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Argus Biofuels Outlook

Overview

Biofuel markets were driven by bearish sentiment last month, as falling demand for road fuel owing to high prices and inflation fears put pressure on the prices buyers offered for blending components. Falling gasoline prices in September removed some of the support for high ETBE and ethanol prices, with additional pressure coming from weaker road fuel demand in major European markets. A fall in rapeseed oil (RSO) prices in late August led to a drop in biodiesel prices from all feedstocks. Rapeseed methyl ester (RME) prices fell by over quarter in September, but are now in line with historical averages. Collapsing RME prices led to a stand-off between vegetable oil suppliers and refiners on the price to pay for FAME 0 feedstocks, which fell by 10pc, tracking changes in palm methyl ester (PME) and soy methyl ester (SME) prices. Some European biofuel producers are considering production cuts or shutdowns, as rising energy costs and falling product prices have wiped out margins.

In the US, ethanol demand remained largely stable but prices took a downward turn and producers may be considering cutting runs to stabilise prices, ahead of seasonally lower demand for the fourth quarter. Sluggish September demand also weighed on biodiesel and renewable diesel (RD) markets, but higher demand is forecast for October as middle distillate demand grows and a rise in blending rates is expected. With the bulk of 2022 biodiesel sales concluded, the D4 RIN markets have shifted to 2023 supply, despite a weak biodiesel margin environment underpinning the current year's D4 credits. LCFS credits fell significantly through September on structural oversupply, with recent news pointing to legislative changes coming to the system soon.

Key biofuel prices, prompt

	Aug 22	Sep 22	Oct 22e	Nov 22e
Europe				$/t
RED FAME 0°C CFPP fob ARA range	1,726	1,553	1,615	1,578
RED Rapeseed OME fob ARA range	2,299	1,661	1,810	1,851
RED UCOME fob ARA range	2,270	1,904	2,056	2,105
RED HVO fob ARA range (Class I)	2,472	2,436	2,508	2,433
RED HVO fob ARA range (Class II)	3,109	2,987	3,063	2,942
SAF fob ARA range (Class II)	3,503	3,418	3,483	3,312
Bionaphtha fob ARA	3,229	3,088	3,183	3,062
UCO cif ARA range	1,446	1,255	1,357	1,389
Ethanol Regular fob ARA range	1,331	1,252	1,201	1,141
US (biofuels)				¢/USG
Ethanol Chicago (Argo in-tank transfer)	254	241	249	257
Ethanol USGC fob Houston	264	255	263	271
B100 SME Chicago (Argo in-tank transfer)	709	698	715	722
R100 (UCO-based) del California	878	860	854	854
US (feedstocks)				¢/lb
Soybean oil crude degummed US Gulf coast del rail	75	72	70	68
UCO US Gulf coast del rail	80	77	72	70
Tallow bleached fancy US Gulf coast del rail	73	75	73	71
Asia-Pacific				$/t
RED HVO Class II Singapore fob	3,005	2,869	2,936	2,814
UCO fob China	1,150	1,058	1,081	1121
Ucome RED fob China	1,611	1,464	1,502	1,542

NORTH AMERICA

Summary

This month

Higher demand across the renewable diesel (RD) and biodiesel sectors in October, driven by rising middle distillate demand, higher RD production and peak biofuel blending season, should alleviate a relatively undersupplied 2022 vintage D4 RIN market emerging from a slow September for RD production and bullish June generation data. Middle distillate side are poised to rise owing to unrelenting demand, a global shortage and mounting geopolitical tensions. The US ethanol industry continues to run at reduced rates in the face of high corn prices and an anemic export environment, while demand should hold steady alongside stable gasoline consumption and rising prices as the country's stocks are drawn down.

Next month

The EPA is due to release at least two or three years of proposed biofuel mandates by 16 November, and it is widely anticipated that the agency will publish regulations surrounding the use of renewable electricity in transportat to qualify for credits — the e-RIN.

3-6 months ahead

The impact of the transatlantic supply and demand balance will prove particularly turbulent for the Nymex ultra-low sulphur diesel (ULSD) contract, which could prove bearish for D4 RINs and other renewable credits, as blending margins will rally.

6-12 months forward

The US renewable energy industry will increasingly be run as a carbon reduction programme as the Inflation Reduction Act drives industry and investment decisions. Measures to introduce carbon capture and sequestration along with carbon utilisation, while already under way at many facilities, are likely to prove the first wave in reducing the carbon footprint across many industries as these are potentially easier to achieve than other options for decarbonisation. Alcohol-to-SAF will also be an attractive technology as the US will need to find ways of managing its structurally oversupplied ethanol industry and dwindling export competitiveness.

Regulation

EPA likely to set multi-year mandates, e-RINs expected

The US Environmental Protection Agency (EPA) is attempting to issue a proposal by 16 November that will set renewable fuel mandates and biofuel blending targets for at least two years, and is anticipated to include regulations on the new e-RIN, which would enable renewable electricity used in transportation to qualify for credits. Clean hydrogen for use in electric vehicles (EVs) would be the most immediate source, but tracking and auditing the path of clean hydrogen from its production to the charging station will prove challenging.

