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Issue 23-05
Thursday
11 May 2023

Argus Biofuels Outlook



Overview

European biodiesel and HVO markets continued to weaken in Europe, with biodiesel prices hitting their lowest levels in over two years. Not much has changed since March — road fuel demand remains sluggish, major feedstocks are oversupplied, and a high influx of Annex IX Part A biofuels has outcompeted domestic biodiesel, leading producers to consider stopping production in the short term. The turmoil has also lowered overall volume requirement, making mandates and compliance easier to meet relative to last year. Major ticket markets crashed, which unfavoured physical blending of HVO. Crop-based biofuel prices are still on a declining trend, but Ucome and UCO-based HVO prices stopped falling in recent weeks, showing some early signs of a recovery that was expected for the summer months but might still be short-lived in a very uncertain environment. As European prices have been unworkable for biofuel and feedstock suppliers in the Asia-Pacific and South America regions, traders are simply not engaging with the market, and spot activity has been thin for several products.

In the US, the Environmental Protection Agency issued a waiver allowing the sale of E15 to continue this summer and tax credits for biofuels are safe from discussions on the current debt bill. Soybean oil demand is expected to have reached record levels in March as prices for the feedstock fall to their lowest level in over two years.

In Brazil, anhydrous ethanol demand hit six-year highs in March, and the start of a promising sugarcane harvest has prompted discussions on increasing the country's ethanol mandate from 27pc to 30pc.

Key biofuel prices, prompt

	Mar 23	Apr 23	May 23e	June 23e
Europe				*$/t*
RED FAME 0°C CFPP fob ARA range	1,183	1,093	1,049	1,102
RED Rapeseed OME fob ARA range	1,240	1,117	1,081	1,142
RED UCOME fob ARA range	1,371	1,273	1,263	1,266
RED HVO fob ARA range (Class I)	2,118	1,897	1,766	1,785
RED HVO fob ARA range (Class II)	2,129	1,876	2,097	2,119
SAF fob ARA range (Class II)	3,170	2,907	2,924	2,865
Bionaphtha fob ARA	2,302	2,166	2,134	2,161
UCO cif ARA range	973	838	865	899
Ethanol Regular fob ARA range	1,216	1,207	1,130	1,193
US (biofuels)				*¢/USG*
Ethanol Chicago (Argo in-tank transfer)	224	242	225	233
Ethanol USGC fob Houston	238	256	239	247
B100 SME Chicago (Argo in-tank transfer)	569	553	575	593
R100 (UCO-based) del California	736	725	758	765
US (feedstocks)				*¢/lb*
Soybean oil crude degummed US Gulf coast del rail	60	57	62	63
UCO US Gulf coast del rail	55	56	60	61
Tallow bleached fancy US Gulf coast del rail	54	54	60	62
South America				*$/m³*
Anhydrous fob Santos	622	674	622	632
Asia-Pacific				*$/t*
RED HVO Class II Singapore fob	2,049	1,779	2,010	2,029
UCO fob China	929	824	826	865
Ucome RED fob China	1,168	1,099	1,065	1,070

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EUROPE

Summary

This month

European biodiesel prices declined further in April as record volumes imported from the Asia-Pacific region over the last six months removed any support from an already weakened environment. With markets now in a stalemate, all biodiesel grades hit two-year lows, and as compliance becomes cheaper to meet without physical blending, hydrotreated vegetable oil (HVO) prices posted double-digit losses on the month.

Next month

Early signs of industrial contraction are weighing on European fuel demand, and the stronger demand expectations ahead of the summer driving season are unlikely to reach expectations from the start of the year. Although prices for crop-based biodiesel grades are expected to continue to weaken further in May, used cooking oil methyl ester and used cooking oil-based HVO prices showed some recovery in early May, which might be short-lived given the overall bearish environment.

3-6 months ahead

Although road fuel demand should strengthen in summer, we do not expect prices to recover over the next few months, but mild month-on-month increases are still possible, particularly for waste-based and advanced feedstocks. Ethanol prices are expected to remain strong in the second and third quarters, as gasoline blended with 10pc ethanol is growing in popularity and availability.

6-12 months forward

As the most liquid hydrotreated product, HVO Class II prices should firm up by the end of the year, and typical pricing dynamics in the complex are expected to return. There are few signs of biodiesel stocks shifting, and Europe's strong rapeseed harvests will keep a tight cap on price rises this winter, despite rapeseed oil methyl ester (RME) dominance of the winter fuel specification. Sweden's recent decision to trim its greenhouse gas intensity reduction requirement in gasoline and diesel should lead to lower HVO demand in early 2024, and notably to lower demand for tallow as a biofuel feedstock.

Regulation

Sweden to trim GHG mandate and biofuels demand

Sweden's prime minister Ulf Kristersson has confirmed the country will go ahead with plans to significantly lower its greenhouse gas (GHG) reduction obligations for gasoline and diesel. From current levels of a 30.5pc GHG reduction for diesel and 7.8pc for gasoline, GHG mandates for both fuels will be set at just 6pc in 2024 and 2025, with still no information on 2026 onwards. By 2030, member states have agreed on a 14.5pc GHG intensity reduction target for transport fuels.

This significant relaxation in the GHG reduction targets will enable fuel suppliers to forego purchasing expensive biofuel blending components, and to favour higher volumes of fossil fuels. Sweden's previous plan was to mandate a 40pc GHG reduction for diesel in 2024, rising to 66pc by 2030, and a 12.5pc GHG reduction for gasoline, increasing to 28pc by 2030. But the country reconsidered these mandates, claiming it was not reasonable to have higher GHG reduction mandates than other EU countries because of their likely impact on retail prices.

ReFuelEU mandates agreed

The European Parliament and EU member states have reached a provisional agreement on sustainable aviation fuel (SAF) mandates from 2025. From 2025, at least 2pc of aviation fuels must be SAFs, increasing to 6pc in 2030, 20pc in 2035, 34pc in 2040, 42pc in 2045 and 70pc in 2050. SAFs include synthetic fuels and also non-food and non-feed biofuels, notably from agricultural or forestry residues, algae, bio-waste, used cooking oil (UCO) or certain animal fats. Recycled jet fuels produced from waste gases and waste plastic are also included.

The agreement also has a sub-mandate for synthetic fuels, which includes e-kerosene, hydrogen and similar renewable fuels of non-biological origin (RFNBOs). These should reach a total share of aviation fuels of 1.2pc in 2030, 2pc in 2032, 5pc in 2035 and 35pc in 2050.

The deal must now be formally approved by the parliament's plenary and then by EU ministers. The "ReFuelEU" regulation will be directly applicable in all member states and does not allow countries to set national mandates — preventing fragmentation of the EU single aviation market.

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UK details two-year plan to decarbonise aviation

The UK's Jet Zero Council has published a two-year plan detailing a timeline for development of SAF in the country. Under this plan, the UK should pass a SAF mandate by the end of 2024, to come into force by 2025, and will reach at least 10pc SAF use by 2030. The government is consulting until June on a SAF target trajectory from 2025, on a Power-to-Liquid Mandate and on a cap on hydro-processed esters and fatty acids, aiming to confirm details by March 2024.

Concerns on mislabelled advanced biofuels mount

In late March, *Argus* reported on European producers and traders of biodiesel saying some Chinese product entering the EU was being wrongly labelled as an advanced biofuel, and sold into Germany. Market participants have expressed concern after Chinese biodiesel exports more than doubled from a year earlier during January-February, with offers for advanced biodiesel produced from palm oil mill effluent (Pome), food waste and soap stock offered to Europe in volumes exceeding what could reasonably be produced.

Under this context, the German federal environment ministry has signalled it is aware and working to address the issue. The body has plans to submit a draft law to ban the use of biofuels from crop and feed, in a move that would increase reliance on biofuels produced from non-crop sources including advanced feedstocks. It is now expected that the draft would also address the problem of falsely certified import products.

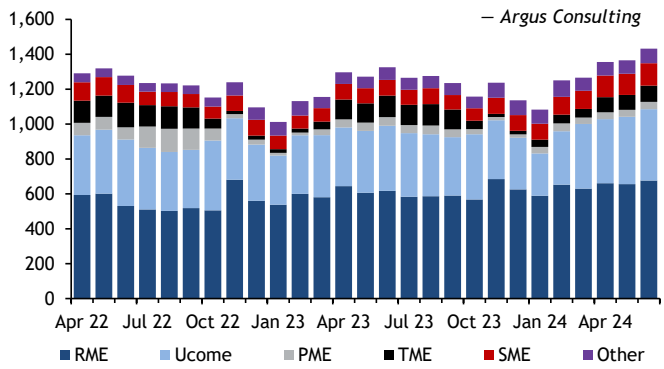
The proof of sustainability (PoS) accompanying such imports complies with the Biofuel Sustainability Regulation. If companies have submitted false information on sustainability and origin, the auditor would withdraw certification. But if a PoS is created from product originating from a certified company that later is found to have submitted false information — and subsequently has its certification removed — the existing PoS maintains its validity, meaning buyers further down the supply chain unaware of mislabelling would not face measures.

Demand

Concerns on advanced biodiesel imports weigh

Amid widespread market concerns on mislabelled advanced biodiesel imports, Europe remains oversupplied with biodiesel from Annex IX Part A feedstocks, which will be double counted, allowing mandates to be met with lower physical volumes. The so-called mislabelled imports continue to bear down on the wider complex, and we have revised down our total biodiesel demand estimate in 2023 to 14.5bn l.

European biodiesel demand ***mn litres***



Offset French demand boosts April numbers

Europe's macroeconomic backdrop is weakening diesel demand, which continues to weigh on demand for blending components. We estimate European biodiesel consumption in April rose to 1.30bn l in April, up 12pc on the previous month. This rise is mostly attributable to an offset in French demand, as refinery strikes in March led to shortages at fuel stations. With the strikes now resolved, we expect French demand to have risen by 41pc to 243mn l in April, as customers were once again able to fill up cars. This short-term boost is similar to demand patterns observed during the countrywide strikes in October and November last year.

We expect May biodiesel demand will be down by 1.9pc, as Europe is expected to consume 1.27bn l of biodiesel. A brief recovery is expected, and demand is forecast to peak for the year in June at 1.33bn l, up 4.2pc on the month. This brings our total demand estimate for the current quarter to 3.89bn l, up 18pc from the first quarter and just 0.2pc on the year.

TME expected demand triples on the month

Tallow methyl ester (TME) demand in April rose approximately 150pc on the month to 114mn l as its physical properties favour its blending during the summer months. Growth in TME demand was supported by higher consumption in the UK, four times higher on the previous month, to 28mn l. The UK saw the highest growth as there is no cap on waste-based feedstocks, unlike countries in the EU. Outright volumes of TME remain limited by stringent shipping rules on animal fats, resulting in illiquid markets for the product.

HVO

Strong HVO consumption growth this quarter

Hydrotreated vegetable oil (HVO) consumption in April is expected to have risen 5.3pc on the month to 478mn l, and is expected to further rise 7.1pc in May and 2.6pc in June. This

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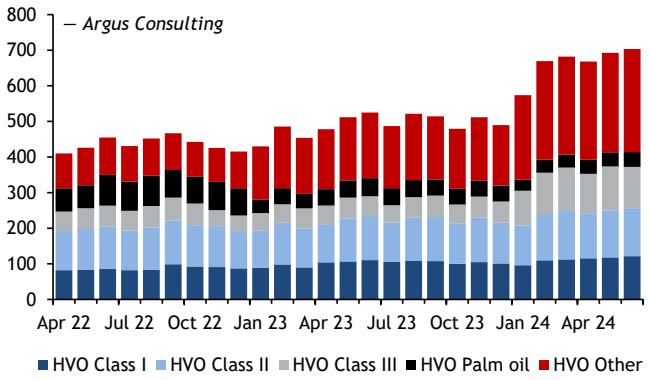
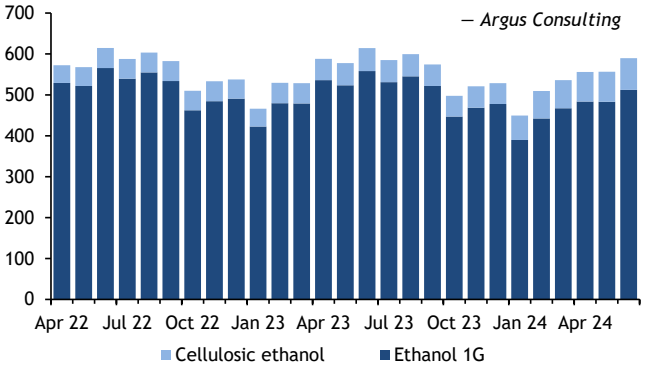
European HVO demand *mn litres*



European ethanol demand *mn litres*



brings our quarterly demand to 1.52bn l, an 11pc rise from the previous, owing to rising diesel demand ahead of the summer. Demand is expected to stay flat in the next quarter, and to fall an estimated 2.2pc in the final quarter of the year.

We estimate HVO Class II consumption at 107mn l in April, a 22pc share of the total monthly demand. This is 2.0 percentage points down on the month, as imports of advanced product covered under HVO Other have grown in recent months, and benefitted from uncapped double counting. In April, feedstocks counted under HVO Other rose 6.9pc to 168mn l, accounting for 35pc of total HVO demand.

Demand for HVO Class I is expected to have risen 16pc to 104mn l in April, owing to demand recovery in France, with an estimated 35mn l consumed there. Conversely, HVO Class III consumption is expected to have fallen 7.9pc to 52mn l, as markets remain highly illiquid for this grade.

