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Issue 25-01
Friday
10 January 2025

Argus Biofuels Outlook

Overview

European biofuel prices contracted in December on the back of lower feedstock costs and weaker demand, but also returning to where they were before the HVO supply crunch in mid-November. Lower Ucome prices have closed the biodiesel and UCO arbitrage between China and Europe, but a record volume of UCO should land imminently. This should lead to UCO prices retreating back from recent 19-month highs, to be more in line with the vegoil complex, or to European biofuel prices firming to secure feedstock imports.

The Europe-Asia-Pacific market dynamics in the biofuel space have shifted as a result of firm palm oil prices and China's removal of its UCO export tax rebate, which has further muddied the market outlook. Ucome fob China prices are too high to be economical in Europe, but there is no room to drop prices as the spread between Ucome and UCO has shrunk in recent weeks.

In the US, short-term guidance on the 45Z tax credit is rumoured to be set to be released hours after the publication of this issue, but there will certainly be points that will need further debate and clarity, and a lot will likely fall into the hands of the incoming administration that will have to finalise the ruling and solve many of the unanswered questions. For now, our price forecasts assume the effective removal of the $1/USG BTC.

Rising corn-ethanol production has kept Brazilian prices competitive, even supporting a year-on-year rise in ethanol sales despite the start of the inter-harvest period.

Key biofuel prices, prompt

	Nov 24	Dec 24	Jan 25e	Feb 25e
Europe				*$/t*
RED FAME 0°C CFPP fob ARA	1,260	1,199	1,152	1,191
RED Rapeseed OME fob ARA	1,356	1,281	1,242	1,271
RED UCOME fob ARA	1,423	1,413	1,357	1,394
RED HVO fob ARA (Class I)	1,693	1,633	1,640	1,679
RED HVO fob ARA (Class II)	2,092	1,851	1,823	1,866
SAF fob ARA (Class II)	2,083	2,009	1,859	1,903
Bionaphtha fob ARA	1,606	1,555	1,607	1,615
UCO cif ARA	1,010	1,059	1,031	1,004
Ethanol Regular fob ARA	903	879	935	948
US (biofuels)				*¢/USG*
Ethanol Chicago	162	161	169	174
Ethanol USGC	175	175	183	188
B100 Chicago	432	407	315	329
R100 (UCO) del California	554	537	475	483
US feedstocks (US Gulf coast del rail)				*¢/lb*
Soybean oil crude degummed	49	44	43	44
Tallow bleached fancy	45	45	44	45
UCO	45	45	44	44
South America				*$/t*
Anhydrous fob Santos	612	611	646	685
Asia-Pacific				*$/t*
RED HVO Class II fob Singapore	2,019	1,777	1,746	1,790
UCO fob China	859	899	955	933
RED Ucome fob China	993	1,041	1,032	1,002

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Summary

This month

Prices fell across biofuel grades in December as biodiesel prices tracked falling vegetable oil prices, hydrotreated vegetable oil (HVO) prices eased from highs in November, and ethanol prices were dragged by low gasoline values and waning demand. European biodiesel and HVO demand is expected to have fallen in the fourth quarter of 2024 on the back of excess German compliance tickets and weaker diesel demand.

Next month

Biodiesel and HVO prices are expected to ease in January as feedstock prices continue to come down. Large volumes of used cooking oil (UCO) deliveries are expected in January, having left China just before the 1 December export tax rebate cancellation, which should help ease UCO prices. The ReFuelEU Aviation and UK sustainable aviation fuel (SAF) mandates came into force on 1 January, requiring 2pc of jet fuel supply to be SAF. RED II and RED III include a 1pc sub-target for advanced biofuels in 2025, which most member states comply with, lifting advanced biofuel demand this year.

We have revised our European demand outlook for 2025 as we recalibrated expectations around RED III transpositions by member states this year, which are (in theory) due by May 2025. The likely delay to transpositions and resulting lower ambitions for 2025 have especially impacted our HVO demand forecast, as the product is the marginal litre to meet obligations in most countries. We still expect 2025 demand to surpass 2024 volumes on the back of slightly raised targets.