The rule, once finalised, will specify how much renewable fuel, advanced biofuel, cellulosic biofuel and biomass-based diesel is required to be blended under the Renewable Fuel Standard. The programme requires refiners and importers to ensure a certain percentage of biofuels within the supply of transportation fuels each year. The EPA expects to finalise the multi-year proposal by 14 June 2023.

US weighs new biodiesel record-keeping options

The US government is considering new ways that biodiesel and RD producers could achieve record-keeping requirements that were part of biofuel blending requirements set for 2020. The US EPA has been working on "practical compliance options" for the record-keeping component of the 2020 rule, leading to an agreement to suspend industry-filed litigation.

DOE unveils SAF plan

The US Department of Energy (DOE) has created a SAF Grand Challenge Roadmap detailing a federal plan for cleaner fuel standards for aviation. The two components of this roadmap, signed in 2021, are to achieve a 50pc reduction in GHG emissions compared with petroleum-derived fuel and to have 100pc of aviation fuel be comprised of SAF, both by 2050. The objectives are to use 3bn USG/yr of SAF by 2030 and 35bn USG/yr of SAF by 2050. Fats, oils and greases are expected to be the main feedstocks for fuel used to achieve these goals by 2030, with a smaller amount expected from waste, forest and alcohol pathways in the near term. The Inflation Reduction Act enacted in August allocates $369bn for climate change and energy security, offering the tools and the funding necessary to make the DOE's roadmap a possibility.

Oregon toughens LCFS targets

Oregon regulators adopted stricter new Clean Fuels Program (CFP) targets on 23 September, setting a 20pc reduction in transportation fuel carbon intensity by 2030 and 37pc cut by 2035. The vote does not change a previous target to reach a 10pc reduction by 2025. The approval includes a new commitment to review the state's progress in 2026 and 2029, in response to concerns that the ruling could lock Oregon into unfeasible targets.

Washington state finalises GHG market rules

The Washington Department of Ecology has adopted its third and final GHG market rule, which outlines how the programme and its auctions will operate. The agency said it made only minor changes from its earlier proposed rule. The cap-and-trade scheme is designed to help Washington meet its mandate to cut GHG emissions by 45pc by 2035, compared with 1990, and to hit net zero emissions by 2050. The program will cover industrial facilities, power plants, natural gas suppliers and other fuel suppliers with emissions of at least 25,000 t/yr.

Demand

Ethanol

Demand stable on steady gasoline use, anemic exports

US ethanol demand is expected to hold at 912,000 b/d, or 1.187bn USG, in October, unchanged from September, owing to steady gasoline demand, before tracking lower throughout the remainder of the fourth quarter, in line with seasonal trends. Marginally higher October gasoline demand of just over 9mn b/d will be partially offset by a slight reduction in the blending rate to 10.12pc.

Wholesale ethanol prices shifted from steep discounts to gasoline to premiums during September, as higher corn prices and the lowest production since the pandemic underpinned ethanol pricing. A deteriorating environment for margins, coupled with rail problems, have resulted in nearly all producers running at reduced rates as limited on-site storage fills quickly and the threat of a national rail strike continues to loom. Large producers eyeing a worsening margin environment had already brought forward autumn maintenance to August and September, further reducing supply in a structurally oversupplied industry.

US ethanol demand remains relatively low, not just from flagging domestic gasoline consumption but also underwhelming export activity. US ethanol exports of 315,800t in September were 11pc lower than an already anemic 355,300t a month earlier.

Our fourth-quarter gasoline demand forecast is unchanged at 8.9mn b/d, while US ethanol demand during the period will average 894,000 b/d, or 1.15mn USG/month, steady from September's outlook. We see blending falling to a low of 9.90pc in December as cheaper components, particularly butane, edge out ethanol in key consumption regions, while on a volume basis January demand will fall to a low of 824,000 b/d, predicated on a blending rate of 9.95pc.