Ethanol

Ethanol demand strong, French strike losses rebound

Ethanol demand was unchanged in March at 529mn l, as gains from rising gasoline demand were offset by losses in France owing to strikes. But European gasoline demand is

European demand outlook *mn litres*

Product	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	2Q23	3Q23	4Q23	1Q24	2Q24
Biodiesel											
PME	15	15	33	46	47	49	142	142	68	118	120
RME	538	600	581	644	606	617	1,868	1,760	1,878	1,872	1,993
SME	78	74	77	90	87	90	266	260	254	298	373
TME	21	23	45	114	111	123	348	353	87	142	266
UCOME	282	336	356	337	355	373	1,065	1,054	1,007	920	1,163
Other	78	83	64	67	66	72	205	207	238	250	239
Total	**1,012**	**1,132**	**1,155**	**1,297**	**1,272**	**1,326**	**3,894**	**3,776**	**3,531**	**3,599**	**4,154**
HVO											
HVO Class I	89	98	90	104	107	110	321	322	306	318	355
HVO Class II	104	117	109	107	121	124	351	355	353	378	394
HVO Class III	50	52	57	52	59	56	167	167	171	335	350
HVO Palm oil	38	46	40	46	48	51	145	141	134	104	121
Other	149	173	157	168	177	184	530	538	516	789	844
Total	**430**	**486**	**454**	**478**	**512**	**525**	**1,515**	**1,522**	**1,481**	**1,925**	**2,064**
Ethanol											
Ethanol 1G	423	480	479	536	523	558	1,618	1,598	1,393	1,299	1,479
Cellulosic ethanol	44	50	49	52	54	56	162	161	154	196	223
Total	**466**	**529**	**529**	**588**	**578**	**614**	**1,780**	**1,759**	**1,547**	**1,495**	**1,702**
Grand Total	**1,958**	**2,198**	**2,185**	**2,421**	**2,421**	**2,525**	**7,367**	**7,230**	**6,724**	**7,164**	**8,085**

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strong ahead of the summer and the French refinery strikes have been resolved, providing a boost to ethanol consumption in April, which we estimate was up 11pc on the month to 588mn l.

Demand is anticipated to fall 1.8pc to 578mn l in May, attributable to a short-lived 11pc fall in German consumption. A swift rebound is forecast, as we expect ethanol consumption will peak in June at 614mn l, up 6.3pc on the month but flat on the year, trending with higher gasoline demand at the start of summer.

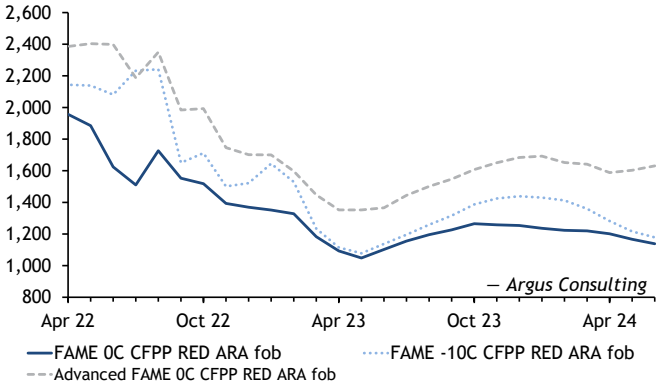
Feedstocks

Crop-based feedstocks regain lead over advanced

The recovery of French demand and production of biofuels following strike action increased the call on rapeseed oil to 634,000t, a 12pc rise on the previous month. But this was just a 1 percentage point increase in the share of rapeseed oil in the European feedstock mix, which accounted for 39pc of total biodiesel and HVO feedstocks. Demand for tallow rose by 60pc to 151,000t over the same period, with its share growing from 6pc to 9pc as warmer weather favours the use of TME.

Growth in rapeseed oil demand brought demand for crop-based feedstocks to 50.7pc for the first time since January, following a 47.3pc annual average in 2022. But with higher mandates to meet, the benefits of blending advanced over crop-based products is leading to higher demand, and we currently estimate advanced and waste-based feedstocks will cover 50.6pc of total biodiesel and HVO demand in Europe in the current year. This share is forecast to peak at 52.5pc in August, as many feedstocks are less suitable for blending in the winter months, during which rapeseed oil will remain the most popular feedstock.

European FAME prices *$/t*



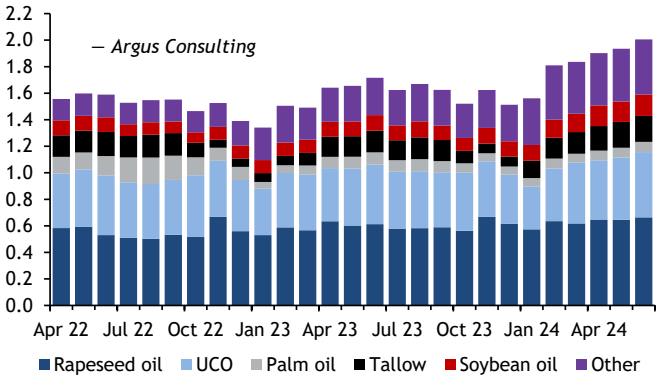
Prices

Biodiesel

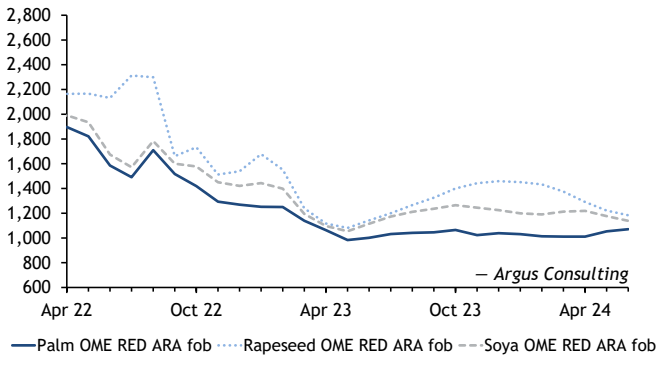
Prices fall again amid weak fundamentals

The macroeconomic backdrop in Europe is pointing to contractions in industrial output, which has done little to alleviate concerns on swollen diesel stocks in the region. Strike action in France resulted in the refining sector running at 50pc capacity through late March and early April, but unexpectedly the increased draw on stocks did little to support diesel prices, which fell to levels last seen in January 2022. This piled onto the already weak biodiesel markets, and prices for all major grades fell for a third consecutive month. Fame 0 prices averaged 28-month lows in April, with prices for rapeseed oil methyl ester dropping by 9.9pc on the month to $1,117/t. Based on thin market activity, soybean methyl ester (SME) and palm methyl ester (PME) prices also fell by 7-8pc on the month, to $1,097/t and $1,063/t, respectively, as these are unlikely to be sold at a premium to rapeseed oil methyl ester.

Biodiesel and HVO feedstock demand *mn t*



European crop-based biodiesel prices *$/t*



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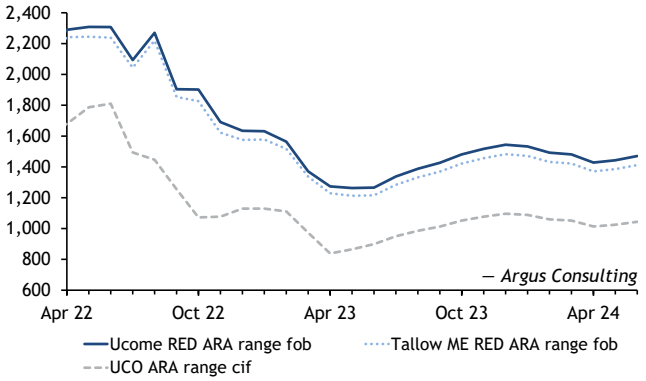
European waste-based biodiesel prices *$/t*



Ucome and TME also hit 29-month lows in April, also falling 7-8pc on the month to $1,273/t and $1,229/t, respectively. There have been increased reports of biodiesel producers stopping production as margins (excluding variable costs) have reportedly dropped to $15/t, and some participants suggesting a price floor for finished products will soon be reached. In fact, Ucome prices have been on a positive trend over the past two weeks, with some oscillation, while RME and Fame 0 continue to move down.

Advanced Fame 0 prices remain at a fairly stable premium to Ucome, and fell by 6.5pc on the month to $1,352/t.

Prices to weaken on potential mislabelling

The high influx of advanced-labelled biodiesel in Europe has weakened compliance ticket markets and demand for physical volumes of biodiesel. Monthly averages are expected to show losses over April for most crop-based grades, while Ucome, TME and Advanced Fame 0 prices are forecast to remain flat. Lacklustre offers have limited trade with South America and Asia-Pacific in recent months, pointing to a potential shortfall of biodiesel and/or feedstocks once current stocks deplete, as very few traders have been booking cargoes for delivery.

Prices are unlikely to return to February values, but we tentatively expect higher road fuel demand in the summer will lend some support. We forecast RME prices will post gains throughout the third and fourth quarters, averaging around $1,260/t and $1,440/t, respectively. Other grades should equally see month-on-month rises from June to September, with Fame 0 and Ucome rising to $1,226/t and $1,430/t, respectively, by the end of the third quarter. But the ample rapeseed oil availability should continue to put downward pressure on prices, and particularly on crop-based grades.

HVO

HVO grades post double-digit losses

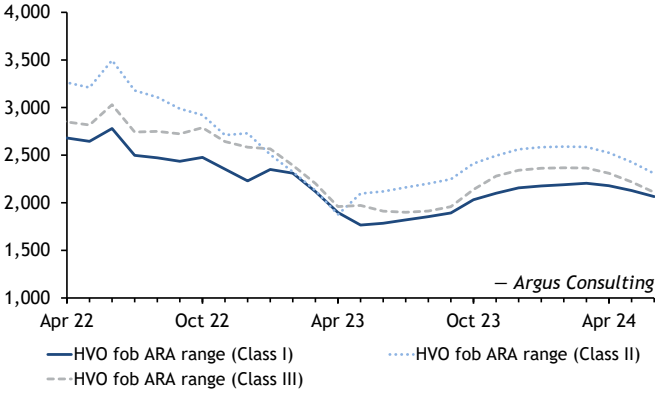
Unable to escape turmoil in the wider biodiesel complex, prices for all three classes of HVO posted double-digit losses in April. HVO Class I fell 10pc to $1,897/t, Class II sustained the largest loss, falling 12pc to $1,876/t and Class III fell 11pc to $1,960/t. In an unusual turn, this marks the first month in which average HVO Class II prices were at a discount to HVO Class I and Class III, but early price movements in May show this will be a short-lived trend, as Class II appears to have regained a healthy premium over Class I.

Compliance tickets in the German, Dutch and UK markets remain well below the buyout price, meaning compliance has been easy to meet, pressuring down ticket prices. Some support was received from Ireland, which introduced a 1.5x multiplier for tickets supplied from Annex IX HVO on 1 April, but production margins remain poor.

Price recovery limited by ticket compliance costs

HVO Class II prices should regain support, and we expect this will result in the average May price rising 12pc on the month to $2,097/t. We anticipate a slight bullish trend for the remainder of the year, averaging 1.7pc monthly gains through to September, reaching $2,248/t. On the expectation of regulation targeting recent advanced product imports, we expect the final quarter will finish much stronger, averaging around $2,490/t. We expect HVO Class I will continue to weaken in May, falling around 7pc to $1,766/t, but tracking slight gains in Class II, will similarly strengthen month on month from June to September, reaching close to $1,900/t at the end of the third quarter. HVO Class III remains a highly illiquid market and we expect will closely track Class II, averaging close to $1,950/t in the current quarter and close to $1,930/t in the third.

European HVO prices *$/t*



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SAF

SAF premiums fall

Average SAF prices fell 8.3pc on the month, down to $2,907/t in April, tracking losses in the underlying gasoil contracts. Average monthly price movements for SAF reflect changes in jet fuel, but premiums over fossil fuel jet also fell in April. Throughout the winter months, SAF premiums over jet remained in the $2,300-2,400/t range, with very little month-on-month variation. But the average premium dropped to $2,130/t in April, a 10pc decline over March.

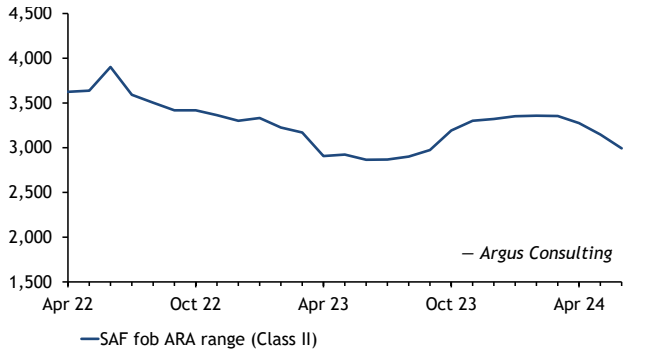
We expect SAF prices to remain flat in May and fall in June, owing to the poor macroeconomics, averaging approximately $2,900/t in the second and third quarters, before strengthening in the final quarter, averaging close to $3,270/t.

