

\*\* Italy's Eni has started producing SAF at its Taranto refinery in southern Italy, as part of its commitment to decarbonize all its products and processes by 2050. Eni plans to increase its bio-refining capacity to 5 million-6 million mt/year by 2050. Eni targets its SAF capacity to reach at least 500,000 mt/year by 2030. Eni said its SAF production will continue to grow with the start-up of over 10,000 mt/year of SAF from its Livorno refinery using bio-components produced in Eni's existing Gela and Venice bio-refineries. In 2024, Eni plans to launch SAF production at the Gela bio-refinery, where a project is underway for a further 150,000 mt/year of SAF production from 100% renewable raw materials by 2025.

\*\* Italy's Eni said that it will install a 20 MW electrolyzer at its Gela biorefinery and a 10 MW electrolyzer at its Taranto refinery. The electrolyzers will be part of a project to develop green hydrogen by Enel Green Power and Eni which will receive public funding approved by the European Commission.

\*\* Ineos has awarded a design contract for a planned 190,000 mt/year low-carbon hydrogen production plant at its Grangemouth refining and petrochemical site in Scotland to engineering company Atkins. The plant is expected to be operational by 2030.

\*\* Essar, the owner of the UK's Stanlow refinery, said it has received a hydrogen-powered furnace, which is the first in the UK. The furnace has been commissioned by Essar Oil UK "as it transitions to run its operations on hydrogen as part of HyNet, the UK's leading decarbonization cluster," it said. The furnace,

which will run on 100% hydrogen fuel from 2026, “forms a central part of Essar’s strategy at Stanlow to become the UK’s first low-carbon refinery.” The furnace will replace three gas-fired furnaces at the plant’s crude distillation unit. Essar is also developing 300,000 cu m of biofuel storage capacity at the site, allowing customers to store, blend and distribute biofuels for the road, aviation and marine sectors. It will become the UK’s largest biofuels storage facility when completed.

\*\* OMV Petrom will start producing SAF at its Petrobrazi refinery, which will become the first refinery in Romania to produce the fuel. The refinery will produce SAF by coprocessing locally produced rapeseed oil. In the future, it aims to increase the production capacities and produce sustainable fuels based on various waste feedstocks, such as used cooking oil. “Our goal is that, in 2030, to have an annual combined production of SAF and HVO (hydrotreated vegetable oil) of about 450 thousand tons,” Radu Caprau, member of the Executive Board responsible for Refining & Marketing said.

\*\* Repsol and partners Enkern and Agbar have presented a project to transform 400,000 mt/year of urban waste to 220,000 mt/year methanol at Tarragona, which should start up in 2025 with an investment of Eur250 million. Spain’s Tarragona has started on a series of energy transition projects, including the manufacture of biofuel for aviation and an advanced biofuels plant, which is already under construction. The refinery plans to build a 100-MW hydrogen electrolyzer by 2025.

\*\* OMV said that together with AEG Fuels it will supply SAF from its Schwechat refinery on-demand for the “general aviation segment” to be used as an alternative to conventional jet fuel at the Vienna International Airport. SAF is produced at Schwechat by co-processing Austrian used cooking oil and is supplied via a direct pipeline connection to Vienna’s international airport. OMV had also supplied the first

batch of SAF to Vienna International Airport for fueling Austrian Airlines aircraft. Schwechat has received the two main components for producing SAF — the reactor and column. From mid-2023 up to 160,000 mt of liquid biomass will be converted into SAF using an innovative co-processing method, it said. “The new reactor will process substances including vegetable oil together with other feedstocks in a procedure known as co-processing. This innovative process involves refining the biogenic feedstock via a hydrogenation process using hydrogen,” OMV said. In the future, the process can be used for processing other feedstock such as used cooking oil or advanced biofuels. OMV plans to increase its SAF sales to more than 700,000 mt/year by 2030. Separately, OMV will build the country’s largest electrolysis plant at the Schwechat refinery through a joint investment with Kommunalkredit Austria AG. The plant is expected to start in H2 2023. The 10 MW polymer electrolyte membrane electrolysis will produce up to 1,500 mt/year of green hydrogen.

\*\* Germany’s Bayernoil is looking at producing SAF from sewage sludge. It could convert 100,000 mt of sewage sludge into SAF annually under Project Bayosine. The processing, which involves pyrolysis, can be done in a new unit at the Vohburg site of the plant.