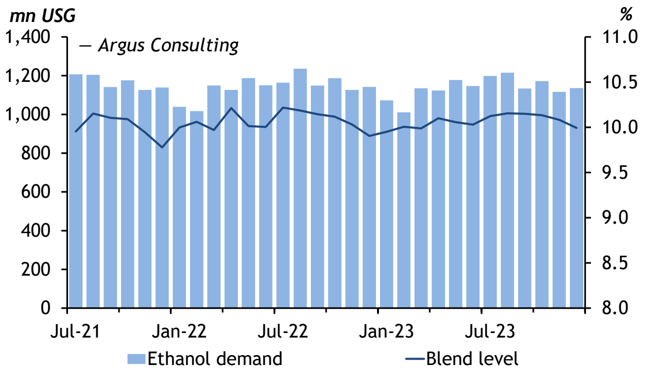
Biodiesel

Demand follows diesel use higher

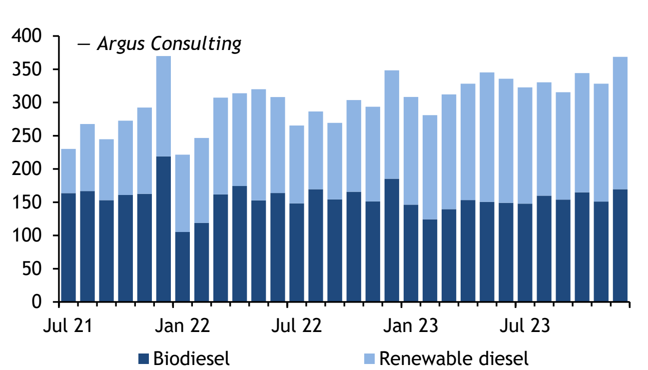
US biodiesel consumption is forecast to rebound to 166mn USG in October, up by nearly 8pc from September demand of 154mn USG. The bulk of the increase will be driven by rising diesel demand, which is forecast at above 3.9mn b/d.

We see biodiesel blending rates falling slightly this month, to 3.10pc from 3.12pc in September, although an improving margin environment could drive discretionary blending. The heating oil-soybean oil (HOBO) spread narrowed by 45¢/USG

US ethanol demand and blend level



US biodiesel and RD consumption *mn USG*



during the second half of September alone, owing to rising ULSD prices and a weaker December CBOT basis, surging to -$1.53/USG from -$1.98/USG, an increase of nearly 23pc over the course of just two weeks.

We have tempered our December biodiesel demand forecast to 186mn USG from last issue's 196mn USG, owing to retreating diesel demand, although we see blending rates rising to 3.59pc as discretionary blending is likely to react to a stronger margin environment. We do caution to the upside on December biodiesel demand as producers will be scrambling to generate more valuable 2022 D4 credits. Biodiesel blending peaks seasonally in December as producers maximise operations at the end of the year to capture the blender's tax credit (BTC).

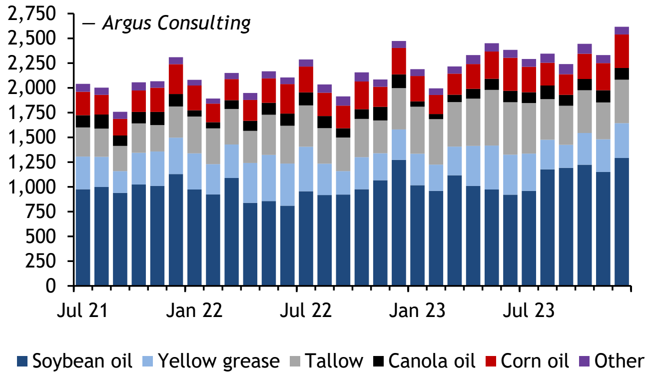
Renewable diesel

RD to rise on higher diesel demand and blending rates

US RD demand is forecast to climb by 20pc to 138mn USG in October, following a sluggish September, as US diesel demand is expected to pick up by 5pc on agricultural and heating demand. RD blending rates are poised to rise to 2.60pc in October, from 2.35pc a month earlier, when a catalyst issue at a major US Gulf coast production facility and rail logistics optimisation in anticipation of strike action left less product available for blending. September demand was revised down to 116mn USG from an original forecast of 118mn USG.

October finds the industry well supplied on feedstock, particularly UCO, as many producers have completed buying for the month. For prompt spot purchases, hefty losses in the December CBOT basis resulted in producers turning to oilseeds, snapping up canola and SBO, feedstocks that have tended to be prohibitively expensive in recent months.

US biodiesel and RD feedstocks demand *mn lbs*



We have lifted our RD blending rate outlook as additional supply during the fourth quarter and into 2023 will fill out an increasingly tight middle distillate market. We have increased our October blending rate to 2.60pc from 2.35pc in September, while fourth-quarter blending should average 2.88pc.

Moving forward, the first quarter of 2023 could see blending levels rise to 3.22pc as new projects run at full rates. Seven RD projects totalling 1.796bn USG/yr of production capacity will come on line over the next three months. Four of the projects will have on-site pre-treatment units (PTUs), with the largest plant aiming for pre-treatment to be available by early 2023.

Feedstocks

Heavy buying drives UCO glut, spot RBD purchases rise

We anticipate total US feedstock consumption to increase by nearly 13pc, or 243mn lbs, in October as a key US Gulf coast RD facility returns from a catalyst issue and other start-ups ramp up, taking total feedstock demand to 2.16bn lbs.