3-6 months ahead

With China cancelling the UCO export tax rebate and Indonesia putting limits on feedstock exports, Europe could face a crunch in UCO supply towards the end of the first quarter, which will widen the spread between UCO methyl ester (Ucome) and crop-based biodiesels. We expect advanced biodiesel consumption to return as German obligated parties look to meet their 2025 obligation, supported by no ticket carryover and higher ticket prices. We hope to have more clarity on how the SAF market will develop after the first few months of the year, with different actors led by different motives to uplift SAF, as fuel suppliers follow ReFuelEU Aviation to meet targets, member states aim for RED III targets and airlines hope to reduce their EU ETS bill.

6-12 months forward

The previously-anticipated jump in HVO demand is likely to be more muted, but an uplift in 2026 is still expected. Several countries will still be discussing their transposition of RED III beyond the May 2025 deadline, but some will implement the new directive guidelines by year-end, with targets starting in the following year to achieve the headline figure of 29pc renewables across transport modes by 2030.

Regulation

Biofuels mandates increase in January ahead of RED III

Despite RED III being agreed in October 2023 with a transposition deadline of May 2025, so far only the Netherlands has published a draft law for transposing the new regulation. Regulators have likely been focused on the RED III transposition and implementing the ReFuelEU Aviation and FuelEU Maritime rules.

But biofuel blending targets are still increasing in many European countries as part of existing regulations under RED II, although for some countries (Finland, Ireland, Poland, and Hungary) the increased targets have only been confirmed over the past few weeks.

Energy content-based targets are the most common form of compliance across Europe and the following changes have come into effect:

- Netherlands: from 28.4pc to 29.4pc
- Ireland: from 23pc to 25pc, including the introduction of a specific 20pc biodiesel target
- Finland: from 13.5pc to 16.5pc
- Portugal: from 11.5pc to 13pc
- Belgium: from 10.75pc to 12.2pc (including double-counting)
- Italy: from 10.8pc to 11.7pc, including a target from 1pc to 3pc for gasoline
- Spain: from 11pc to 11.5pc
- Slovenia: from 10.6pc to 11.2pc
- France: from 9.2pc to 9.4pc for diesel, from 9.9pc to 10.5pc for gasoline
- Poland: from 9.1pc to 9.2pc
- Slovakia: from 8.8pc to 9.2pc
- Hungary: from 8.4pc to 8.9pc (pending approval)
- Luxembourg: from 7.7pc to 8.6pc

The following changes have taken place in countries with greenhouse gas (GHG) based targets:

- Germany: from 9.35pc to 10.6pc
- Austria: from 7pc to 7.5pc
- Denmark: from 3.4pc to 5.2pc

Finally, for countries using volumetric targets, the following changes have come into effect:

- UK: from 14.942pc to 15.673pc
- Lithuania: from 7.8pc to 8.6pc

Most countries have also increased their sub-mandates for "advanced biofuels" listed under Annex IX part A of the directive to the following:

- 4.9pc in Italy
- 3.6pc in the Netherlands
- 3pc in Finland
- 1.5pc in Ireland
- 1.05pc in Slovakia
- 1.07pc in Czech Republic
- 1pc in Austria, Estonia, France, Hungary, Latvia, Lithuania, Romania, Slovenia, Spain
- 0.7pc in Germany
- 0.5pc in Belgium

Two other advanced sub-mandates have also risen – Norway's advanced biofuel target (which encompasses modified versions of Annex IX A and Annex IX B lists) has risen from 12.5pc to 14.5pc, Ireland and Romania's Part B caps have both risen from 1.7pc to 2pc, and the UK's development fuel target has risen from 1.379pc to 1.619pc.

Further details on individual country legislation can be found by visiting here.

Finland confirms 2025-30 biofuels mandate

The Finnish government has confirmed it will proceed with the new biofuel blending targets first proposed in July 2024. In April 2022, the government reduced the blending target from 18pc to 12pc as a result of the Ukraine war, rising to 13.5pc in 2023.