Bionaphtha

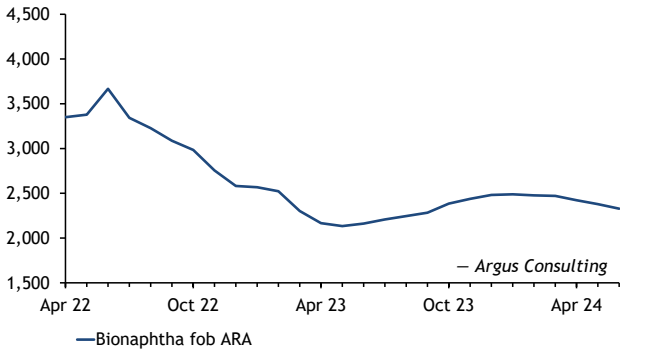
Bionaphtha prices weaken further

Bionaphtha prices took another hit in April and declined for the ninth consecutive month, amid weak demand from the petrochemicals industry that had been key to supporting

European SAF prices *$/t*



European bionaphtha prices *$/t*



European price outlook *$/t*

Product	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	2Q23	3Q23	4Q23	1Q24	2Q24
Crop-based biodiesel											
FAME 0 fob ARA	1,351	1,328	1,183	1,093	1,049	1,102	1,081	1,192	1,259	1,226	1,169
FAME -10 fob ARA	1,645	1,530	1,234	1,115	1,078	1,138	1,110	1,257	1,417	1,400	1,226
Advanced FAME 0 fob ARA	1,700	1,598	1,447	1,352	1,352	1,366	1,357	1,497	1,647	1,662	1,607
PME fob ARA	1,252	1,250	1,139	1,063	983	1,002	1,016	1,040	1,042	1,018	1,045
RME fob ARA	1,678	1,552	1,240	1,117	1,081	1,142	1,113	1,264	1,434	1,420	1,232
SME fob ARA	1,444	1,399	1,194	1,097	1,054	1,115	1,089	1,207	1,245	1,201	1,178
Waste-based biodiesel											
UCOME fob ARA	1,632	1,564	1,371	1,273	1,263	1,266	1,267	1,384	1,514	1,502	1,447
TME fob ARA	1,578	1,517	1,337	1,229	1,212	1,215	1,219	1,329	1,453	1,442	1,389
UCO cif ARA	1,129	1,111	973	838	865	899	867	983	1,075	1,066	1,027
HVO											
HVO Class I fob ARA	2,349	2,310	2,118	1,897	1,766	1,785	1,816	1,856	2,097	2,190	2,124
HVO Class II fob ARA	2,507	2,326	2,129	1,876	2,097	2,119	2,031	2,203	2,489	2,586	2,420
HVO Class III fob ARA	2,566	2,394	2,203	1,960	1,971	1,912	1,948	1,924	2,254	2,365	2,213
SAF											
SAF fob ARA	3,332	3,225	3,170	2,907	2,924	2,865	2,899	2,914	3,272	3,355	3,138
Bionaphtha											
Bionaphtha fob ARA	2,568	2,524	2,302	2,166	2,134	2,161	2,154	2,246	2,435	2,479	2,376
Ethanol											
Ethanol Regular fob ARA	1,030	1,130	1,216	1,207	1,130	1,193	1,177	1,308	1,274	1,236	1,267
Ethanol Premium fob ARA	1,086	1,201	1,281	1,260	1,183	1,246	1,230	1,361	1,327	1,289	1,320
ETBE fob Rotterdam	1,200	1,121	1,076	1,228	1,218	1,253	1,233	1,184	1,067	1,025	1,089

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prices during most of 2022. Then, large petrochemical companies arranged term deals and indicated that they would also need spot volumes to meet demand. Many have made bio-based chemicals a central part of their environmental and carbon-saving strategies, but now bio-labelled product is met with increased resistance, as consumers struggle with rising costs across the manufacturing sector.

Demand for the product from the road fuel industry has struggled to pick up, and although countries such as Sweden and Portugal publish consumption numbers, these are often orders of magnitude lower than HVO. Bionaphtha prices in April fell 5.9pc on the month, to $2,166/t. We assume some pricing support would start coming from the wider hydrotreated product complex over the next few weeks and into the third quarter, and we expect prices could finally strengthen after nearly a year of month-on-month declines.

Ethanol and ETBE

Ethanol weakens but ETBE posts a surprise rally

Average April prices for regular and premium-grade ethanol fell 0.7pc and 1.6pc on the month, respectively, down to $1,207/t and $1,260/t. Prices generally fell with market oversupply of both finished product and feedstocks, as high imports of ethanol from the US competed with domestic production, and recent imports of grains from Ukraine into neighbouring EU countries has weighed immensely on agricultural prices in the region.

We expect ethanol prices will weaken further in May, but to rally in June and remain strong over the summer, averaging around $1,260/t and $1,320/t for regular and premium grades, respectively.

ETBE prices, on the other hand, have already seen a rally, up 14pc on the month to $1,228/t, as more countries introduced E10 as their default blended fuel at the pump. Customers quickly turned to E10 over more expensive ETBE following the introduction of this component in France and Germany, so we do not expect any further rises this year, with prices averaging around $1,180/t and $1,067/t in the third and fourth quarters, respectively.

Fundamentals

Rapeseed prices still tumbling

Prices for rapeseed averaged the month at $496/t, a 4pc decrease from March. Rapeseed prices fell for the fourth consecutive month and markedly spotted the lowest monthly average price for rapeseed since November 2020.

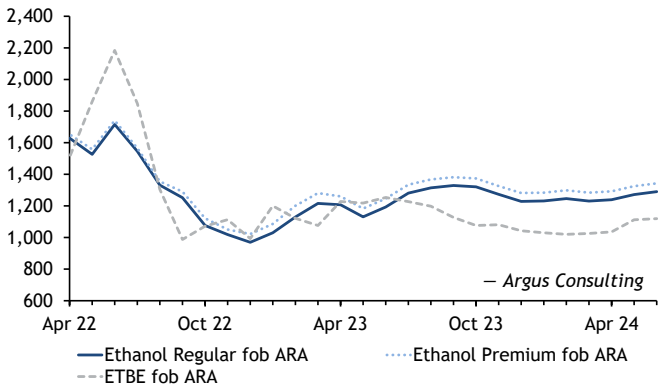
The European market is back below €440/t ($480/t) on the August 2023 futures and financial operators continue to show an impressive net short position on all agricultural products, as markets remain under pressure amid huge import flows. Since the beginning of the marketing year, more than 6.5mn t of rapeseed have been shipped into the EU, and large Australian suppliers are expected to keep a high pace.

Market players have remained attentive to the ongoing negotiations on the renewal of the Ukraine export corridor and the limitation of imports in the EU border countries, but concerns of the corridors renewal have not supported prices, and sentiment remains bearish.

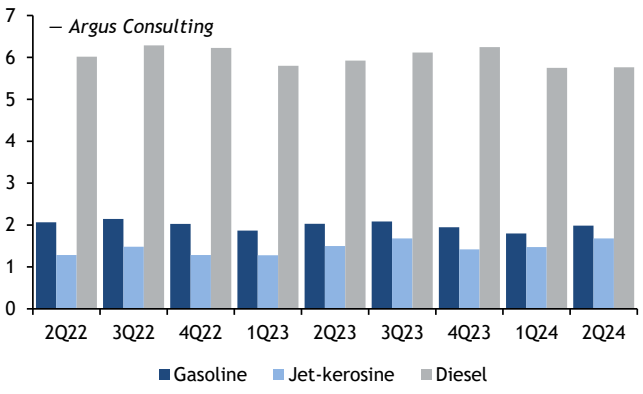
Corridor negotiations to shape corn outlook

European corn is extending its losses and trading close to November 2021 levels at €234/t. Since the beginning of the

European ethanol and ETBE prices *$/t*



European fuel demand *mn b/d*



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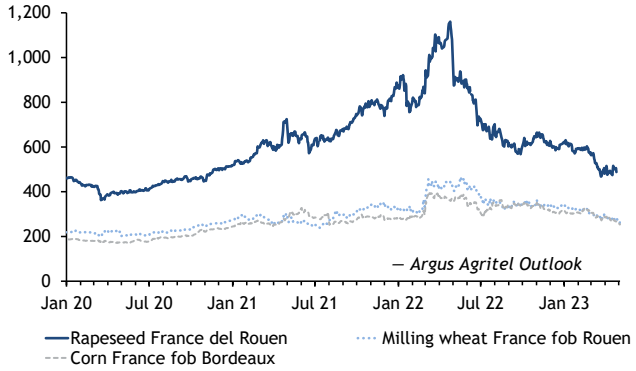
Biofuel agricultural feedstock prices *$/t*



year, prices have dropped by almost €60/t. The market has been facing pressure from large volumes coming in from Ukraine, which saw corn making up 50pc of all 29mn t of grain transited through the corridor.

Uncertainty remains regarding the renewal of the corridor agreement, however, as Russia suggests conditions are not in place. Questions over the limits Ukrainian operators will face in the coming months in exporting their volumes by land to the EU's border will shape corn prices in upcoming months.

Abundant stocks put pressure on wheat prices

Wheat prices in Europe fell for the second consecutive month, averaging $280/t in April, $11/t lower than in March. A gloomy outlook remains on the European wheat market, with Rouen prices the lowest level since August 2021.

Apart from climatic and geopolitical risks, global demand is currently subdued, preventing the disposal of ample stocks in central European countries. Pressure to sell before the end of the marketing year is also being witnessed in Russia, with the unofficial floor price of $275/t reportedly being ignored by a growing number of sellers.

Further downward movement may be dependent on the success of ongoing negotiations on the renewable of the corridor in Ukraine before 18 May. Weekly shipments of Ukraine grain exports have reached their lowest since the start of the campaign.

Fossil fuel demand and prices

End of French strikes sees gasoline's return

The gasoline crack averaged $18.93/bl in April in north-west Europe, up by $2.24/bl on March. Despite increasing month on month, cracks fell in the second half of April, with gasoline averaging a $15.99/bl premium to North Sea Dated in the final week. The decline reflects lower demand and abundant supply.

In France, typically a net exporter of gasoline, strike action had largely ended by early April, allowing refinery output to climb back towards February levels. Gasoline was also kept in the region as the arbitrage to the US Gulf coast was closed, despite freight rates falling.

Naphtha cracks weakened across all major refining hubs in April. In northwest Europe, the crack fell by $6.28/bl to a $9.13/bl discount to North Sea Dated. Slacker gasoline consumption has limited blending demand for naphtha.

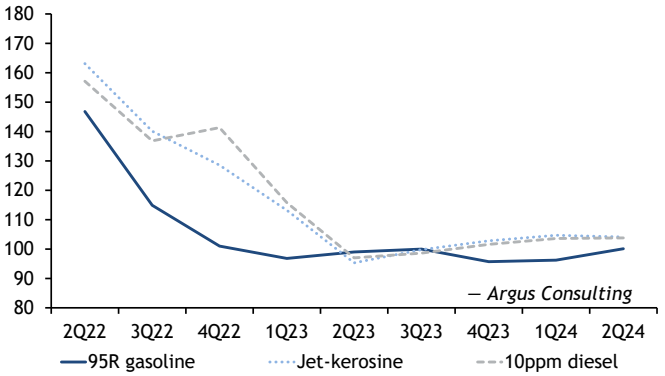
European diesel imports remain below average

Middle distillate crack spreads weakened in April to the lowest level since the Ukraine conflict began, driven by sluggish demand and ample supply. Northwest Europe diesel crack spreads dropped by 41pc to $18/bl, as supplies from east of Suez arrived in the region.

European consumption did not notably recover after the industrial action in France drew to a close. The latest EurOil stock data suggests that the monthly stock draw of middle distillates in the EU15 plus Norway slowed in March — to just 2mn bl, compared with more than 30mn bl in February — while the region's diesel imports remained at only 750,000 b/d over the same period.

Although European diesel imports returned to above 1mn b/d in April as French imports resumed, the region's receipts are still well down on the normal rate of 1.2mn b/d. At the same time, oversupply in Asia means that more diesel is being diverted to Europe from the Middle East and India, further pressuring regional middle distillate crack spreads.

European fuel prices *$/bl*



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Another key factor underpinning weaker diesel crack spreads is the fact that Russian diesel is still flowing, largely unhindered, to markets outside Europe — the reconfiguration of trade that has followed EU sanctions has not proved particularly disruptive. Russia continues to export large volumes of diesel to Turkey, Africa and, increasingly, Brazil.

But with the market structure likely to move into a wider contango, with forward prices at a premium to prompt values, European buyers could soon start taking more diesel to refill their storage tanks. Coupled with a seasonal demand uptick, diesel crack spreads could strengthen in the third quarter.

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NORTH AMERICA

Summary

This month

Credits generally saw a drop this month with all of them averaging the month lower than March. D3 credits saw the largest decrease compared to other RIN prices. Following a slow start to the year, biodiesel and renewable diesel (RD) sales have picked up, and we expect soybean oil demand for biofuels to have hit record highs of 1.5bn lbs in March, a figure to be confirmed at the end of this month.

Next month

Biodiesel prices saw another drop this month, but we anticipate that prices are going to slightly increase, while biodiesel/renewable diesel feedstocks are forecast to recover from the recent slump in prices. D4 prices are poised to remain steady in May and June.

3-6 months ahead

We expect RIN prices will remain steady before the US Environmental Protection Agency (EPA) revises its targets and announces the final Renewable Fuel Standard (RFS) in June. As our previous forecast for D4 prices was overly pessimistic, we have updated our forecasts and expect prices for the second quarter to be around the mid to high $1.50/RIN, and the D4-D6 spread to remain at extremely narrow levels.

6-12 months forward

Post bounce in the third quarter, we expect to see RIN prices start to decrease as other credits increase. Overall yearly ethanol demand is forecast to peak in August but no major spikes are anticipated to happen as gasoline consumption is expected to remain in the 8.6mn-9.2mn b/d range. As stated in previous reports, RD demand is expected to be on a continuous increase from August onwards.

Regulation

House Reps challenges EPA's eRIN programme

Republican members of the US House of Representatives Energy and Commerce Committee sent a letter to the EPA detailing concerns regarding the proposed implementation of the eRIN programme under the RFS. The letter states that the agency does not have the authority to implement eRINs as the original goal of the RFS was to incentivise production of domestic renewable fuels as opposed to a pathway to electrifying the automotive industry.