US biofuel demand outlook

Product	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	4Q22	1Q23	2Q23	3Q23	4Q23
Biofuel											*mn USG*
Ethanol	1,164	1,236	1,149	1,187	1,126	1,142	3,455	3,218	3,448	3,548	3,424
Biodiesel	148	170	154	166	151	185	502	410	453	462	485
Renewable diesel	117	117	115	138	142	163	443	491	557	507	556
Total	**1,429**	**1,523**	**1,418**	**1,490**	**1,420**	**1,490**	**4,400**	**4,120**	**4,457**	**4,516**	**4,466**
Biodiesel and renewable diesel feedstocks											*mn lbs*
Soybean oil	956	917	922	976	1,067	1,272	3,315	3,094	2,905	3,328	3,666
Yellow grease	449	317	236	324	272	307	904	872	1,251	908	1,002
Tallow	417	358	339	386	332	418	1,136	1,382	1,569	1,316	1,243
Corn oil	261	236	228	281	203	267	751	660	857	695	866
Canola oil	132	123	93	98	137	138	373	181	327	356	356
Other	72	84	93	91	74	71	236	209	255	274	259
Total	**2,287**	**2,035**	**1,913**	**2,156**	**2,085**	**2,474**	**6,714**	**6,399**	**7,165**	**6,878**	**7,392**

September was largely about lining up railcars to deliver product for October. Large volumes of UCO have already hit the US Gulf coast, weighing on prices in the early sessions of this month. UCO demand is poised to make the greatest gain this month, surging by 37pc from September to 324mn lbs.

Demand for distillers corn oil (DCO) is forecast to achieve the second-largest gain this month, rising by 23pc from September to 281mn lbs. UCO and DCO were highly sought after last month as companies focused on resolving rail logistics issues ahead of slowdowns and a looming national strike.

Tallow demand proved robust in September, although high prices discouraged trade as a record hot summer deteriorated tallow quality. The arrival of cooler weather has finally brought more on-specification material to the marketplace, as well as lower prices. We see tallow consumption rising by 14pc from September to 386mn lbs this month. Palm oil prices continue to weaken, encouraging some in the oleochemical sector to switch away from tallow given hefty cost savings.

SBO consumption will rise by 6pc to 976mn lbs in October, representing 45pc of the total US feedstock slate. With the shift to the lower-priced December CBOT basis, more than 4¢/lb of backwardation has unwound from the oilseed market, while the December contract shed an additional 3.71¢/lb during September. This has had producers turning to spot purchases of refined, bleached and deoderised (RBD) SBO and RBD canola oil, which are typically priced out of the market. RBD product is valued as it is easy on catalysts and other production units.

RD project start-ups struggled earlier this year, resulting in choppy feedstock demand, but the largest projects coming on line in the fourth quarter suggest that units may be running at full capacity much sooner. Feedstock specifications are likely to become a strong market driver moving forward given that three of the new facilities will not have PTUs.

Looking forward, DCO supply should tighten as ethanol production fell to its lowest in over two years on weak margins and a lack of export demand. It should be noted that ethanol producers have made progress in boosting corn oil yields this year, although any excess material will find its way into the animal feed sector. Ethanol producers will be eyeing lower demand from run cuts at their plants to take some heat out of corn markets as well as the progress of the US economy when making decisions on raising production.

With a more optimistic outlook for fourth-quarter start-ups and the threat of a national rail strike averted for the time being, we have raised our fourth-quarter feedstock demand forecast to 2.24bn lbs/month from 2.12bn lbs/month in September. We see December demand peaking at 2.47bn lbs, up from last month's forecast of 2.26bn lbs and 7pc higher than in December 2021.

Credits

RINs/RVO

2022 D4 RIN supply tightens, market shifts to 2023 D4s

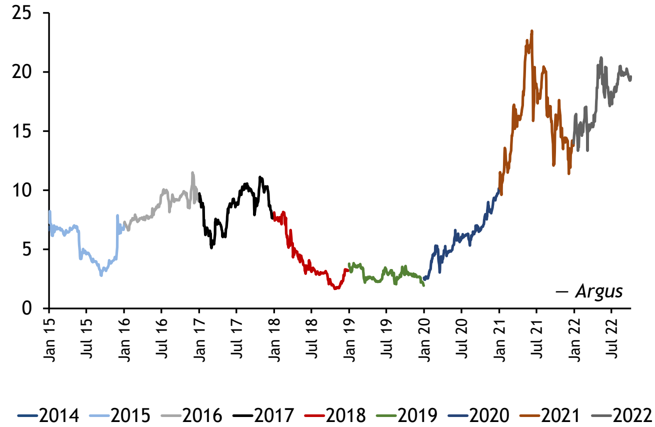
RIN markets were overall little changed on a month-on-month basis, while a weak biodiesel margin environment in mid-September briefly underpinned current year D4 credits. While we anticipated a relative oversupply of D4 credits to weigh on pricing — prices fell by a modest 1.3¢/RIN during September — losses were tempered by disruption at a key RD facility and bullish June D4 RIN generation data.

With the bulk of 2022 biodiesel sales concluded, RIN markets are now rapidly shifting to the 2023 vintage D4 credit to conduct business. The 2023 D4 RIN correlated at -77pc with the HOBO spread compared with a -46pc correlation for the 2022 D4 RIN. While obligated parties are scrambling to acquire 2023 D4 RINs using any spread possible, prices have proved relatively stable in the second half of September and the first week of October at just over $1.62/RIN. The 2022-2023 D4 spread widened to +16¢/RIN in early October after spending September at an average of +12¢/RIN, as we noted a relative tightening in 2022 D4 supply last month.