Starting this month, the target will increase to 16.5pc of biofuels, then 19.5pc in 2026, 22.5pc in 2027 and up to 31pc in 2028-30. The minimum share obligation for renewable fuels of non-biological origin (RFNBO) will be 1.5pc in 2028 and 2029, and will increase to 4pc in 2030.

Poland approves 2025-30 mandates

The Polish government on 7 January approved new biofuel blending targets for 2025-30, as part of finalising the transposition of RED II. The minimum share of renewable energy in transport was set at 9.1pc in 2024 and the previous legislation had no scheduled increase for the target. To become binding law, the bill needs to be approved by parliament and signed by the president. The government expects the regulation will come into force on 1 April.

The 2025 target has now been set at 9.2pc, rising to 10pc in 2026-29 and 14.9pc in 2030. The mandate can be fulfilled by use of biofuels as well as renewable electricity, the government said.

The new target of 14.9pc in 2030 is the final RED II target, originally agreed by the EU in 2019, and falls short of the new 29pc renewable energy target outlined in RED III, which has a transposition deadline of May this year.

Ireland passes 2025 target, eases high-ILUC cap

Ireland in December approved its 2025 budget, which included an increase to its renewable transport fuel obligation from 23pc to 25pc energy content, effective 1 January 2025. The advanced biofuel obligation remains unchanged at 1.5pc, but the crop cap was increased from 2.3pc to 2.4pc and the cap on feedstocks with a high risk of indirect land use change (high-ILUC) was eased from 90pc to 75pc.

German industries call for higher targets

In early December, 17 industry associations, including those representing the biodiesel and ethanol sectors, as well as the mineral oil association Uniti, released a letter demanding German lawmakers increase the countries 2030 GHG reduction target from 25.1pc to 40pc, as part of the revision to the Federal Emission Control Act during the transposition of RED III.

The German government confirmed it would not transpose RED III before its upcoming elections in February. The country's current 2030 target of a 25.1pc GHG reduction is higher than the 14pc target outlined in RED III.

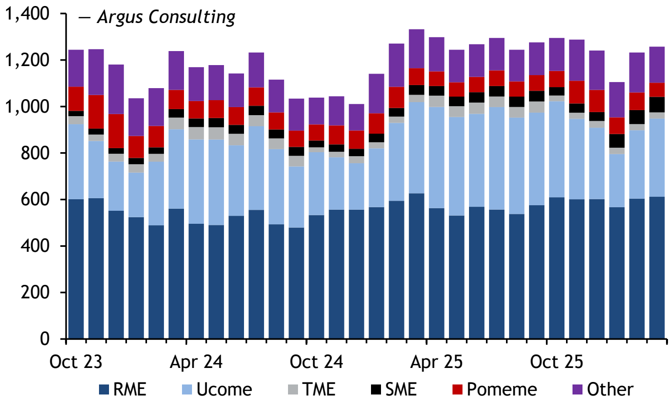
Demand

Biodiesel

Demand falls in fourth quarter

We expect biodiesel demand to have increased slightly in October to 1.04bn l, although we are still waiting for some

European biodiesel demand *mn litres*



key markets to report data for the month. We expect biodiesel demand in November to have increased by around 1pc, followed by a 3pc drop in consumption in December, tracking seasonally slower diesel consumption. But this is expected to leave biodiesel demand in the fourth quarter 9pc short on the previous quarter, driven by lower diesel demand at the end of the year and depressed demand in Germany as obligated parties are understood to have used up tickets that they could not carry into 2025.

We expect rapeseed methyl ester (RME) consumption to have increased 8pc in the fourth quarter over the previous quarter, but used cooking oil methyl ester (Ucome) consumption to have dropped 27pc, with demand for most other grades also losing ground. Higher RME consumption follows the typical seasonal uptick for the grade, which has a lower CFPP, a requirement for blending in cold weather. Ucome demand is expected to have fallen following weaker imports from China as a result of anti-dumping duties, with demand for advanced biodiesel having been dragged down by a weaker German market.