Last year, the EPA proposed an eRIN pathway whereby electrical vehicle original equipment manufacturers could contract with renewable electricity providers and thereby produce D3 equivalent eRINs, to be implemented as soon as 1 January 2024 if the proposed RFS blending targets are finalised by then.

US retains summer E15 sales

Citing emergency powers, the EPA issued a waiver to allow the sale of 15pc ethanol gasoline (E15) to continue this summer. Absent the authorisation, terminal operators in most of the US would have halted sales of E15 starting 1 May, and fuel retailers starting on 1 June, to comply with seasonal air emission rules. The waiver will give motorists the option to buy a fuel that often sells at a 25¢/USG discount to conventional 10pc ethanol blends, according to the EPA. The Joe Biden administration last year issued an emergency waiver allowing summer E15 sales, after WTI crude consistently traded above $100/bl. But oil prices so far this year are nowhere near last year's highs. The waiver is unlikely to have a noticeable effect on national fuel prices because E15 is only sold at about 2pc of the stations in the US.

Republicans spare biofuels on debt bill

Republican leaders in the US House of Representatives gave up trying to eliminate tax credits for biofuels and carbon capture to garner enough votes for a bill that would force deep cuts in clean energy spending in exchange for raising the federal debt ceiling. The House voted 217-215 in favour of the bill, which would raise the federal debt limit by up to $1.5 trillion and avoid a potential default until 31 March 2024 at the latest.

House Republicans are demanding major policy changes in exchange for raising the debt limit, including the repeal

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of nearly all the $369bn in climate spending in last year's Inflation Reduction Act. But plans to eliminate tax credits for biodiesel, renewable diesel and alternative fuels have generated opposition from party members representing agricultural states. The House Rules Committee ended up approving an amendment to the bill that would strike out biofuels provisions, in addition to preserving tax credits for carbon capture projects. Separately, the Rules Committee amendment would protect investors in sustainable aviation fuel projects launched between the passage of the Inflation Reduction Act last August and this month, when the debt ceiling bill was released.

California maintains 2024 LCFS plans

California regulators still plan to make revisions to the state's Low Carbon Fuel Standard (LCFS) to take effect in 2024, according to staff. But staff offered no new specifics on what approaches the rulemaking might include. LCFS trade has shifted focus to the timing and scope of the California Air Resources Board's (CARB) approach to a building supply of unused credits. CARB staff said in a February workshop that they planned to present a rule updating the LCFS to the board in late summer. Upcoming workshops, currently scheduled for late May/early June, should offer a general, community-focused overview of the programme, rather than seek the technical feedback staff have solicited for more than a year.

BC mulls low-carbon jet fuel mandates

British Columbia has proposed limiting jet fuel carbon intensity in 2025 and requiring a minimum level of renewable jet fuel use in 2028. Regulators also would require a 10pc reduction in jet fuel carbon intensity between 2025 and 2030. The British Columbia Ministry of Energy, Mines and Low Carbon Innovation will take comment on the proposals until 15 May. The province's tougher obligations contrast with the so far incentive-based approach across the border in the US as environmental regulators turn their attention to a source of transportation fuel emissions with few current alternatives.

State-level CO_2 emission programmes gain traction

In April, lawmakers in Connecticut, Massachusetts and Michigan entered or progressed legislative discussion targeting greenhouse gas (GHG) emission reductions.

In Michigan, Democrats announced plans for a package of bills that would call for a number of policies to reduce GHG emissions, including a clean energy standard that would lower by 25pc the carbon intensity of transportation fuels by the end of 2035, and an LCFS programme with a goal of cutting GHGs by 52pc by 2030 and achieving carbon neutrality by 2050.

Massachusetts regulators have taken a step toward creating a clean heat standard credit trading programme to reduce GHG emissions from buildings by 7pc/yr that could take effect next year. Connecticut lawmakers are weighing legislation that would set more granular GHG emission reduction targets for heating and cooling, industrial processes, natural gas distribution, and natural and working lands, and adopting "market-based compliance mechanisms" to meet them.

Demand

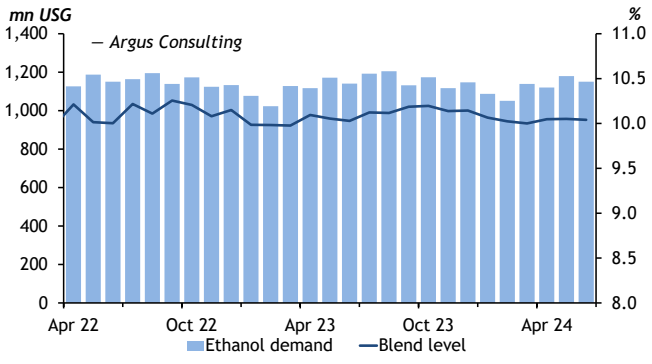
Ethanol

Ethanol demand to rise in summer

February ethanol demand was recorded at 870,000 b/d (1.02bn USG), a significant increase from the 827,000 b/d recorded in January owing to the expected seasonality. Our revised March demand now stands at 866,000 b/d (1.13bn USG), and we forecast demand in April to record 887,000 b/d (1.12bn USG). Overall blend levels are expected to be 9.98pc in March, see a slight increase to 10.09pc in April, and a small drop in May back to 10.05pc.

US total inventories remained relatively steady from the last week of March to the first half of April at approximately 25.1mn bl, then fell to 24.3mn bl in the third week of April and ended the month at a 2023 low of 23.4mn bl. US ethanol production fell by 44,000 b/d to 959,000 b/d in the first week of April, mainly driven by a decrease in Midwest production. Production then rose back to over 1mn b/d in the second week of April, but dropped again and ended the month very close to 1mn b/d.

US ethanol demand and blend level



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Renewable diesel

April demand to drop with lower diesel consumption

Renewable diesel consumption was recorded at 214mn USG, in March, and the overall blend rate was recorded at 4.2pc. April is expected to witness a decrease to 199mn USG amid lower demand for conventional diesel.

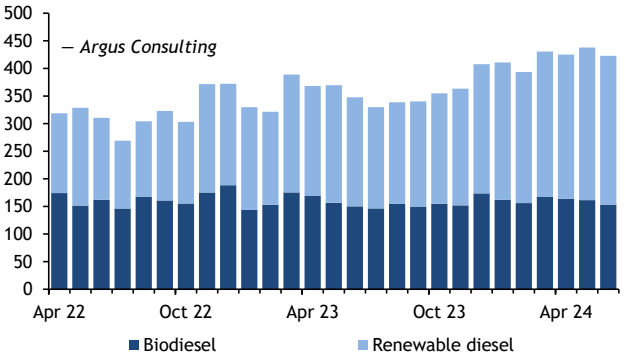
Renewable diesel imports rose by 52pc to 19,500 b/d in February compared with a year ago, although these were 4.5pc lower than the 20,419 b/d recorded in January.

Biodiesel

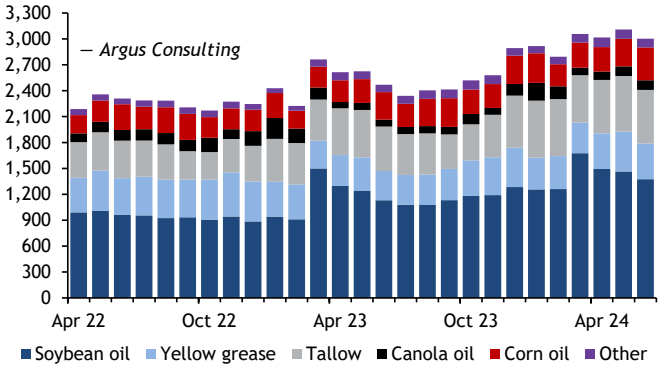
Biodiesel demand stable

March biodiesel demand was 175mn USG, with a blend rate of 3.47pc. We expect that blend rates will slightly increase in April to 3.50pc, leading to an overall biodiesel consumption of 169mn USG, then drop in May to 157mn USG. Biodiesel production capacity was at 2.06bn USG/yr in February, 7.6pc lower than a year earlier, but 0.4pc higher than January 2023.

US biodiesel and RD consumption *mn USG*



US biodiesel and RD feedstocks demand *mn lbs*



Feedstocks

Feedstock demand falls in February

Latest EIA data on feedstock demand for biodiesel and renewable diesel production showed an 8.5pc drop between January and February, from 2.43bn lbs to 2.22bn lbs, reflecting lower RD sales in that month while biodiesel volumes had moved in the opposite direction. Pronounced declines of around 30pc were noted for canola oil and corn oil, while demand for soybean oil and tallow have taken on milder losses of around 3pc.

Feedstock demand should have rebounded in March, given the higher D4 generation recorded in that month. We expect a record demand of near 1.5bn lbs of soybean oil in March. From April onwards, soybean oil demand is likely to remain above 1bn l/month for the remainder of the year. Tallow demand is also poised to increase and to stay above 500mn lb/mo in the second quarter.

US biofuel demand outlook

Product	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	2Q23	3Q23	4Q23	1Q24	2Q24
Biofuel											*mn USG*
Ethanol	1,077	1,023	1,128	1,117	1,171	1,141	3,429	3,529	3,438	3,278	3,450
Biodiesel	144	153	175	169	157	150	476	451	480	485	479
Renewable Diesel	186	169	214	199	213	198	610	558	645	749	807
Total	**1,407**	**1,345**	**1,517**	**1,485**	**1,541**	**1,488**	**4,515**	**4,538**	**4,563**	**4,513**	**4,736**
Biodiesel and renewable diesel feedstocks											*mn lbs*
Canola oil	242	168	138	73	82	80	234	254	333	443	322
Corn oil	289	207	242	251	275	319	845	916	888	890	982
Soybean oil	941	910	1,500	1,297	1,238	1,131	3,665	3,289	3,658	4,193	4,332
Tallow	497	480	477	543	549	515	1,607	1,349	1,511	1,868	1,880
Yellow grease	404	404	322	358	390	340	1,087	1,058	1,305	1,104	1,291
Other	56	55	84	94	90	86	269	293	296	269	321
Total	**2,429**	**2,224**	**2,762**	**2,615**	**2,624**	**2,469**	**7,708**	**7,160**	**7,992**	**8,767**	**9,128**

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Feedstock production up in March

March feedstock demand figures are still provisional, but we expect these to have gone up from February, and USDA data on various products confirm this trend.

US crude soybean oil (SBO) production for March was 2.3bn lbs, up by 1pc from the year before. Output in the month was 2.7pc higher than February. Distillers corn oil (DCO) production moved in the same direction, increasing 1.3pc in March from the year prior, although flat from February. US crude canola oil production in March was 154mn lbs, down by around 1.7pc from last year but 24pc higher than a month prior.

Yellow grease production in March rose by about 11pc over the year to 6.5mn lbs/d, and increased by 1.6pc compared with the prior month. Output of choice white grease (CWG), made from pork fat, totalled 3.8mn lbs/d, down by 2.5pc from last year and 6.6pc lower than the prior month.

Inedible tallow production totalled 12mn lbs/d in March, 19pc higher on the year, but down 7.9pc from February. Edible tallow production was 2.9mn lbs/d, 18pc higher than a year earlier, but 23pc lower from February. Technical tallow production of 3.2mn lbs/d was 8.3pc lower than in March 2022 and 17pc lower than in February.

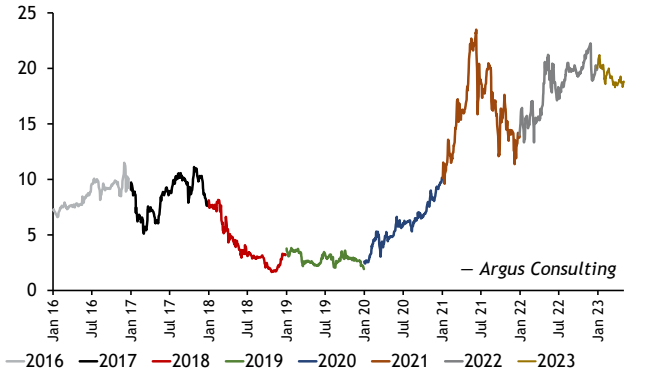
Credits

RINs/RVO

March US RIN generation up as D4 continues growth

RIN credit generation in March 2023 totalled 1.96bn, rising by 83mn relative to March 2022. The main driver for this increase was higher volumes of biomass-based diesel D4 credits, which grew by 26.3pc from 490mn a year earlier to 619mn in March. This follows year on year increases of 30pc in February and 47pc in January this year. These gains were partially offset by a decline in ethanol D6 RINs, which fell by 4.1pc on the year to 1.28bn in March.

Argus RVO *¢/USG*

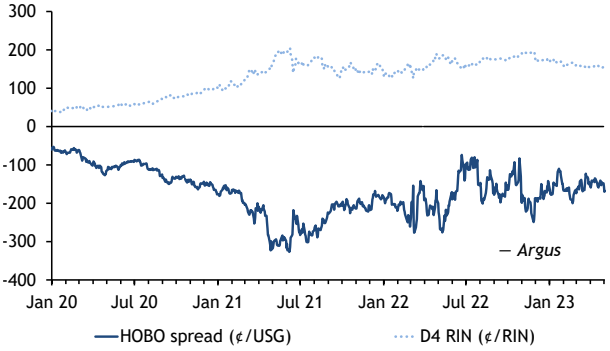


April RIN prices trend down

All RIN prices saw overall minor losses during April, and prices for D4, D5 and D6 RINs ended the month at their lowest. D4 prices started the month at 154.25¢/RIN, and after a few weeks of multiple climbs and drops, prices ended slightly below where they started, at 153.25¢/RIN. D4 and D5 moved identically throughout the month, and monthly averages for both categories stood at 156.68¢/RIN and 155.73¢/RIN, respectively. D6 prices started the month at 150.75¢/RIN, averaging the month at 153.62¢/RIN, 0.05¢/RIN lower than the previous month.