US RIN price outlook — *$/RIN*

Category	Aug 22	Sep 22	Oct 22	Nov-Dec 22	1Q23	2Q23	3Q23
D4	1.68	1.74	1.75	1.71	1.68	1.69	1.69
	▲	▲	▲	▼	▼	▲	⬍
D6	1.55	1.61	1.60	1.58	1.54	1.55	1.55
	▲	▲	▼	▼	▼	▲	⬍

Argus RVO *¢/USG*



Our D4 RIN forecast for October edges up by 1¢/RIN to $1.75/RIN, from an upwardly revised September figure. With 2022 vintage D4s more in line with immediate supply and demand, we caution to the upside, while the 2023 vintage D4s will align more closely with daily swings in the HOBO spread.

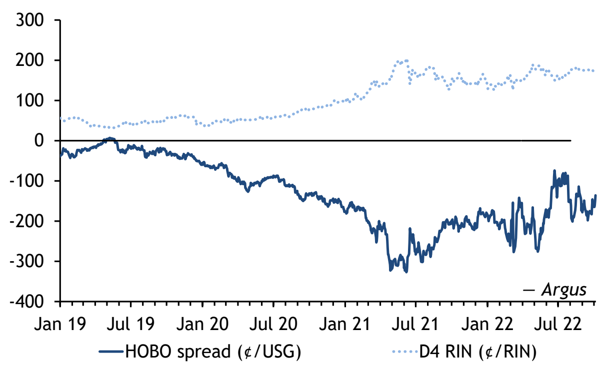
Our November-December D4 forecast slips to $1.71/RIN as peak biodiesel blending and the ramp up of new RD projects should bring fresh 2022 vintage D4 credits to the market.

D6 RINs to continue tracking D4

We have trimmed our D6 forecast for October by 1¢/RIN to $1.60/RIN, as we continue to expect D4 RINs — and their response to Nymex ULSD pricing — to dictate the wider marketplace. Current generation levels show producers are on pace to generate as many as 16.8bn D6 RINs this year. Generation for the first half of 2022 is running 3.75pc higher than year-earlier levels. We see 2022 D6 RIN values tapering off to $1.58/RIN for November-December, with the first-quarter 2023 value at $1.54/RIN.

As mentioned in the regulation section, we expect the EPA to announce at least two years — possibly three years — of blending mandates by mid-November, or close to it, as the agency will be under pressure to dovetail the Renewable Fuel Standard with the timeline set by the Inflation Reduction Act. It is also highly anticipated that the EPA will introduce regulations governing renewable electricity used in transportation.

HOBO spread vs D4 RIN



We continue to expect participants to carry some supply into next year, as the 14-month extension to cover an estimated 1.65bn RIN shortfall created by the blanket denial of small refinery exemptions (SREs) by President Joe Biden's administration plays out. The 14-month extension means that refineries have until February 2024 to use any RIN with a 2021 vintage or later to meet compliance. This will serve as an underlying source of additional RIN demand, particularly throughout next year.

LCFS

Prices fall to six-year lows on systemic oversupply

California Low Carbon Fuel Standard (LCFS) credits dropped sharply in late September, briefly touching six-year lows of under $60/t, before recovering modestly. Prompt credit prices declined by $22.50/t, or 26.5pc, during September owing to a systemically oversupplied programme that has yet to find a solution to the issue of falling credit values. Prompt LCFS credits traded as low as $62/t during the first week of October.

The latest scoping process will lay out the parameters for the future of the LCFS program and is expected to include much tighter carbon intensity scores across an expanded arena. Yet given the lengthy process, which will send critical investment signals to a variety of industries looking to do business with the largest state economy in the US, the new regulations cannot be enforced until 2024 at the earliest. Under the scheme's current configuration, only gasoline consumption generates deficits. Yet a mass exodus of Californians avoiding stifling taxes and rising costs of living over the past two years has taken some of the state's gasoline demand with it. Significant state subsidies for EVs and charging infrastructure with only grow with the added benefits afforded by the Inflation Reduction Act.

California LCFS forward prices *$/t*

Month	3Q22	4Q22	1Q23	2Q23
Jul	92.65	92.65	92.63	91.30
Aug	88.15	88.24	88.30	88.00
Sep	77.31	77.36	77.86	78.33

Prices

Ethanol

Prices firm as supply tightens on run cuts, maintenance

US ethanol prices ended September on a lower note, as a lack of demand from the industry weighed on corn prices late in the month, while a relative calm in rail labour negotiations eased logistical premiums. But the lowest ethanol production in more than two years and a hefty draw on stocks, despite anemic export demand, provided support in early October.

We expect prompt Argo ethanol prices to average $2.50/USG in October, up by 9¢/USG from a month earlier as ethanol producers will continue to reduce runs in the face of weakening demand and thin margins. As US ethanol inventories tighten prices will rise accordingly, a trend we see carrying into November, as producers wait for cheaper corn prices before resuming production. We have lifted our November Argo price outlook to $2.58/USG, while a seasonal decline in ethanol blending during the first quarter will see prices average $2.47/USG.