After a year to forget, policy will shape 2025

Last year was difficult for the European biodiesel industry, with rapidly rising imports from China into European markets weighing on prices and demand for domestic product. With growing volumes of double-counted biodiesel flowing into Europe, demand for biodiesel fell despite higher mandates, with 2024 demand expected at 13.3bn l compared with 15.0bn l and 14.8bn l in 2022 and 2023, respectively. The large import flows, alongside associated allegations of fraud and dumping, have shaped much of the debate around European biofuels over the past two years. But a number of key policy changes have shifted the narrative to a more positive outlook for 2025.

The European Commission's provisional anti-dumping duties on China-origin biodiesel and hydrotreated vegetable oil (HVO) introduced on 16 August 2024 have contributed to stemming the volumes of shipments into European ports. The average monthly volumes of shipments from China were 150,000t in 2022, 141,000t in 2023, and 102,000t in January-July 2024, but have now fallen to an average 57,000t in August-December. The provisional duties will become definitive from 14 February, including some slight adjustments to the duty levels, and will be in force for five years from then on, with a review requestable after the first year.

Another policy change that will impact European markets was the Dutch and German decisions to scale back the carryovers of tickets into 2025. Although physical biofuel demand in 2024 was suppressed by the high availability of cheap tickets, the absence of ticket carryovers from previous years will allow the market in 2025 to start with a blank slate. As a result, we expect biodiesel demand in 2025 to increase to 15.2bn l, just above the demand in 2022 and 2023.

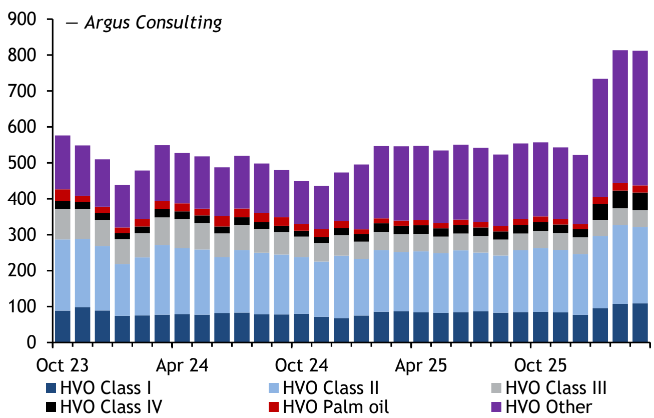
We do expect that German obligated parties will return to sourcing advanced biodiesel as the most cost-effective compliance option. When the anti-dumping duties came into force, there was a sense that advanced feedstocks from China might get redirected from domestic biodiesel production to biodiesel producers in other regions. But the ramp-up in advanced biodiesel production outside China has not emerged, which could suggest a return of flows from China amid strong German demand and firm European prices.

HVO

Demand in 4Q24 eases on supply crunch

We expect HVO demand to have dropped 6pc in October to 436mn l, before dropping another 3pc in November. A

European HVO demand *mn litres*



turnaround at Eni's Gela refinery is likely to have contributed to lower demand in Italy and Europe. Further HVO refinery shutdowns occurred at the start of November, meaning that demand across Europe fell further on the month. Low imports in the preceding months meant that stocks were too low to make up for the lack of domestic production. We expect demand to have recovered in December, picking up by 8pc to 473mn l, as European biorefineries started producing again to meet domestic demand.

Demand to lift despite transposition headaches

We expect demand to pick up in 2025 to 6.5mn l from 5.9mn l in 2024. Higher mandates across the bloc will lift the required renewable energy in transport amid limited potential to further increase the contribution of biodiesel and ethanol. We expect overall diesel and gasoline consumption in 2025 to be around 2pc down on 2024 demand, therefore reducing the potential contribution of biofuels limited by a blend wall. Therefore, HVO becomes the logical next option without blending limitation to reach the higher targets.