The 2023 vintage D4-D6 spread witnessed some further tightening compared with March, averaging 3.06¢/RIN compared with 3.72¢/RIN. Oversupply of D4 RINs tightened the

HOBO spread vs D4 RIN



US RIN price outlook							*$/RIN*
Category	**Mar-23**	**Apr-23**	**May-23**	**Jun-23**	**3Q23**	**4Q23**	**1Q24**
D4	1.57	1.57	1.56	1.63	1.67	1.63	1.50
	▼	◆	▼	▲	▲	▼	▼
D6	1.54	1.54	1.50	1.55	1.61	1.57	1.45
	▼	◆	▼	▲	▲	▼	▼

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D4/D6 spread to 2.5¢/RIN on 13 April, its lowest point since June 2016, following increases in D4 RIN generation in January and February.

The *Argus* Renewable Volume Obligation (RVO) peaked at 19.28¢/USG on 18 April, but ended the month at 18.32¢/USG. The RVO averaged the month at 18.78¢/USG, a 0.03¢/USG decline from the March average.

We expect RIN prices to remain steady during most of May, in anticipation of tougher RFS targets to be announced in early June. Beyond June, we forecast D4 RIN prices to correct upwards to ¢160-170/RIN, but with a downside risk in the case of 2023-25 generation levels being below what the market currently expects.

D3 credits lower

Similar but at a larger magnitude than other RIN types, D3 credits saw an overall decrease this month averaging 194.75¢/RIN compared with 196.85¢/RIN averaged in March. D3 RINs traded at below 200.00¢/RIN the entire month, peaking on 19 April at 197.50¢/RIN.

SRE denial news welcomed by RIN market

A federal court on 24 March rejected a lawsuit from a small refinery in Pennsylvania that had wanted an exemption from the Renewable Fuel Standard for the 2019 compliance year.

The 3rd US Court of Appeals rejected the lawsuit brought by United Refining focused on the biofuel blending requirements of its 65,000 b/d refinery in Warren, Pennsylvania. The refiner was challenging a decision from the EPA to deny its request for a small refinery exemption from the RFS for 2019.

LCFS

California LCFS price performs strong in April

Credits saw trading above $70/t the entirety of the month, posting the largest price on 21 April at $84.50/t. LCFS credit prices averaged the month at $78.17/t, a $9.69/t increase on the month, and ended it hovering around the $80.00/t mark.

California LCFS credit bank growth slows

Record volumes of unused California LCFS credits slowed their growth late last year, according to new state data published 28 April.

California LCFS forward prices *$/t*

Month	1Q23	2Q23	3Q23	4Q23	1Q24
Feb	64.61	64.79	65.16	65.47	
Mar	68.48	68.67	69.20	69.87	
Apr		78.71	80.05	81.18	81.95

Supplies of credits generated from low-carbon fuels used in California exceeded the deficits generated by gasoline and diesel fuels for a seventh consecutive quarter in the fourth quarter of 2022. Unused credits increased by 1.65mn t to 15.1mn t. It was the second-largest quarterly build for the programme, leaving the unused credit bank 12pc larger than the previous quarter and 57pc larger than the same quarter of 2021. But unexpectedly, higher gasoline consumption helped keep the increase 4pc smaller than record in the previous quarter.

Renewable diesel use again led credit generation for the period, generating 7.1pc more credits than the previous quarter as physical fuel deliveries increased by 5.6pc. Renewable biogas credits also increased by 1.6pc despite a 2.3pc drop in physical deliveries of the fuel.

Electric vehicle charging set another new record for demand and credit generation. Residential charging was calculated to replace about 8,300 b/d of gasoline demand during the quarter, higher by 17pc from the previous quarter and by two-thirds compared with the fourth quarter of 2021. Electric forklifts, a sector the California Air Resources Board has considered limiting in future years, saw credits grow by 5.2pc to make up 5.7pc of all credits produced during the quarter.

Rising CARBOB consumption tracked by CARB helped offset some of the credit generation this quarter. The state used about 832,000 b/d, a 4.7pc increase from the previous quarter and contrasting with a 2.3pc drop in implied demand for the period according to state tax data.

Oregon still at a premium to California

Oregon credits saw a significant increase this month, averaging $130.95/t compared with last month's $123.43/t. Compared to California LCFS credits, Oregon credits remain at a wide premium.

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Prices

Ethanol

Ethanol price rises mirror gasoline

Ethanol prices rose across the month, in the wake of stronger gasoline prices. Prices in April averaged 18¢/USG higher than in March, with prices at the Chicago Argo terminal averaging $2.42/USG. At the US Gulf coast, ethanol prices saw a similar increase, increasing from an average of $2.38/USG in March to $2.56/USG in April. Compared with March 2022, both prices this March spotted lower, at 8pc and 6pc less at Chicago Argo and US Gulf coast, respectively.

In May, we expect US ethanol prices to mirror a fall in gasoline prices. At Chicago Argo and US Gulf we see prices averaging $2.25/USG and $2.39/USG, respectively. We do not see the E15 waiver having a noticeable effect on national fuel prices as E15 is currently only sold at approximately 2pc of stations in the US.

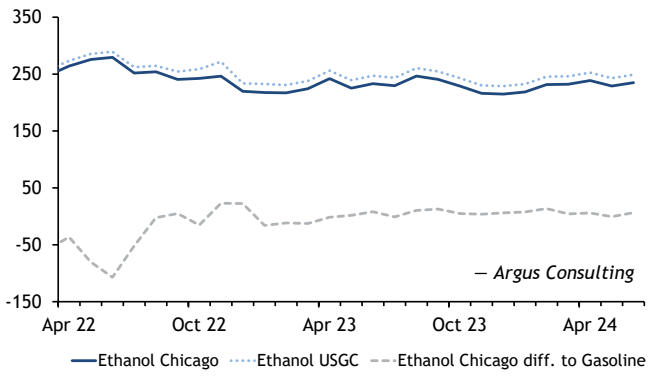
US refiners see higher costs from E15 push

Petitions from eight states that aim to retain year-round sales of 15pc ethanol gasoline (E15) could cost consumers $500mn-$1.1bn/yr according to a study funded by refiners.

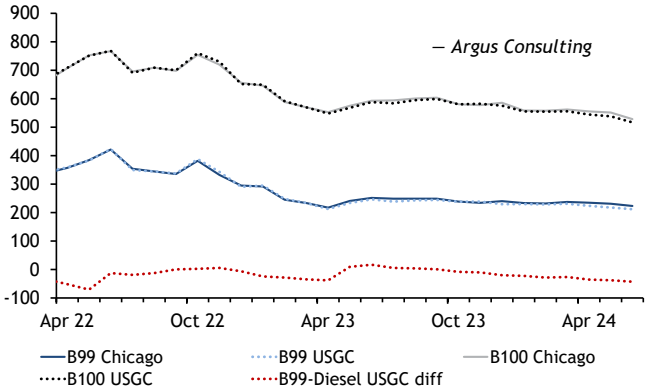
American Fuel & Petrochemical Manufacturers said costs will translate to an extra 8-12¢/USG in the summer in those states, even for 10pc ethanol gasoline (E10). The group says the estimated costs should lead states to withdraw a petition that would switch the region to a "boutique" summer gasoline blendstock with a lower Reid vapor pressure.

Ethanol industry groups have released their own study estimating the costs of the blendstock at 2¢/USG. The Renewable Fuels Association urged the EPA to authorise the fuel switch before the start of the summer driving season on 1 June, or alternatively to use its emergency waiver authority to allow E15 sales this summer, which President Joe Biden's administration has recently approved through an emergency waiver during the end of April.

US ethanol prices ¢/USG



US biodiesel prices ¢/USG



Biodiesel

Biodiesel prices see marked lows in April

Biodiesel prices at both Chicago 99 and US Gulf B99 saw their averages markedly drop in the month of April. The fall happened alongside a fall in the national average retail prices for US diesel, which saw its lowest prices since early February 2022. Biodiesel prices averaged $2.18/USG and $2.13/USG at Chicago 99 and US Gulf B99, respectively. Both prices were the lowest recorded averages for some time, with Chicago 99 only spotting below its recent April price in December 2021 and US Gulf B99 in September 2021.

Looking ahead, in the coming months we forecast both prices to pick up from their marked lows. Chicago 99 prices are expected to increase by 23¢/USG, to average $2.41/USG in May and US Gulf B99 prices to increase by 21¢/USG, to $2.34/USG in the same month. For the following quarter we envisage prices to hold around $2.48/USG for Chicago 99 and $2.40/USG for US Gulf B99.

Renewable diesel

R100 prices see lowest-ever recorded levels

R100 monthly prices in April averaged $6.89/USG for SBO-based R100, $7.11/USG for tallow-based product, $7.16/USG for corn oil-based product, and $7.25/USG for UCO-based product. The monthly average price fall saw all prices reach their lowest recorded price since assessment started in November 2021. Similar to the trend faced by biodiesel prices in April, a fall in the national average retail price for

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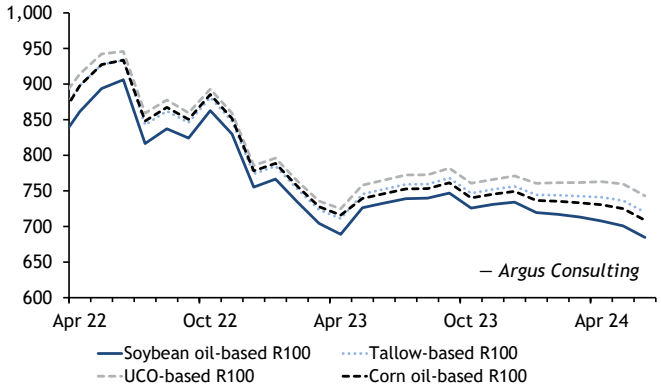
US renewable diesel prices ¢/USG



US diesel brought down renewable diesel prices across the month — and, renewable diesel margins decreased over April, averaging $2.20/USG compared with last month's $2.31/USG.

We expect renewable diesel prices to pick up from their falls witnessed across the board in April. Our forecast average prices for May are as follows: $7.26/USG for SBO-based product, $7.52/USG for tallow-based product, $7.46/USG for corn oil-based product, and finally $7.65/USG for used cooking oil (UCO)-based product. Looking forward, we expect prices to remain somewhat flat through the third quarter, averaging $7.42/lb for SBO-based product, $7.62 for tallow-based product, $7.76 for UCO-based product and $7.56/lb for DCO-based product.

Feedstocks

SBO sees 5pc drop in April

Feedstock prices for biofuels in April saw decreases for SBO and remained relatively steady for all other feedstocks. Soybean oil witnessed a drop of 5pc on the month to ¢57.2/lb, the lowest monthly average recorded since February 2021. DCO increased by 2pc to ¢58.0/lb, tallow remained roughly the same as last month, spotting ¢53.8/lb, and UCO saw a small 1pc increase to ¢55.5/lb from March to April. We anticipate prices to increase from their recent slump

US biofuel price outlook

Product	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	2Q23	3Q23	4Q23	1Q24	2Q24
Ethanol											¢/USG
Ethanol Chicago Argo in-tank transfer prompt	218	217	224	242	225	233	233	239	220	227	234
Ethanol USGC barge/rail fob Houston	233	231	238	256	239	247	247	253	234	241	248
Biodiesel											¢/USG
B99 SME Chicago in-tank transfer Argo	292	245	233	218	241	251	237	249	238	234	230
B99 SME fob Houston rail/barge	295	248	233	213	234	247	231	242	235	230	218
B100 SME Chicago in-tank transfer Argo	646	588	569	553	575	593	574	599	581	560	545
B100 SME fob Houston rail/barge	649	591	569	548	568	588	568	592	579	555	533
Renewable diesel											¢/USG
R100 (soybean oil-based) del California	767	735	704	689	726	733	716	742	730	717	698
R100 (UCO-based) del California	796	764	736	725	758	765	749	776	766	761	755
R100 (tallow-based) del California	785	753	724	711	745	752	736	762	752	744	732
R100 (corn oil-based) del California	789	757	728	716	739	746	734	756	745	735	721
Feedstocks											¢/lb
Soybean oil crude degummed US Gulf coast del rail	68	66	60	57	62	63	60	64	62	60	58
UCO US Gulf coast del rail	71	59	55	56	60	61	59	62	61	62	59
Tallow bleached fancy US Gulf coast del rail	70	58	54	54	60	62	58	64	59	58	58
Distillers corn oil US Gulf coast del rail	71	62	57	58	62	63	61	64	63	62	60

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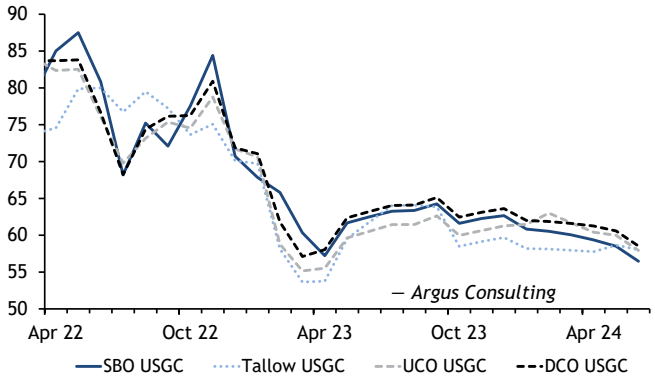
US biofuel feedstock prices ¢/lb



in May, with prices across feedstocks expected to clock at ¢60-62/lb. Tallow is often priced at a ¢2-3/lb discount to UCO, but strengthens during the summer months and we expect both feedstocks to price at ¢60/lb in May. From June to September, we expect tallow will hold a premium over UCO, as it averages ¢63/lb, while UCO averages ¢62/lb over the same period. We anticipate UCO will regain its premium over tallow in October, which will remain limited to ¢2/lb for the rest of the year.