Tightening ethanol supply alongside rising corn prices pushed spot ethanol to trade at premiums to spot gasoline during much of September, particularly in the key New York Harbor and US Gulf coast markets, where premiums increased to as high as 20¢/USG and 28¢/USG, respectively. Yet rising gasoline prices driven by rebounding demand in the first week of October resulted in ethanol returning to a discount to the petroleum product. The lack of demand from key importers such as Brazil, Canada, South Korea and the Philippines has unsettled an industry that relies heavily on a robust export market to balance surplus supply and shore up margins.

Biodiesel

Prices boosted by demand, tight middle distillates

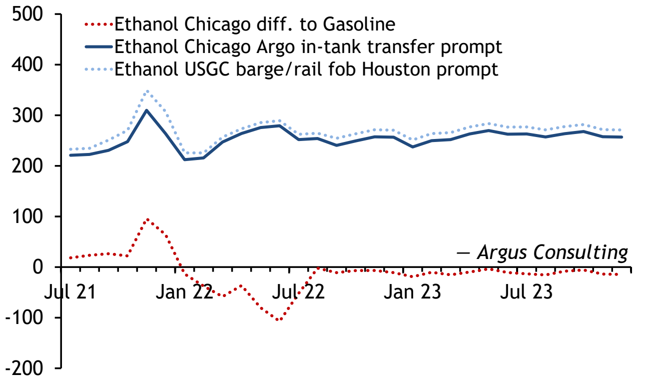
US biodiesel prices are expected to rise as middle distillate demand increases seasonally for agricultural and heating purposes. At this point, the industry is nearly entirely isolated from daily margin moves as the 2022 trading year has been booked out. Moving forward, we see the underlying Nymex basis providing strength in the complex as historic tightness in the US middle distillate market — particularly in the key northeast heating region — coupled with mounting geopolitical tensions are likely to prove recession-proof market drivers.

We expect Chicago B99 prices to average $3.53/USG in October, up by 17¢/USG, or 5pc, from September, as biodiesel demand is anticipated to grow by nearly 8pc over this period. The gains will come even as interest rate hikes and quantitative tightening are expected to weigh on the underlying basis. Our fourth-quarter average has been hiked to $3.59/USG, up by 5.6pc from last month's forecast, as the global middle distillate shortage and geopolitical tensions underpin the Nymex ULSD futures contract, while peak physical end-of-year blending demand will prove bullish.

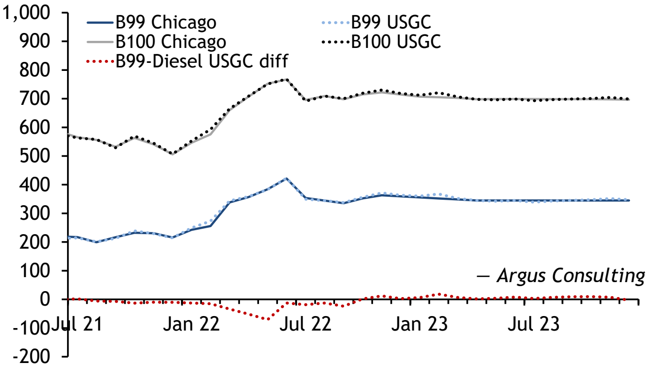
The HOBO spread began to strengthen again in early October, backed by persistent diesel strength that could drive discretionary blending through to the end of this year, particularly given the relative tightness of 2022 vintage D4 credits. As mentioned, the US biodiesel industry has locked in margins on tallow since June and has concluded SBO purchases for this quarter and into next year, allowing for steeper discounts to promote sales during the fourth quarter.

We have raised our Chicago B100 outlook by 16¢/USG, or 2.4pc, to $7.15/USG for October, as relative stability in the D4 RIN will limit gains for full-credit biodiesel.

US ethanol prices ¢/USG



US biodiesel prices ¢/USG



Renewable diesel

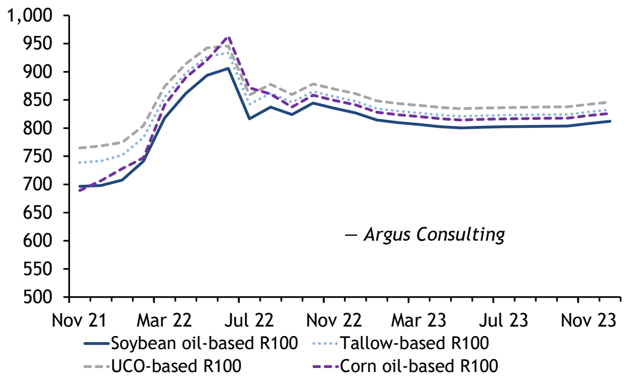
Prices rebound on high October demand

RD prices are forecast to rebound by 20¢/USG on average across feedstock categories, or 2pc, from September levels, as October RD supply produced from feedstock purchased at higher late-August and first half of September prices is poised to enter a much stronger demand environment. We see this upward price trend continuing through the fourth quarter as diesel demand and pricing firm.