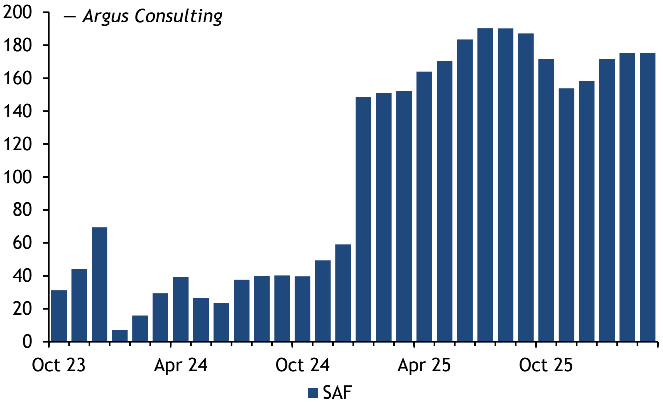
We have revised down our forecast for 2025 as we have recalibrated expectations for member state's transpositions of RED III. Many member states currently have RED II-based targets in place for 2025 onwards, but some countries are expected to put forward their transpositions of RED III this year. Some key changes we expect could include higher targets from 2026, and adoption of a target denominator that includes all transport modes and contribution of electric vehicles, where not already implemented. We have eased the transition to RED III-based mandates in our models, reflecting a more gradual transposition timeline, including when a switch to a denominator including all modes might happen. This means that our HVO demand forecast for member states with larger maritime fuel pools has been eased for 2025 with a sharper rise expected in 2026.

The timelines are uncertain, but what is clear is that HVO will have a growing role in 2025 and onwards as the fundamentals driving HVO demand will remain, regardless of how and when RED III transpositions are carried out. The Netherlands is the first country to put forward a full plan on how to transpose RED III, which now encompasses aviation and maritime, without interfering with the sector-specific ReFuelEU Aviation and FuelEU Maritime mandates. But member states' historical success rates in transposing RED iterations in full and in time are quite low, and we certainly do not expect all 27 transpositions to be completed by the May 2025 deadline.

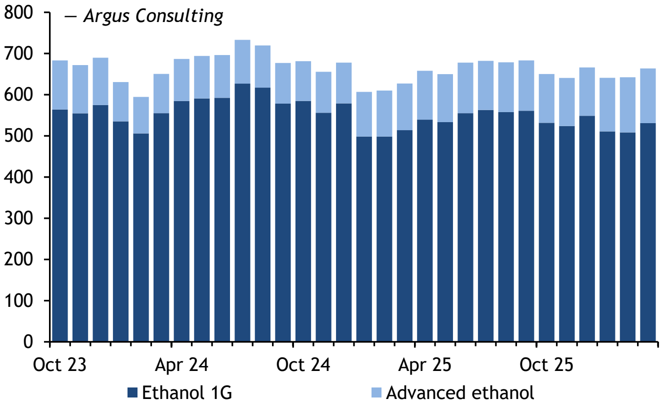
European demand outlook *mn litres*

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Biodiesel											
Pomeme	69	81	79	87	91	72	251	191	200	262	208
RME	533	556	556	567	594	627	1,788	1,663	1,670	1,813	1,782
SME	29	32	32	37	37	43	117	128	136	115	186
TME	21	24	30	26	27	31	84	143	139	79	80
Ucome	270	225	200	253	335	392	981	1,258	1,253	1,066	859
Other	115	125	114	170	186	167	523	427	417	488	478
Total	**1,038**	**1,044**	**1,011**	**1,141**	**1,270**	**1,332**	**3,743**	**3,810**	**3,815**	**3,823**	**3,595**
HVO											
HVO Class I	80	71	68	75	86	87	248	251	254	246	312
HVO Class II	158	154	174	158	172	165	494	507	495	521	633
HVO Class III	57	52	57	48	50	49	148	142	137	141	138
HVO Class IV	16	17	20	21	24	24	69	71	70	71	143
HVO Palm oil	19	22	19	13	14	14	41	44	47	45	60
Other	119	121	136	180	201	207	588	617	615	598	1,073
Total	**449**	**436**	**473**	**495**	**547**	**546**	**1,588**	**1,633**	**1,619**	**1,622**	**2,359**
SAF											
SAF Class II	40	49	59	149	151	152	452	518	568	484	522
Ethanol											
Ethanol 1G	585	556	579	498	499	514	1,511	1,628	1,682	1,604	1,550
Advanced ethanol	97	100	99	108	112	113	333	358	362	353	397
Total	**681**	**656**	**678**	**607**	**610**	**627**	**1,844**	**1,986**	**2,044**	**1,957**	**1,947**
Grand Total	**2,169**	**2,136**	**2,161**	**2,243**	**2,427**	**2,505**	**7,176**	**7,429**	**7,478**	**7,403**	**7,901**