\*\* Sweden’s Preem aims to expand the HVO capacity at its Gothenburg plant from 320,000 cu m/year to 1.3 million cu m/year in 2026. “This is planned to take place in a completely new facility designed to produce renewable vehicle fuels and aviation fuels with great flexibility,” it said. In its Lysekil plant, production of HVO from the Synsat plant “was the highest to date,” the company said. Preem is rebuilding the existing Synsat plant, so it can produce renewable raw materials and replace part of the fossil production. It is expected to reach renewable production capacity of 950,000 cu m/year by 2024.

\*\* Finland’s UPM expects its Leuna biorefinery in Germany to be operational by the end of 2023 and ramp up in 2024. Construction of the facility, which will

produce a range of 100% wood-based biochemicals, started in 2020. Its total annual capacity will be 220,000 mt bio-monoethylene glycol and lignin-based renewable functional fillers. It will also produce monopropylene glycol and industrial sugars made from sustainably harvested beechwood sourced regionally in Germany.

\*\* Greece’s Motor Oil Hellas said its Corinth refinery by 2030 aims to enhance its pure hydrogen infrastructure through demonstration and scale-up of green hydrogen. In the long term, it aims to be a “large producer of clean hydrogen”.

\*\* Repsol’s Cartagena has started construction of its planned second-generation biofuel plant at the nearby to the refinery Escombreras facility, which should result in the production of 250,000 mt/year of biodiesel from waste from mid-2023. The company will invest Eur200 million in the project that would output biodiesel, biojet, bionaphtha and biopropane, allowing an overall CO2 reduction of 900,000 mt/year. As part of its drive to decarbonize the refinery, Repsol also plans to build a 100 MW hydrogen electrolyzer at Cartagena, with a target date of 2025.

\*\* Orsted and BP are to jointly develop a 50 MW renewable hydrogen project at BP’s Lingen refinery in Germany. The project, expected to be operational in 2024, would comprise a 50 MW electrolyzer capable of generating 9,000 mt/year of hydrogen, 20% of the refinery’s current fossil-based hydrogen consumption. The electrolyzer is expected to be powered by an Orsted North Sea offshore wind farm. The partners have a longer-term ambition to build more than 500 MW of renewable hydrogen capacity at Lingen, providing renewable hydrogen to meet all the refinery’s hydrogen demand and provide feedstock for future synthetic fuel production.

\*\* Italian energy company Eni and SEA, the operator of Milan’s Malpensa and Linate airports, have signed an agreement to supply SAF for commercial flights, as a step towards accelerating the “ecological transition”



of the two airports. Eni plans to develop Eni Biojet which will be made “exclusively” from used cooking oil or animal fats and can be “used in a blend with conventional jet fuel of up to 50%,” Umberto Carrara, Director of Green/Traditional Refining and Market at Eni said. The company plans to produce around 200,000 mt/year by 2024 and double the production by 2030.

\*\* BP has partnered with Dutch green hydrogen company HyCC to develop its 250-MW H2-Fifty electrolyzer project in Rotterdam. The companies will next select a technology partner for the previously announced renewable hydrogen project and begin environmental studies, with a final investment decision expected in 2023. The project is expected to come online in 2025. The renewable hydrogen produced at the facility will replace fossil-based feedstock at BP’s Rotterdam refinery and other industries in the area. The plant will be situated in the Maasvlakte area of Rotterdam.

\*\* Russia’s Lukoil said in December 2021 that it has signed memorandum of intent with Rusatom Overseas, part of the Rosatom Group, to cooperate in the production and supply of green hydrogen for the company’s Petrotel refinery in Ploesti, Romania.

\*\* Varo Energy’s Cressier refinery in Switzerland will use solar panel generated electricity by 19,000 photovoltaic panels for a “significant portion” of the electricity it consumes. Varo Energy Group and Groupe E will build the “most powerful ground-mounted solar facility in Switzerland” with an installed capacity of 7.7 MW. It will be built in the industrial zone east of the refinery. At full power, the park will be able to supply more than 60% of the refinery’s needs.

\*\* ExxonMobil, Macquarie’s Green Investment Group, and SGN are studying the potential for a low-carbon hydrogen hub centered around ExxonMobil’s Fawley refinery on the UK’s south coast. Initial hydrogen production could be around 4.3 TWh/year from 2030. Hydrogen demand in the Southampton

industrial cluster around the refinery could reach 37 TWh by 2050.

\*\* Italy’s Saras is working on activating a green hydrogen plant for a total of 20 MW. Saras is building the green hydrogen plant with Italian utility Enel. The hydrogen produced would be used at the Sarroch refinery. It is currently provided by the IGCC complex and two reforming units on the industrial site.