October finds the RD industry well supplied with feedstock following careful purchase and logistic planning throughout September. The key US Gulf coast production hub will find a glut of UCO and, to a lesser extent, DCO as a key RD producer returns from a catalyst issue, while new production units will come on line this quarter after stockpiling feedstock.

RD margins were mixed during September, with LCFS-dependent UCO and DCO falling by 31.41¢/USG and 26.50¢/USG, respectively. But the downward correction in the CBOT SBO market allowed SBO RD margins to rebound by 16.5¢/USG, or 8.5pc, from a month earlier, with a 6.36¢/USG gain in bleached fancy tallow (BFT) margins. We expect the LCFS market to test new depths for months to come, which should drive volatility in UCO and DCO margins. As cautioned, DCO

US renewable diesel prices *¢/USG*



US biofuel price outlook											
Product	**Jul 22**	**Aug 22**	**Sep 22**	**Oct 22**	**Nov 22**	**Dec 22**	**4Q22**	**1Q23**	**2Q23**	**3Q23**	**4Q23**
Ethanol											*¢/USG*
Ethanol Chicago Argo in-tank transfer prompt	252	254	241	249	257	257	254	246	265	261	261
Ethanol USGC barge/rail fob Houston	262	264	255	263	271	271	268	260	279	275	275
Biodiesel											*¢/USG*
B99 SME Chicago in-tank transfer Argo	354	344	336	352	363	359	358	352	345	345	345
B99 SME fob Houston rail/barge	350	345	337	356	371	363	364	360	344	343	349
B100 SME Chicago in-tank transfer Argo	695	709	698	715	722	714	717	705	699	699	697
B100 SME fob Houston rail/barge	691	709	700	719	730	718	722	713	698	696	701
Renewable diesel											*¢/USG*
R100 (soybean oil-based) del California	817	837	824	844	835	827	836	810	802	803	808
R100 (tallow-based) del California	843	862	846	865	856	848	856	831	822	824	829
R100 (UCO-based) del California	859	878	860	879	869	861	870	844	836	837	842
R100 (corn oil-based) del California	872	860	838	858	849	841	850	824	816	817	822
Feedstocks											*¢/lb*
Soybean oil crude degummed US Gulf coast del rail	68	75	72	73	69	68	70	66	65	65	66
Tallow bleached fancy US Gulf coast del rail	77	80	77	75	72	71	73	69	68	68	69
UCO US Gulf coast del rail	70	73	75	76	73	72	73	69	68	68	69
Distillers corn oil US Gulf coast del rail	68	74	76	74	71	70	72	68	67	67	68

pricing could certainly firm this month and into November as ethanol production scales back further, eroding margins.

We continue to see UCO commanding the highest R100 prices, at $8.79/USG for October, despite a late-September sell-off in LCFS credits, which pushed them to their lowest in six years. DCO-based R100 in the US Gulf coast is forecast to average $8.58/USG, although we caution to the upside as the lowest ethanol production in two years is expected to boost feedstock pricing and curb availability.

SBO-based RD will be the most affordable product by far at $8.44/USG , while tallow-based RD prices are forecast to increase by 2pc to $8.65/USG, as the extreme summer heat left little on-specification tallow available to the market and kept prompt pricing high throughout the summer.

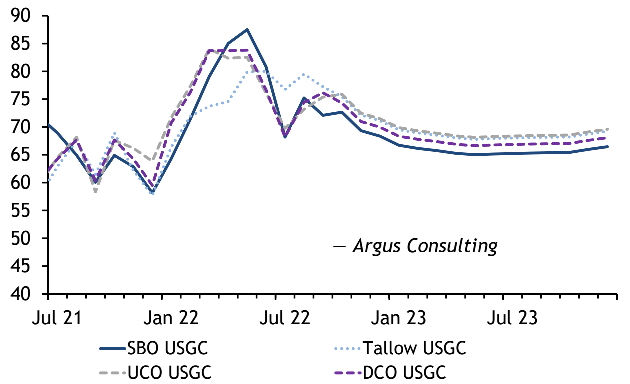
Feedstocks

Feed markets poised to stabilise on 4Q expansion

Feedstock prices peaked in mid-September on heavy purchasing for October, although prices were mixed on a month-on-month basis as SBO and BFT corrected downward, while UCO and DCO firmed owing to robust October demand.

Spot UCO prices at the US Gulf coast increased by 2.21¢/lb, or 3pc, in September from August, as strong demand for October production led to heavy buying in the first half of the month. Prices rose to as high as 77.25¢/lb in mid-September before retreating to around 70¢/lb in the first week of October, as the region now faces a glut of product. We forecast October UCO prices nudging up marginally to average 76¢/lb, despite regional oversupply in the Gulf coast, as fourth-quarter demand is expected to be sustained. UCO continues to command the highest margin in the RD environment, despite a 12pc drop during September as LCFS credits weakened.