European SAF demand *mn litres*



European ethanol demand *mn litres*



SAF

Mandates take off while uncertainties remain

The ReFuelEU Aviation and UK sustainable aviation fuel (SAF) mandates came into force on 1 January 2025. Fuel suppliers will now have to ensure that 2pc of the jet fuel they supply in 2025 is SAF. We expect that European SAF demand for 2025 will be around 2.0mn l.

The flexibility mechanisms in the ReFuelEU Aviation legislation could mean that SAF supply will be concentrated at specific airports serviced by specific fuel suppliers, with other airports and suppliers relying on virtual SAF certificate purchases rather than physical SAF deliveries. But how exactly this will be facilitated in practice is uncertain. Therefore, we currently forecast European SAF demand, rather than country-level SAF demand for Europe.

Furthermore, the interaction of ReFuelEU Aviation with RED III and the EU emissions trading system (ETS) could cause headaches as different parties follow different policies. Fuel suppliers will meet the ReFuelEU obligation regardless of where they supply SAF, but member states may favour uplift at their airports so that SAF contributes to their overall transport targets and airlines will favour physical deliveries to their hubs so they can uplift SAF to reduce their EU ETS bill. Regional, airport level and airline voluntary targets and willingness to pay premiums for SAF could further complicate the picture for jet fuel suppliers as they grapple with identifying the most favourable approach to meeting their obligation.

Ethanol

Sub-targets to boost advanced ethanol demand

Ethanol demand in October is expected to be up 1pc to 681mn l. We expect consumption to have dropped 4pc in November, mirroring gasoline demand before gaining 3pc in December. We expect demand in January to be down with seasonally lower gasoline consumption at the start of the year.

We expect demand for advanced ethanol to pick up in 2025 as most member states have legislated an increase in their advanced biofuel sub-target for 2025. The sub-target increases vary in ambition but most aim for 1pc, in line with the RED II sub-target for 2025, which has been carried over into RED III.

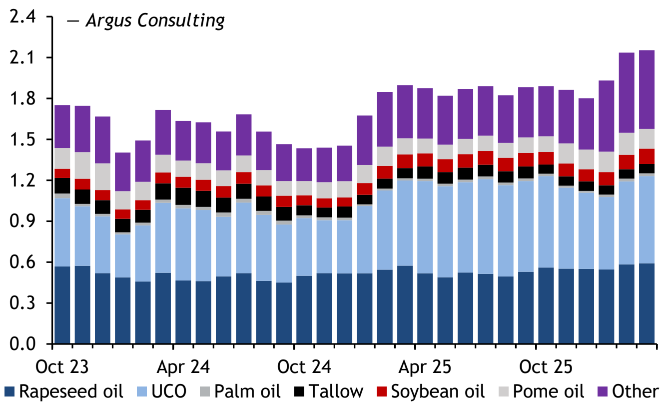
The Dutch and German ticket carryover restrictions have helped boost ticket prices in both countries. Higher ticket prices tend to support the supply of advanced biofuels as their premium over non-double-counted biofuels rises, therefore making them more economically viable to blend.

Feedstocks

Duties, cancelled rebates, but no change?

Going into 2025, we expect the requirement for feedstocks for European biofuels demand to increase. Higher targets, unchanged crop and Annex IX part B caps and higher

Biodiesel and HVO feedstock demand *mn t*



advanced biofuel sub-targets will require more advanced biofuels for the road sector. But, as not all countries have hit their crop and conventional waste caps yet, we do expect demand for these feedstocks to also rise. An uncapped IX B allowance for SAF consumption to meet the ReFuelEU Aviation mandate will also increase European demand for UCO going into 2025.