\*\* The Refhyne II consortium, developing a 100-MW electrolyzer to produce renewable hydrogen for Shell’s Rheinland refinery in Germany at its Wesseling site, has received a Eur32.4 million grant from the EU. The project follows on from the 10-MW Refhyne I at the refinery, Europe’s largest proton exchange membrane electrolyzer, which started operations in July 2021, producing up to 1,300 mt/year of renewable hydrogen. The five electrolyzer modules, with a total 10 MW of capacity, have been installed at the Wesseling site. The refinery comprises the Wesseling (south) and Godorf (north) sites. Shell plans to end crude processing at the Wesseling site in 2025. Delivery of the Refhyne II is expected for 2024. Separately, Shell is planning to produce sustainable and synthetic aviation fuel using renewable power and biogenic sources.

\*\* Honeywell said that a trial to co-process biomass-based pyrolysis oil in the Lysekil FCC has been completed producing partially renewable transportation fuel. The refinery used Honeywell UOP’s proprietary bioliquid feed system. Swedish refiner Preem announced carrying out the first tests at Lysekil to produce renewable gasoline from sawdust as it has started to process pyrolysis oil at the FCC. Separately, a study by Preem and state-owned utility Vattenfall has shown “very good conditions” for an electrolysis plant at the Lysekil refinery which will produce hydrogen for biofuels. Preem aims to ramp up biofuels production to approximately 5 million cu m/year by 2030, which “requires a large-scale supply of hydrogen, where the expansion of one or more electrolyzers can play an important role.” In October 2020, Preem had

started a conversion of Lysekil that will make it the biggest producer of renewable fuels in Scandinavia. The company had abandoned an upgrade of the conventional oil refinery.

\*\* TotalEnergies has launched a research project with French waste and water utility Veolia to accelerate the development of advanced biofuels made from microalgae fed by CO<sub>2</sub>, the companies said. Under the agreement, the companies will set up a four-year research and testing project to grow microalgae at TotalEnergies La Mede biorefinery in southern France, with the long-term goal of producing biofuel. Separately, TotalEnergies and utility Engie have signed a cooperation agreement to design, develop, build and operate France’s largest renewable hydrogen production site near Total’s La Mede biorefinery. Production could start in 2024. The Masshylvia project at Martigues, west of Marseilles, will be powered by a 100-MW solar farm with a 40-MW electrolyzer set to produce 5 mt/day of green hydrogen to meet the needs of the biofuel production process at Total’s nearby biorefinery.

\*\* Germany’s Heide refinery aims to scale its 30 MW electrolyzer project to 300 MW by end 2025. The 30 MW pilot project is part of the Westkueste 100 consortium with Orsted, while the 300 MW expansion project is part of the HyScale 100 project. A final investment decision of the 30 MW pilot is to be taken with a view to a 2023 start date. Output from the electrolyzers will replace conventional hydrogen generated on-site. Using hydrogen blended with CO<sub>2</sub> to make methanol, the Klesch-owned refinery aims to be supplying 5% of the jet fuel used at the nearby Hamburg airport as SAF by 2024.

\*\* In Q1 2021, Polish refiner Grupa Lotos, majority owned by PKN Orlen, launched its Pure H<sub>2</sub> project, which includes the construction of a hydrogen purification unit and a system for supplying hydrogen to vehicles that haul compressed hydrogen at Gdansk. The project is scheduled to be completed in Q4

2023. Lotos plans to build a pilot 100 MW electrolysis installation and 20 MW power generation unit by 2025. The first stage of the investment will be a pilot project in 2020-25, including a 100 MW electrolysis installation, a 20 MW power generation unit, hydrogen storage and fuel cells. The company said its location in Gdansk on the Baltic Sea coastline was favorable for cooperation with planned offshore wind farms to produce renewable hydrogen. In the second stage between 2025-30, Lotos would look to expand the capacity of the electrolysis installation to 1 GW, and the associated gas-fired generation unit to 200 MW. Storage capacity would be increased to 2,500 mt of hydrogen. In a third stage to 2040, Lotos aimed to become the regional leader in the production and distribution of green hydrogen with plans to supply the gas to refineries and power generation plants, as well as injecting hydrogen into the gas grid. The electrolysis installation would be expanded to 4 GW with a 1 GW gas-fired generation unit, it said.