Fundamentals

Agriculture

One in two soybeans come from Brazil

The 2022-2023 crop year has highlighted the dominance of Brazil with more than one in two seeds among the three main exporters being Brazilian. Until 2002, the US accounted for more than 50pc of soybean production of the three main world exporters (Argentina, Brazil and the US) and in the early 2000s, their total soybean production stood at 143mn t. But, with the emergence of South American countries, their total production could reach 330mn t next season. The prospects for the future 2023-2024 harvest should solidify this emerging shift, with forecasts pointing towards reaching 158mn t, which would mean exceeding its previous record by 5mn t, thanks to a further expansion of total acreage.

US export demand has remained relatively weak, seeing a slower pace in exports to past seasons, although in the coming months, we expect domestic demand to pick up because of a rise in demand for its biodiesel sector. As for Argentina, need for imports are noticeably high but said imports have struggled to materialise.

Brazil sees excellent corn crop

In the US, corn prices were particularly marked with a weekly drop in prices unseen since June 2022. This was because of cancellations of export contracts with China and the excellent crop in Brazil. Vegetation indexes for corn are particularly positive and leading many to revise their production estimates upwards, and places Brazil in a competitive position.

Looking ahead, US corn is to remain at risk. Even if planting delays recover, there are some drought profiles in the heart of the corn belt and too-wet conditions in the north of the country. With this in mind, as well as the highly competitive Brazilian crop, we expect the US to fail to meet its export target.

Climate uncertainties for US wheat continue

Climate uncertainties around wheat in the US have been a particular focus as, despite rains, winter wheat conditions have not improved. Winter yields remain among the lowest for the last 35 years and spring planting is one of the most delayed in 20 years, with some places too dry or too wet for planting.

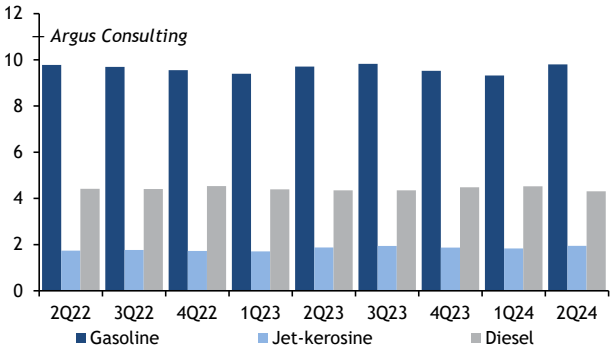
Fossil fuel demand and prices

No return to 2019 gasoline demand levels

Gasoline cracks averaged $22.01/bl against WTI Houston in April on the US Gulf coast, down by $2.61/bl from March. Supply has been plentiful for reasons including low exports, high refinery output following the end of the maintenance season, and the highest level of imports since July 2022. But demand has been weaker than expected. Gasoline consumption is up on 2022 levels, but refiners say they do not expect to see a return to 2019 levels this summer driving season.

In light of last summer's tight octane market, which drove up gasoline cracks, we had been factoring in scope for stronger gasoline cracks again this year. But we do not presently see the same degree of tightness in high-octane blending component supply this summer.

North America fuel demand mn b/d



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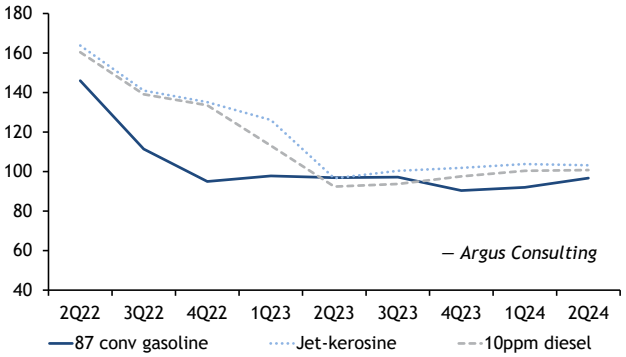
US diesel demand to decline 3pc

US oil demand is still below pre-Covid levels, leaving many to questioning whether it will ever return to 2019 levels. Diesel demand in particular has stalled, reflecting low consumer demand and, as a result, a drop in import demand as well as lower requirements for commercial trucking to distribute goods from the Pacific seaboard. Middle distillate crack spreads in the US turned weaker across the month as a result of macroeconomic pressures. Ultimately, weak industrial growth suggests US diesel demand will decline by almost 3pc this year.

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



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SOUTH AMERICA

Regulation

Brazil eyes 30pc ethanol blending mandate

The Brazilian ministry of mines and energy has proposed a gradual increase of the ethanol blending mandate in gasoline, from 27.5pc to 30pc. The country's national energy policy council CNPE will create a group to discuss the matter.

Brazil has also reinstated a 12-month timeline to comply with decarbonisation credit targets established under the country's national biofuel policy Renovabio, and announced it will create the "Fuel of the Future" biofuel programme to support sustainable low-carbon mobility through ethanol.

Argentina sets out third soy dollar scheme

On 5 April, Argentina's economy minister Sergio Massa set out the details of the country's third soybean dollar scheme, in a bid to boost soybean exports. The programme began on 10 April and will run until the end of May. Later in the month, the programme expanded to other biofuel feedstocks, and set minimum volumes for domestic supply of sorghum at 950,000t, feed barley at 2mn t, sunflower seed at 145,000t, sunflower oil at 1.1mn t and sunflower meal at 1.15mn t.

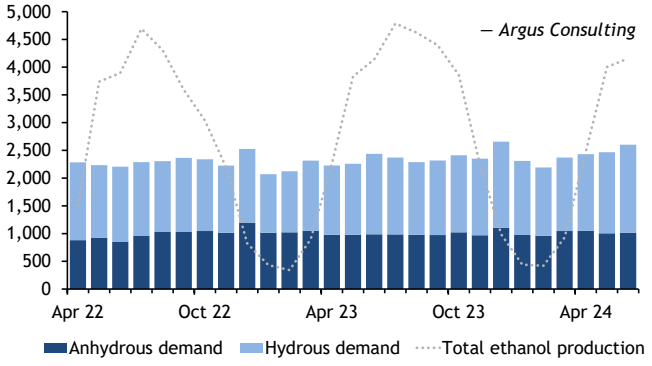
Demand

Ethanol

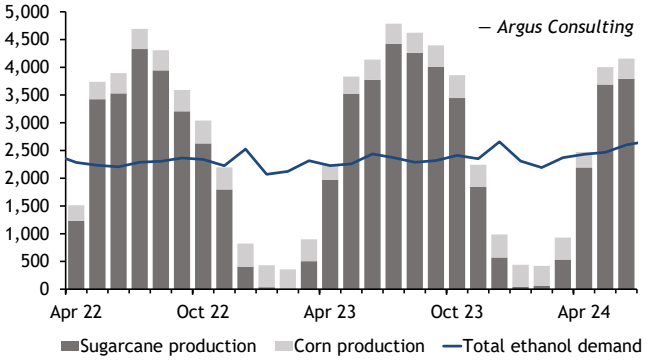
Six-year high for March anhydrous demand

Ethanol consumption increased by 9pc in March in Brazil, from 2.12bn litres recorded in February to 2.32bn litres. This comprised a 2.4pc and 15.2pc rise in anhydrous and hydrous ethanol consumption, respectively.

Brazilian ethanol demand *bn litres*



Brazilian ethanol production *bn litres*



Anhydrous ethanol demand in March reached a six-year high for the month, as March demand is typically lower than the 1.05bn litres recorded this year. Compared with the same time last year, demand was 17.6pc higher. This was a result of noticeably higher gasoline consumption for March compared with past years owing to competitiveness at the pump.

We expect Brazilian ethanol consumption to have fallen by 3.8pc in April to 2.23bn litres. Falls are anticipated in both anhydrous and hydrous ethanol demand over the month by 6.8pc and 1.3pc, respectively.

Demand is forecast to rebound in May, increasing to 2.26bn litres, driven by a rise in hydrous ethanol consumption. Looking towards June, ethanol consumption is expected to pick up slightly at 2.44bn litres. But with Brazil's energy minister recently suggesting a possible increase in the ethanol blending mandate to 30pc from 27.5pc, this could raise our ethanol demand outlook in the coming quarters.

New sugarcane harvest starts in April

We anticipate Brazilian ethanol production to stand at 2.26bn litres in April, with Brazil's sugarcane harvest officially starting on 1 April. Throughout April, mills ramped up ethanol production, growing sugarcane availability.

In the Centre-South, ethanol production increased in the first half of April compared with last year, with producers crushing 13.6mn t of sugarcane, which was more than twice as much processed in the same period in 2022. As the harvest season continues and volumes ramp up, we forecast Brazilian ethanol production to be at 3.83bn litres in May, a 70pc rise from April.

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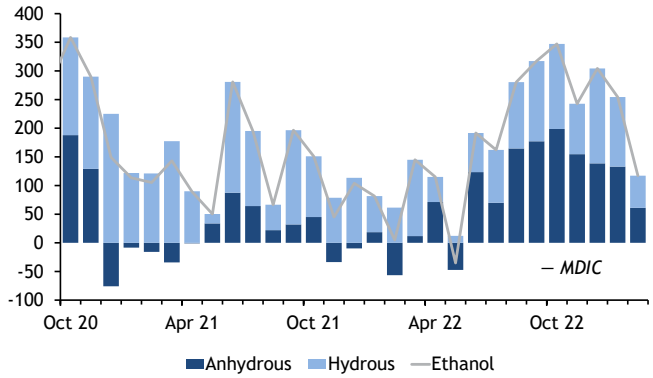
Brazilian net ethanol exports *mn litres*



Ethanol net exports surge in March

Brazil's ethanol net exports surged in March, as producers sent part of a supply surplus abroad. The country's market slowdown showed no sign of easing and gasoline continued to be more profitable at the pump. Ethanol net exports grew to 197mn litres in March, a 35pc increase from the 145mn litres observed in March 2022.

Exports of hydrous ethanol to South Korea represented 60pc of the total shipments from the country in March. The US received 17pc of Brazilian ethanol exports, followed by the Philippines with a 6pc share, Argentina with 4.8pc and Japan with 4.7pc. The high flow of shipments comes as ethanol consumption remains mostly subdued domestically, putting extra pressure on domestic producers to find new growth avenues. Meanwhile, Brazil's ethanol imports dropped by 71pc in March compared with a year earlier, spotting a little over 10mn litres, and virtually all ethanol imported in the period came from Paraguay.

Biodiesel

Demand to spike from raised mandate

Consumption of biodiesel in Brazil rose by 22pc in March, increasing from 444mn litres to 543mn litres. The month also saw the overall blend rate increase by 0.11 percentage points from February, to 9.57pc.

But Brazil's mandate hike of two percentage points, from 10pc to 12pc blend in April, should lead to a 15pc month-on-month increase in biodiesel demand, to 625mn litres. After April, we forecast demand to remain fairly stable in May, then going on to increase throughout June and July, alongside diesel demand.

Feedstocks

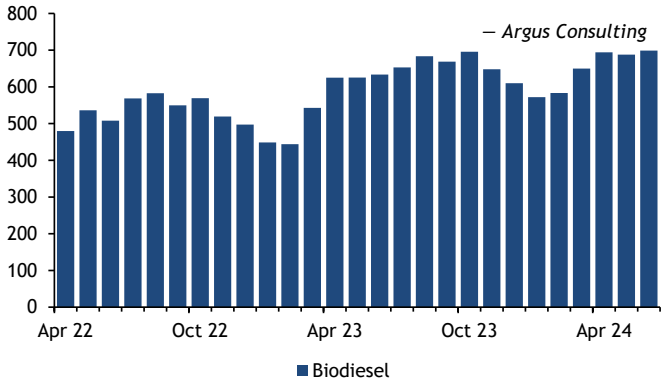
Soybean oil sees rise in derived demand

Soybean oil demand in Brazil climbed by 25pc in March, from 264,000t in February to 329,000t. Tallow demand fell by 33pc over the same period, from 40,000t to 27,000t, and palm oil demand grew by over 100pc, with demand increasing from 7,000t to 15,000t. Consumption of other vegetable oils and other animals fats decreased by 57pc and increased by 6pc, respectively.

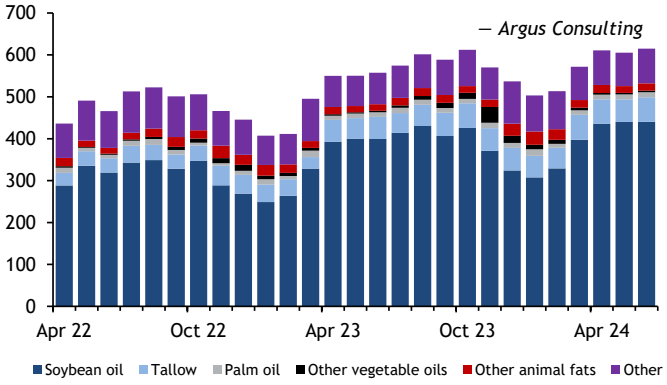
Compared with February, the shares of soybean oil and palm oil increased by 2.2 and 1.3 percentage points, respectively, while the share of tallow fell by 4 percentage points in the same period.

Brazil's mandate hike should boost feedstock demand this year. For April, we expect soybean oil demand to have increased by 19pc on the month, to 623,000t. Similarly, tallow consumption is forecast to almost double to 52,000t (although this steep increase is more a reflection on the low March demand). Demand for palm oil and other vegetable oils is expected to have fallen by 33pc and 57pc, respectively, in line with the previous years' seasonality. We anticipate these values to hold fairly stable in May and June, with an outlook for increased soybean oil demand in the months to come.