US biofuel feedstock prices *¢/lb*



Spot DCO prices in the US Gulf coast firmed by 1.75¢/lb, or 2.4pc, in September from August, supported by stockpiling ahead of fourth-quarter start-ups and the completion of maintenance at a large regional facility. Prices lost 3¢/lb during the first week of October, yet we anticipate heavy run cuts in the ethanol industry to prove supportive to DCO into November. Rebounding SBO values in the first week of October saw DCO margins briefly overtake SBO, yet overall we remain bearish on US oilseeds for the remainder of this year.

US Gulf coast SBO prices fell below 69¢/lb last month, the lowest since late July. Weakness in the oilseed complex has even freed up producers to buy RBD SBO and canola oil.

Tallow pricing is poised to trend lower into the first quarter of 2023, as cooler weather will improve the quality of available supply, while economic headwinds are anticipated to curtail demand from the feed sector.

Fundamentals

Agricultural prices

SBO prices tumble

US SBO prices corrected downward as the shift to the lower-priced December contract resulted in significant backwardation working its way out of the market, while ample domestic supply further weighed on pricing. A lack of demand from the biodiesel sector and weak demand for exports should continue to weigh on prices in the coming months.

US soybean sales usually peak during the export window of October-January, with two-thirds of total exports shipped in this period. The US Department of Agriculture (USDA) estimates soybean exports to reach 56.74mn t in the 2022-23 marketing year, which started in September. Some 945,045t had already been exported as of 15 September.

Lower prices have tempted buyers to turn to the Argentinian soybean market. China has secured more than 4mn t of Argentinian products since Buenos Aires announced the introduction of a dollar exchange rate for soybean trade in early September. Those shipments are due to take place in September-November, with most vessels overlapping with the US' major export window, eroding the country's share of the global soybean market during this period.

Brazil also had another 4mn t of soybeans available for export during the same delivery period, competing with US soybeans, which in previous years used to be sold out during the same period. Brazilian soybean exports are estimated at nearly 74mn t for January to October.

High prices temper corn demand

The USDA's estimates for US corn production during the 2022-23 marketing year fell by 415mn bushels to 14bn bushels, as yield per harvested acre decreased by 2.9 bushels to 173 bushels. Projections for the total area harvested also decreased, by 1mn acres to 81mn acres. Hot weather in July and August created poor crop conditions throughout much of the corn belt.

Expectations of the amount of corn to be used for ethanol fell by 50mn bushels to 5.3bn bushels. Several ethanol producers expect margins to weaken as the year draws to a close, owing to a combination of higher feedstock costs and softening road fuel demand. Lower margins have already prompted some to bring forward seasonal maintenance.

Fossil fuel demand and prices

Crash in gasoline prices supports demand recovery

Oil product demand in the US was running at 20.04mn b/d in August, up by 130,000 b/d on the month, but still more than 500,000 b/d lower than a year earlier, reflecting challenging global economic conditions. Gasoline demand showed the strongest month-on-month rise, increasing by 180,000 b/d in August, as a result of seasonally high demand that month and falling prices.

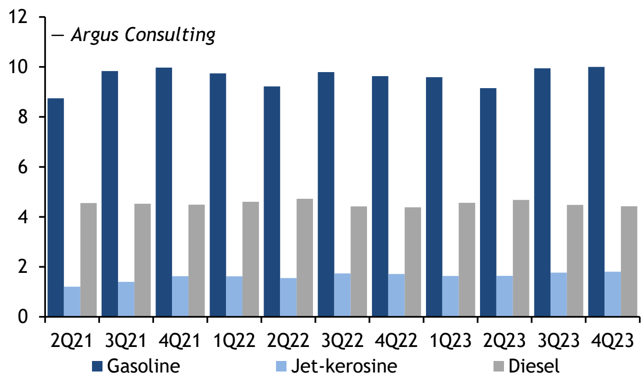
Outright gasoline prices in August were $107.70/bl, 35pc lower than this year's peak in June, with retail prices falling by 23pc over the same period. Prices are estimated to have fallen by a further 9pc in September to $99/bl, but should recover in the fourth quarter, with a 7.6pc rise in October compared with September to $106.50/bl. But prices could fall further as refineries ramp up utilisation rates to replenish diesel stocks, creating surplus gasoline supply.

Middle distillate prices supported despite low demand

US diesel prices are expected to recover from the sharp fall in August, driven by strong export demand and low inventories, as refinery output hit 5.1mn b/d for August, up by just under 1pc from July. Diesel prices in September are estimated to have been $132.30/bl, a 23pc decline from their peak in June, but prices are expected to recover in the fourth quarter, increasing by 9pc in October to $144.50/bl and finishing the year at $149.20/bl in December.

US diesel demand was 3.76mn b/d in August, according to EIA data, up by 55,000 b/d compared with July but 230,000 b/d lower than a year earlier, and down by 275,000 b/d from pre-pandemic August 2019. Demand in the US remained weak through the second and third quarters, with support for the market coming from high exports, which reached 1.5mn b/d in August. Overseas sales have increased by just over 16pc compared with the first quarter, when European buyers started to turn away from Russian product and began gas-to-oil switching, with US refineries lifting output to meet this demand.

North America fuel demand *mn b/d*



North America (USGC) fuel prices *$/bl*