\*\* TotalEnergies' Antwerp refinery is interested in adding co-processing biofuel units to the refinery. The company said it was considering adding units to its existing refinery. There is no timeline for deciding about the project. De Standard newspaper cited Jacques Beuckelaers, CEO of Total Antwerp, as saying the units would have capacity of 150,000 mt/year and would process cooking oil and animal fats.

\*\* Germany's MiRo refinery in Karlsruhe is considering launching production of synthetic fuels, pending approval by the local government. The state of Baden-Wuerttemberg plans a large renewable fuels pilot project at the MiRo refinery.

## Launches

### Existing entries

\*\* Turkey's Ersan Petrol is still hopeful of its plans for a 1.4 million mt/year refinery at Kahramanmaraş in southeast Turkey will be able to go ahead despite

repeated delays and a difficult investment climate. Project coordinator Cenk Pala said Ersan was in talks with prospective partners and sources of finance for the project and hopes to start work on the FEED study this year. The refinery is planned for a 300,000 sq m site in Kahramanmaraş which holds a defunct mini refinery that will be dismantled. A pre-feasibility study by Axens has defined the configuration and capacity of the plant which will produce mainly Euro 5 diesel, Euro 5 gasoline, jet and bitumen.

\*\* A new greenfield Porto Romano refinery in Albania will be oriented to export markets but will also be able to cover Albania's domestic demand, Helmut Mayrhofer, consultant at Larkalis said. Austria-based consultancy Larkalis is leading an international consortium working on the project which will involve building the refinery in the port town of Durres. The refinery has a two-year construction authorization and could be commissioned by end-2025, depending on international developments.

\*\* Azeri state oil company Socar is considering developing a second refinery in Turkey, in addition to its existing 214,000 b/d Star refinery at Aliaga on Turkey's central Aegean coast.

### Japanese airline ANA to buy carbon credits from 1PointFive's DAC plant

- Deal involves 10,000 mt of removal credits
- 500,000 mtCO<sub>2</sub>e/year plant to be ready in 2025
- CDR seen as key technology to help reduce emissions

Japan's All Nippon Airways has signed a deal Aug. 1 to buy carbon removal credits from a direct air capture plant (DAC) in US developed by 1PointFive.

1PointFive, a subsidiary of US energy company Occidental Petroleum, is currently constructing a DAC plant in Texas, expected to be commercially operational in mid-2025.

CO<sub>2</sub> removal, or CDR, refers to climate mitigation strategies that remove CO<sub>2</sub> emissions from the atmosphere, in contrast to strategies to avoid such emissions.

The airline has agreed to purchase 10,000 mt of CDR credits per year for three years beginning in 2025.

The DAC plant in Texas, is expected to remove and permanently store up to 500,000 mtCO<sub>2</sub>e/year once fully operational.

ANA, like many other airlines, is increasing its presence in the voluntary carbon market, whilst signing sustainable aviation fuel (SAF) supply deals.

### Climate tool

CDR technologies are seen as a necessary tool in the fight against climate change. CDR encompasses a wide array of approaches, including direct air capture coupled to durable storage, soil carbon sequestration, biomass carbon removal and storage, enhanced mineralization, ocean-based CDR and afforestation/reforestation.

Many in the voluntary carbon markets are looking to create a robust CDR market for a diverse portfolio of permanent carbon removal, and help shape policies to accelerate these technologies.

Platts, part of S&P Global Commodity Insights, assesses the price of carbon credits generated from technology-based carbon credits like direct air capture projects or other carbon capture and storage operations.

On July 31, Platts assessed tech-based carbon capture credits at \$132/mtCO<sub>2</sub>e. That compares with \$14/mtCO<sub>2</sub>e for standard carbon removal credits, according to Platts assessments from S&P Global.

This premium on tech-based credits reflects a much higher cost of implementing projects, but also a perception of lower risks linked to issues such as environmental integrity, additionality and permanence.

## US 2023-24 corn conditions decline on week; drought worsening

- Conditions down 2 percentage points on week
- 55% corn crops in good-to-excellent conditions
- Drought conditions in key corn belt areas worsening

US corn crop progress for marketing year 2023-24 (September-August) was down 2 percentage points in the week ended July 30, the US Department of Agriculture said.

In all, 55% of the corn crop was rated in good-to-excellent conditions, a decline from the previous week's 57% and the 61% in the same week last year, according to the latest USDA crop progress report published July 31.

Corn crop conditions are below the 1 percentage point decline as predicted by analysts. The decline comes in the backdrop of a consistent rise in US corn conditions over the past few weeks, owing to optimal showers in July.