Brazilian biodiesel demand *mn litres*



Brazilian biodiesel feedstock demand *'000t*



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Brazilian biofuel demand outlook											
Product	**Jan 23**	**Feb 23**	**Mar 23**	**Apr 23**	**May 23**	**Jun 23**	**2Q23**	**3Q23**	**4Q23**	**1Q24**	**2Q24**
Ethanol demand											*mn litres*
Anhydrous ethanol	1,014	1,023	1,048	976	977	987	2,940	2,937	3,096	2,983	3,070
Hydrous demand	1,057	1,101	1,267	1,251	1,282	1,451	3,984	4,040	4,322	3,890	4,430
Ethanol demand	2,071	2,124	2,315	2,227	2,259	2,438	6,924	6,978	7,419	6,872	7,500
Biodiesel demand											*mn litres*
Biodiesel demand	449	444	543	625	625	634	1,884	2,005	1,954	1,805	2,081
Feedstock demand											*'000t*
Soybean oil	249	264	329	393	400	399	1,192	1,251	1,121	1,034	1,317
Tallow	42	40	27	52	49	53	154	153	167	160	170
Palm oil	13	7	15	10	11	11	32	36	35	36	35
Other vegetable oils	9	8	7	3	3	4	10	27	69	27	11
Other animal fats	26	20	16	17	15	16	48	56	62	75	53
Other	70	73	101	74	72	75	222	242	264	256	245
Total	**407**	**411**	**495**	**550**	**550**	**558**	**1,658**	**1,764**	**1,719**	**1,588**	**1,831**

Anhydrous ethanol: free of water and at least 99pc pure, and used in gasoline blends, currently set at 27pc. Anhydrous fuel meets all the requirements of the ASTM D4806. Hydrous ethanol: contains water and has a purity of 96pc. Can be used in Brazil as a 100pc gasoline substitute in flex-fuel vehicles.

Prices

Ethanol

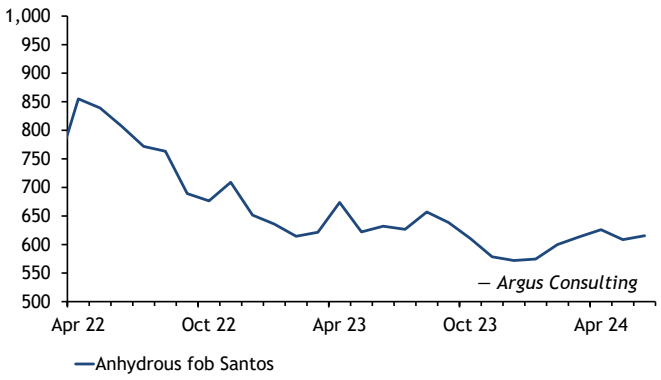
Real's strength against dollar bolsters prices

Prices for anhydrous ethanol fob Santos averaged 8.4pc higher in April than in March, increasing from $622/m³ to $674/m³, as buying levels rose at the Californian Carson terminal. The increase in prices between March and April follows a similar trend observed in the past two years, but the April 2023 average was 21pc lower than in April 2022.

In local currency terms, prices rose by 4.4pc on the month, while the Brazilian real to US dollar exchange rate strengthened by 3.6pc over the same period. But a narrowing D5-D6 spread, amid fresh deals for advanced biofuels D5 credits, limited further price gains.

Assuming the continuation of a narrow D5-D6 RIN spread, we expect the anhydrous ethanol fob Santos monthly average prices to decrease to $622/m³, back to March levels. Looking onwards from May, there appears to be room for prices to pick up in June, with prices forecast at $632/m³ and an average of $641/m³ in the third quarter.

Brazilian ethanol prices *$/m³*



Biodiesel

Market activity remains slender

Despite a 6pc fall in prices for SME Argentina fob Upriver, from $1,501/t to $1,411/t, market activity remained slender in April. Prices remained higher compared with EU Fame 0 prices, which effectively limits trade opportunities for Argentinian biodiesel. Earlier this year, there were reports of at least one trader cancelling two cargoes that were to arrive in the second quarter.

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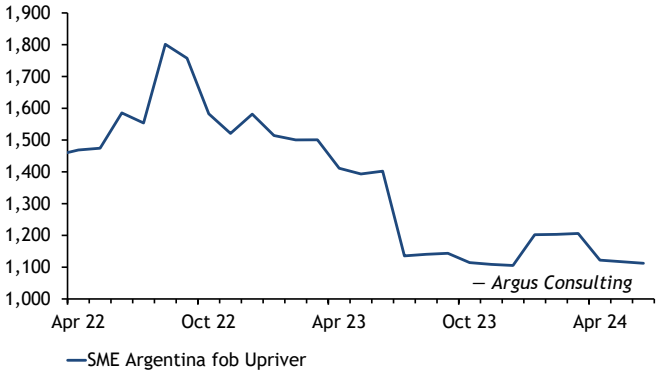
Argentina biodiesel prices

$/t



SME prices in Argentina are unlikely to move to a different range in May and June, but we forecast a downward correction in July to $1,136/t, tracking sluggish European prices.

Brazil B100 prices rise on tax, blend changes

Differentials for Brazilian biodiesel contracts narrowed in May and June, reflecting a recent move to a single-phase model for state-level, VAT-like tax ICMS and an increase in the blending mandate.

Starting in May, a fiscal reform consisting of a single ICMS levy will impact two major aspects of the biodiesel producers' tax regime, namely the presumed credit — a tax incentive given at the state level — and how producers will offset taxes gathered on the purchase of feedstock coming from other states.

Producers will pay an additional R630.40/m^3 (47.54¢/USG) because of the tax, which will be included in the price of biodiesel sold as of May. Several production centres have queues of distributors' trucks waiting to collect product by 28 April, considered the last chance to retrieve acquired volumes without the additional tax.

A significant increase in the supply of Brazilian soybeans following the 2022-23 harvest should act as a buffer to the upward price pressure.

South American biofuel price outlook

Product	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	2Q23	3Q23	4Q23	1Q24	2Q24
Brazilian ethanol											$/m^3$
Anhydrous fob Santos	636	614	622	674	622	632	643	641	587	596	617
Argentinian biodiesel											$/t
SME Argentina fob Upriver	1,514	1,500	1,501	1,411	1,393	1,402	1,402	1,140	1,110	1,204	1,117

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ASIA-PACIFIC

Regulation

May palm oil export duties flat

Indonesia's crude palm oil (CPO) reference price for 1-15 May increased to $955.53/t, from $932.69/t for 16-30 April. The increase was not large enough to trigger the next brackets of taxes, and export duties remained at $124/t on CPO, $71/t on refined, bleached and deodorised (RBD) palm olein and $32/t on biodiesel (BD).

Additional levies charged on CPO, RBD palm olein and BD exports stayed at $100/t, $80/t and $70/t, with funds channelled to subsidise domestic BD blending and oil palm replanting.

Malaysia will continue to impose an 8pc duty on CPO exports as prices stay above 3,450 ringgit/t, the level beyond which the maximum tax rate is applicable. The May CPO reference price rose to 4,063.58 ringgit/t ($911/t) from 4,031.45 ringgit/t in April.

Indonesia revises export rules

Effective 1 May, Indonesia raised the minimum share of domestic sales of vegetable oils, which includes used cooking oil (UCO) but excludes palm oil mill effluent (Pome). For every 1t sold domestically, sellers are now only allowed to export 4t, down from the 6:1 ratio in place until April.

The government will also start to gradually redistribute export rights for 3.03mn t of oils that it temporarily withdrew in February. Export permits will be returned over the course of nine months starting in May, averaging 336,000 t/month. The total domestic market obligation, or the volume of cooking oil the ministry wants to maintain within the domestic market, will be lowered to 300,000 t/month from 450,000 t/month currently.

Indonesian UCO group launches tracking app

Indonesia's waste cooking oil exporters' association has released for beta testing an app developed for tracing UCO within the country. The SiMiJel app was developed to help Indonesian UCO collectors and exporters align with EU regulations for feedstock traceability up to the point of origin. The association hopes increased market transparency through the app will enable Indonesia to boost UCO sales to the EU. The bloc is launching its own database for tracing renewable transport fuels, aiming to be fully operational by the fourth quarter.

Demand and prices

HVO and SAF

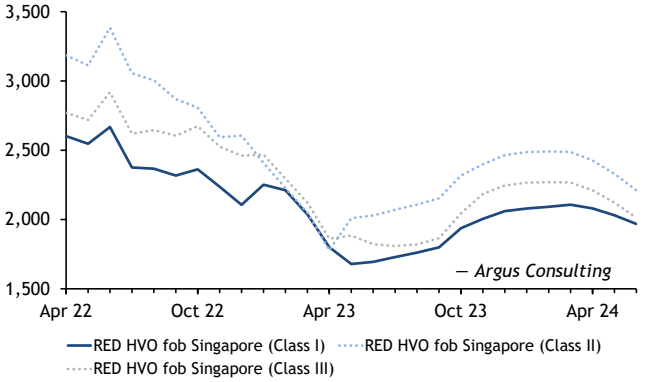
HVO markets post double-digit losses

The wider hydrotreated product complex has continued to weaken this month as there is little indication of arbitrage with Europe reopening and prices through the month moved in unpredictable directions. Hydrotreated vegetable oil (HVO) Class II posted the highest losses in April, down 13pc on the previous month to $1,779/t, the lowest monthly average since December 2020. The unexpected market dynamic observed in Europe also applied to the fob Singapore prices, with the monthly average for Class II below Class I and III monthly averages. HVO Class I had traded at a premium to Class II earlier in the year, but April was the first month with Class II prices consistently below Class I.

Average prices in April for HVO Class I fell 11.6pc to $1,800/t and Class III prices fell 12.2pc to $1,863/t, the lowest monthly prices in two years.

We expect prices for HVO Class I to weaken further in May, falling to around $1,680/t, with some recovery expected in June, averaging approximately $1,750 from June to September. HVO Class II prices are showing clearer signs of recovery, and we expect prices will rise 12pc in May to around $2,010/t. We forecast prices will see month-on-month gains, averaging approximately $2,110/t in the third quarter and $2,400 in the fourth quarter. HVO Class III prices are expected to weaken slightly, averaging around $1,830/t in the third quarter but will strengthen in the fourth quarter as the product tracks gains in Class II prices, averaging around $2,150/t.

Asia-Pacific HVO prices *$/t*



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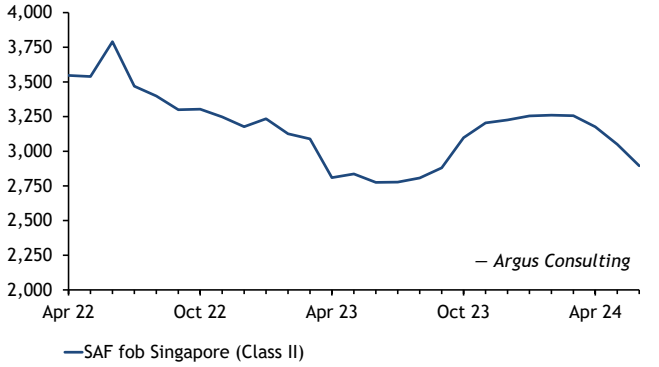
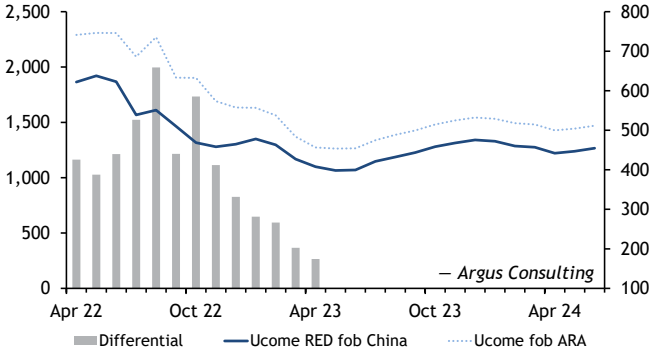
Asia-Pacific SAF prices $/t



Ucome prices $/t



The average sustainable aviation fuel (SAF) fob Singapore price fell 9.0pc in April, to $2,801/t, the lowest since September 2021. SAF is expected to weaken further to $2,775/t in June and remain flat in July. Prices are expected to recover in the fourth quarter, averaging around $3,180/t.

Biodiesel and feedstocks

Ucome fob China price hits 27-month low

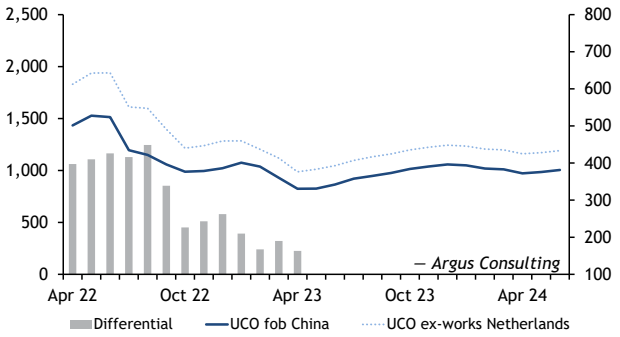
On 11 April, the *Argus*-assessed used cooking oil methyl ester (Ucome) fob China price fell to $1,018/t, the lowest daily price since November 2020, as arbitrage with Europe remained closed for an extended period of time. This brought the average monthly price to $1,099/t in April, a 5.9pc fall on the previous month. Reflecting impracticable prices in Europe, the Ucome ARA-China spread fell to $174/t, the lowest in two years.

European biodiesel markets are in stalemate, with prices continuing to weaken and ticket markets posting record losses. Chinese and Indonesian biodiesel producers have started turning to the US as an alternative, with limited success.