About 30% of corn crop was assessed fair, up 5 percentage points on the year but consistent to the same number last week. Additionally, 10% of the crops were rated as poor, compared with 9% in the previous week as well as previous year.

Around 5% of the crops were rated as very poor, an increase from the 4% last week but same as 5% in the previous year.

US corn silking stood at 84%, up from 68% the previous week, 77% the previous year and the 82% average (2018-2022). The silking can be attributed to the much-needed rainfall across the Midwest in the first half of July, after a largely dry June.

Platts assessed US Corn CIF New Orleans at \$222.45/mt on July 31, according to S&P Global Commodity Insights data.

### Drought conditions expanding

Despite showers in July following a largely dry June, drought conditions still weigh on crop output.

According to the US Drought Monitor, 59% of corn crops are affected by moderate or worse drought, while 23% are experiencing severe or worse.

Drought conditions for US corn crops have achieved their second-highest levels for late July in 24 years.

Amid expanding drought conditions, last week was cooler but drier for US corn. Concerns largely weigh on dry weeks and less on hot temperatures.

Drought conditions are expected to worsen in the coming weeks and continue until mid-August.

## Malaysian palm oil prices seen higher at around MR3,700-4,200/mt in H2: MPOC

- CPO futures may rise to MR4,300/mt in 2024: MPOC
- Futures averaged at MR3,774.9/mt in H1
- Malaysian production slips 3% in H1 2023

Crude palm oil prices in Malaysia are likely to rise to MR3,700-4,200/mt (\$819.04-\$929.72) in the second half of the year, trade agency Malaysian Palm Oil Council said Aug. 1, aided by increased demand and lower palm oil production in the country.

MPOC expects palm oil prices to rise to MR4,300/mt in 2024, it said at a webinar.

CPO futures averaged at MR3,774.9/mt (\$835.42/mt) in H1, according to S&P Global Commodity Insights calculations.

Platts, a part of S&P Global, assessed crude palm oil FOB Indonesia at \$905/mt July 31. Physical prices have risen 5.7% in July, S&P Global data showed.

October crude palm oil futures on the Bursa Malaysia exchange were down marginally at MR3,870/mt on Aug. 1.

A day earlier, prices fell 3% following lower soybean oil on the Chicago Mercantile Exchange. The two oils trade in tandem and compete for market share in the global vegetable oils segment.

## Higher consumption, low stocks

Demand from India and China, the two largest palm oil buyers, are seen increasing collectively to 16.5 million mt in 2023, up from 15 million mt in 2022, according to MPOC's Deputy Director Mohd. Izham Hassan.

ASEAN and MENA regions will see higher demand this year amid insufficient domestic production and competitive price of palm oil, MPOC said.

Despite increasing consumption, supplies of palm oil remain low, particularly in Malaysia, the second-largest producer and exporter in the world after Indonesia.

In H1 2023, production was 3% lower than the same period in 2022, as per MPOC.

Uncertain supplies of sunflower oil from the Black Sea region due to the Russia-Ukraine war will also support prices.

MPOC's Hassan further said that Malaysia is still facing some labor shortages at plantations — a problem that has plagued Malaysian palm oil plantations since the pandemic when many foreign workers left the country.

Malaysia's crude palm oil production was pegged at 18.4 million mt in 2022 of which 15.7 million mt was exported, data from the Malaysian Palm Oil Board showed.

## Norway to introduce 6% biofuel mandate for domestic shipping [...from page 1](#)

In an emailed statement to S&P Global Commodity Insights, the Norwegian Environment Agency said suppliers need to use hydrotreated vegetable oil and fatty acid methyl ester that meet the EU Renewable Energy Directive's sustainability criteria to stay compliant.

Each supplier can determine its own blending ratio in fuel deliveries as long as it can ensure 6% from its total sales are attributed to HVO or FAME, according to the government agency. Bio-methane is not covered by the upcoming regulation.

Norway's biofuel mandate is expected to affect the bunker mix of passenger ships, coastal cargo carriers and offshore supply vessels in the Norwegian Continental Shelf.

Total deliveries of petroleum products to the Norwegian water transportation sector, including bio-blends, rose to 442 million liters in 2022 from 422 million liters in the previous year, according to government data from Statistics Norway. Marine gasoil and diesel deliveries rose to 384 million liters

from 349 million liters.

For pure biofuels, total deliveries jumped to 3.11 million liters in 2022 from 1.16 million liters in 2021.

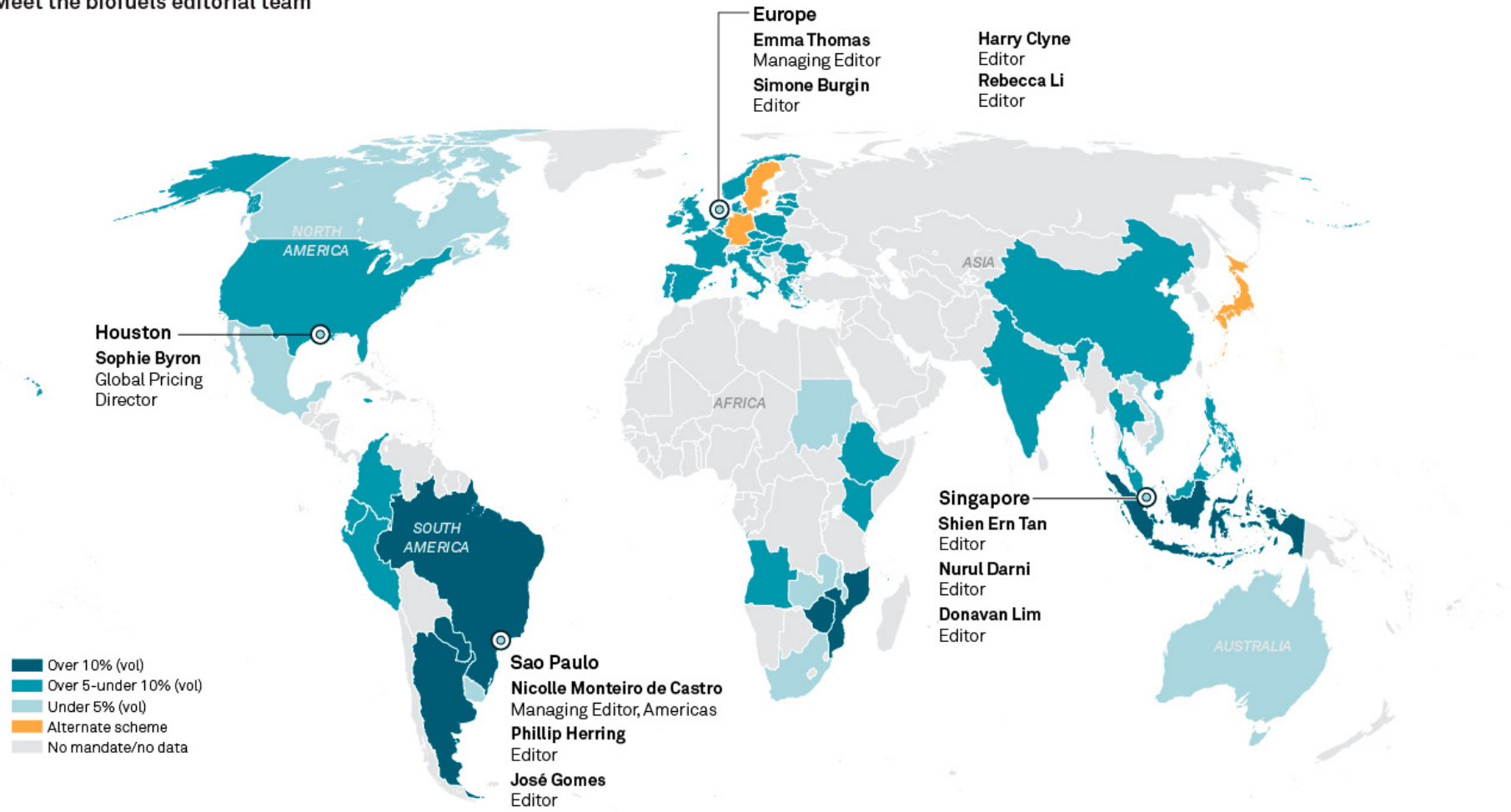
Biofuels have become a popular choice among shipowners looking to decarbonize their operations in recent quarters, providing a "drop-in" solution that requires little to no retrofitting of vessels.

In its reference case, S&P Global expects biofuels to account for 6.2% of global low-carbon bunker supplies in 2030.

Aside from the biofuel regulation, the Norwegian government has said it is studying a new Emissions Control Area to promote green shipping.

The existing North Sea ECA, where sulfur limits for marine fuels are 0.1%, covers part of Norwegian waters and the world heritage fjords in western Norway. The government separately plans to ban ships emitting greenhouse gas emissions from the fjords from 2026.

### Meet the biofuels editorial team



Source: S&P Global Commodity Insights

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