UCO prices on a 10pc fall

UCO fob China prices continued to weaken in April, falling 11.4pc to $824/t, the second month in a row when monthly prices fell over 10pc. Prices are expected to have hit a floor, with reports from market participants indicating there is little breathing room in domestic prices and collection costs.

UCO prices $/t



Asia-Pacific biofuel price outlook $/t

Product	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	2Q23	3Q23	4Q23	1Q24	2Q24
Biodiesel											
Ucome RED China fob	1,350	1,297	1,168	1,099	1,065	1,070	1,078	1,187	1,312	1,297	1,242
HVO											
HVO Class I Singapore fob	2,251	2,212	2,037	1,800	1,679	1,695	1,725	1,763	2,001	2,093	2,026
HVO Class II Singapore fob	2,409	2,227	2,049	1,779	2,010	2,029	1,939	2,110	2,394	2,489	2,322
HVO Class III Singapore fob	2,468	2,295	2,122	1,863	1,884	1,822	1,856	1,831	2,158	2,268	2,115
SAF											
SAF Class II Singapore fob	3,234	3,126	3,089	2,810	2,837	2,775	2,807	2,822	3,176	3,257	3,041
Feedstock											
UCO China fob	1,075	1,037	929	824	826	865	838	948	1,037	1,026	987

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Trade

UCO and Ucome

China exports more biodiesel, feedstock in March

Chinese biodiesel exports rose to 215,000t in March, an increase of 12pc on the month and 87pc on the year , supported by a widening price spread between Ucome in China and at the Amsterdam-Rotterdam-Antwerp (ARA) hub in February. Advanced biodiesel grades produced from 9A feedstocks are making up an increasing proportion of Chinese biodiesel exports relative to Ucome since February.

UCO exports also increased by 73pc on the month to 157,000t in March, owing to higher imports from Singapore that increased to 40,000t, and to 31,000t shipped to the US. Demand from the HVO and SAF sectors remained strong in both Asia-Pacific and US markets, while European demand continued to weaken, with only Spain buying more than 10,000t of Chinese UCO in March, while all other European countries imported lower volumes.

ISCC responds to suspected biodiesel mislabelling

The International Sustainability and Carbon Certification (ISCC) reported it carried out 70 unannounced integrity audits at processing units in China and Singapore in April, responding to market concerns after Chinese biodiesel exports more than doubled from a year earlier during January-February, weighing heavily on European biofuels prices. There have been reports of advanced biodiesel produced from Pome, food waste and soap stock offered to Europe in volumes exceeding what could reasonably be produced, and indications they may include fraudulent cargoes. Based on results of the audits, the ISCC said it will work to clarify definitions and yield thresholds for specific waste and residue feedstocks.

Palm oil

Stocks decline

Indonesia's palm oil inventories fell to a four-year low at the end of February, on stable exports and lower production. Total palm oil inventories fell to 2.6mn t, the lowest since March 2019, representing a 15pc decline from the previous month and nearly halving on the year.

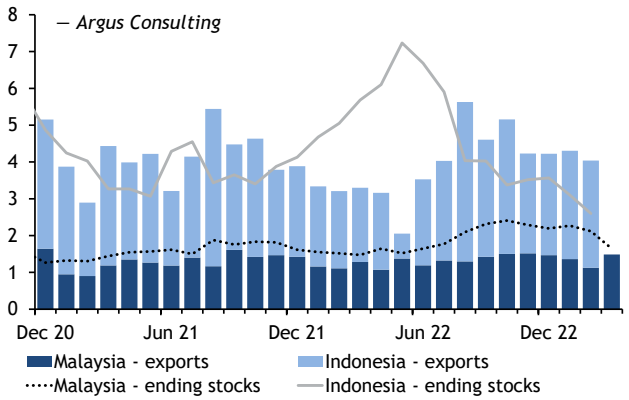
Increasing signs that El Nino could form later in the year have prompted the Indonesian palm oil association to raise awareness about the impact of the dry season on plantations, which might increase the potential for fires. Although some market players are concerned about lower yields, the association said productivity will not be affected, and production will continue to increase through 2023.

Malaysian palm oil stocks also fell to their lowest level in nine months by the end of March, dropping to 1.67mn t, a 21pc fall on the month and the lowest level since June last year. Palm oil exports rose by 32pc to 1.49mn t in March, up from 1.13mn t the previous month, likely boosted after Indonesia limited exports ahead of the Eid al-Fitr holiday in April.

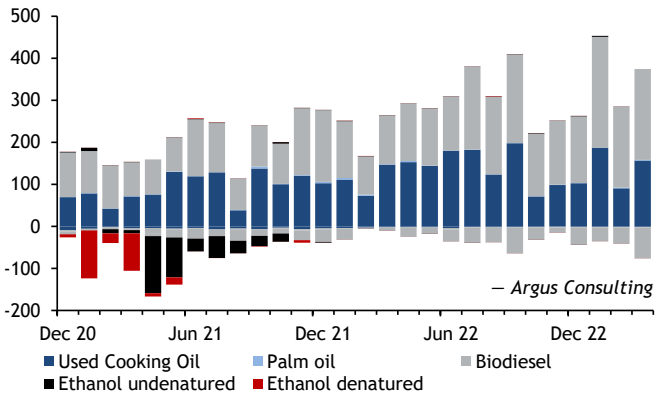
SE Asia palm waste exports raise questions

Indonesian and Malaysian exports of palm oil wastes used as biofuel feedstocks rose sharply during January-February compared with previous years, particularly to China, raising concerns about alleged fraudulent practices. Indonesian palm oil waste exports to China under HS codes starting 2306 and 3823 more than trebled from a year earlier to 730,000t during January-February, up from 225,000t during the same months in 2022. Shipments to other destinations remained more stable, pushing total exports up by 30pc to 2.19mn t. Exports to China under the HS 2306 code, which include Pome and palm acid oil (PAO), rose almost five-fold

China biofuels and feedstock trade *'000t*



Asia-Pacific palm oil trade *mn t*



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from a year earlier to 382,000t during January-February, while Chinese exports under code 3823, including PAO and palm fatty acid distillate (Pfad), rose by 142pc to 348,000t. Similarly, total Malaysian exports under 3823, which is used for Pome, PAO and Pfad from that country, rose by 13pc to 413,000t during January-February.

The rate of growth in these flows is of concern to market participants, as supply of these wastes is limited by palm oil production volumes that have remained relatively stagnant over the same period. Indonesian crude palm oil output was flat from a year earlier at around 3.9mn t in January, while Malaysian output rose by 3pc to 3.8mn t for January-March.

Total potential output of Pome varies depending on technology but should be between 1pc and 2pc of CPO production volume. Likewise, PAO is a by-product from chemical alkali CPO refining, and output should be negligible with most refining capacity in Malaysia and Indonesia using physical not chemical processes.

Although recent export volumes under 2306 and 3823 seem more than what can be reasonably available because of these limitations, the lack of distinct HS codes for Pome, PAO and Pfad and their differing uses between countries also make it difficult to track individual flows of these products to ensure volumes add up.

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GLOBAL SUPPLY

Europe

Polish refiner PKN Orlen plans to bring forward refinery investments by two years so that it can start producing E10 gasoline in Poland in January 2024, pending government regulations to roll out the fuel.

Spanish refiner Cepsa announced plans to build a 500,000 t/yr second-generation HVO plant in southern Spain in partnership with Bio Oils, near the city of Huelva. The plant will use agricultural residues and UCO, and is expected to come on line in the first half of 2026.

UK airline Jet2 will invest in renewable fuels firm Fulcrum's SAF plant, planned to be built in Cheshire, north England, on the site of the 194,500 b/d Stanlow refinery. The plant is due to be operational in 2027, with a capacity of 100mn litres/yr of SAF produced from non-recyclable household waste.

Norwegian Airlines has signed a strategic partnership deal with Norsk e-Fuel to build an e-fuel plant in Mosjoen, northwest Norway, with SAF production expected by 2026.

Maersk Growth and VAR Ventures plan to invest €2.15mn ($2.4mn) in Kvasir Technologies' demonstration plant converting lignocellulose into marine biofuel. The plant will have capacity to produce 2,000 l/d of advanced marine biofuel.

Iceland's state-owned power company Landsvirkjun and industrial gas company Linde have signed preliminary agreements to develop e-fuel projects in Iceland, aiming to fully decarbonise its energy mix, with production expected in 2025.

Finnish refiner Neste will supply German train operator Deutsche Bahn with 13,300t of HVO for its diesel-powered trains, produced from wastes and residues such as UCO.

Several airlines announced SAF supply and investment decisions in April:

- Ryanair is now powering all its flights from Amsterdam Schiphol airport in the Netherlands with a 40pc SAF blend.

- Repsol will supply Ryanair with up to 155,000t of SAF in 2025-30 for its flights in Spain and Portugal. Repsol also entered a separate agreement with aeronautical group Gestair to scale up production and consumption of SAF.

- Wizz Air has invested £5mn ($6.2mn) in UK biofuel company FireFly, which will supply up to 525,000t of SAF produced from sewage sludge to Wizz Air's UK operations over 15 years, starting from 2028.

- Cepsa entered a separate agreement with Wizz Air to scale-up production and consumption of SAF.

North America

US independent refiner Par Pacific has announced a $90mn investment to build a renewable fuels facility at is 94,000 b/d refinery in Kapolei, Hawaii. Par expects the site to produce 4,000 b/d of RD and SAF, as well as renewable naphtha and LPG. Production is expected to start in 2025, utilising local oilseed crops as feedstock.

Montana Renewables has started up its SAF and pre-treatment units in Great Falls, Montana, upon completing work to expand production capacity. The plant started RD production in November 2022 at a 6,000 b/d capacity, expected to have increased to 12,000 b/d in the first quarter of 2023.

US refiner Vertex Energy has completed construction of its renewable diesel unit located at its refinery in Mobile, Alabama, and should start production in the coming weeks. The company expects initial production at 8,000-10,000 b/d before an eventual ramping up to 14,000 b/d.

Louis Dreyfus will expand its canola processing plant in Saskatchewan, Canada, with construction to start in late 2023. The upgrade will take the plant's annual crush capacity over 2mn t.

Kinder Morgan opened two RD pipeline hubs in California, one connecting Long Beach and Los Angeles ports to the truck track at Carson Terminal, and the other servicing the San Francisco Bay Area, Sacramento, San Jose and Fresno. The southern and northern hubs have throughputs of up to 20,000 b/d and 21,000 b/d of blended diesel, respectively.

Mexican airline Viva Aerobus has signed a 1mn litre SAF supply agreement with Neste, to supply its Los Angeles-Mexico City and Los Angeles-Monterrey routes, starting from the second half of 2023.

Air Canada has agreed to purchase 2.5mn USG of SAF from Neste to be used in flights from San Francisco International.

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South America

Petrobras plans to produce its R5 diesel, a blend of conventional diesel with 5pc RD from SBO, in June at the 178,000 b/d Presidente Bernardes refinery in Cubatao, Sao Paulo, Brazil.

Brazilian refiner Acelen plans to expand renewable fuels production at its 333,000 b/d Mataripe refinery, aiming for 20,000 b/d in renewables output by 2026.

Ecopetrol is assessing pilot projects to produce SAF and HVO, scheduled to start in the second quarter of 2024 and operate from its 200,000 b/d refinery in Cartagena, Colombia.

Colombia's Bio D plans to start producing SAF by 2028 to supply Bogota airport, with a projected output of 50mn USG in the first year. The company is looking to build a $700mn biorefinery to produce SAF based on agricultural residuals from grasslands, palm oil, coffee and eucalyptus farming.

Energy conglomerate Ultrapar acquired 50pc of Opla, the largest independent ethanol terminal in Brazil, located in Paulinia, Sao Paulo state. Opla has a static tank capacity of 180mn l (1.1mn bl) and offers integrated storage and logistics solutions through rail, pipeline, and road. The terminal is jointly controlled with BP Biofuels Brazil Investments.

Portugal-based refiner Petrogal is leading an e-SAF production consortium comprised of Coppe, an engineering research centre at public university UFRJ, research company Embrapii and BNDES. The group have secured R21.3mn ($4.1mn) to spend on an e-SAF pilot plant using CO_2 and hydrogen as feedstocks.

Asia-Pacific

Shell has cancelled plans to set up a biofuel unit and a Group 2 base oil plant in Singapore. The biofuel unit was planned to produce 550,000 t/yr of SAF, HVO and renewable chemicals.

Japanese restaurant chain Food & Life has signed an agreement to supply 900,000 l/yr of UCO to a joint venture between engineering firm JGC, biodiesel producer Revo International and SAF joint venture Saffaire Sky Energy. The joint venture plans to produce 30,000 kilolitres/yr of SAF at Cosmo's Sakai plant in the Osaka prefecture, with start-up targeted for 2024-25.

A Japanese cross-industry group that includes JGC, refiner Cosmo Oil, All Nippon Airways, Japan Airlines and local governments, has launched a project to encourage domestic UCO recycling and increase the sourcing of UCO from households for domestic SAF production.

Universal Biofuels was selected to supply 8.5mn/USG of biodiesel to three Indian government-controlled oil marketing companies over the current quarter.

Idemitsu Global has agreed to co-invest in HIF e-fuel plants and supply recycled CO_2 from Japan to be used for the production of e-fuels.

French aerospace manufacturer Airbus and state-owned China National Aviation Fuel have signed an initial agreement to diversify supply sources for SAF production. Airbus targets blending 10pc SAF in jet fuel supplied by CNAF for its delivery flights by 2030.

Argus *Biofuels Outlook* is published by Argus Media group

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ISSN: 2752-6976

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