What is less certain is the origin of the advanced biofuels and UCO-based biofuels. When the European Commission's anti-dumping duties were announced, there was a sense that pre-treated feedstocks, rather than biofuels, might start flowing from China to Europe. But this flow has not yet emerged, and China's removal of the 13pc tax rebate on UCO exports from 1 December will likely dampen European UCO imports from China. A bump of UCO shipments is expected to arrive in Europe in January from cargo that left China just before the 1 December deadline and avoided the tax rebate removal. But much of China's feedstock is likely to be retained for domestic use, with an eye set on SAF production to meet the ReFuelEU Aviation mandate, as SAF is not in the scope of the anti-dumping duties on biodiesel and HVO.

Regardless of the tax rebate removal, European imports of Chinese UCO were lower in 2024 than in previous years owing to elevated freight costs after attacks on shipping through the Red Sea. And Chinese UCO exports to the US have been more favourable. Some uncertainty in US markets amid the transition from the Blender's Tax Credit (BTC) to the 45Z tax credit and potential trade tariffs are starting to slow trade across the Pacific, possibly opening up more feedstock flows into Europe.

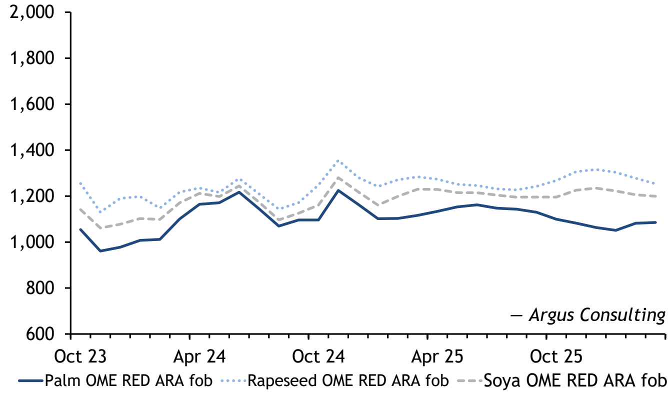
Prices

Biodiesel

Vegoils drag down crop biodiesel prices

Crop-based biodiesel prices fell across the board in December, with RME prices falling 5.5pc to $1,281/t, SME 4.8pc to $1,219/t and Fame 0 dropping 4.8pc to $1,199/t. As in the prior month, biodiesel prices reflected changes in vegoil prices. Rapeseed oil and soybean oil prices had hit an 11-month high in November, pushing crop-based biodiesel prices up. As vegoil prices declined last month, prices for crop biodiesel grades reacted in the same direction and went down on the month, but not by the same extent as their respective feedstocks, which allowed producers' margins to recover after being squeezed in November.

European crop-based biodiesel prices *$/t*



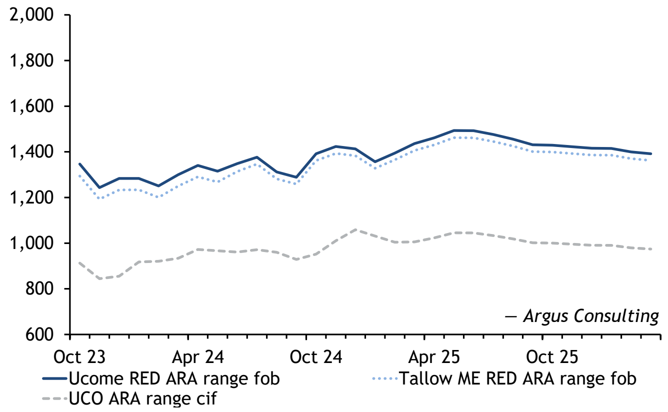
December prices for crop-based biodiesel grades have remained nonetheless above October averages, and we expect prices to continue easing in January, with RME prices shedding around 3pc on the month, again tracking the expected decline in rapeseed oil prices.

UCO prices up, Ucome down

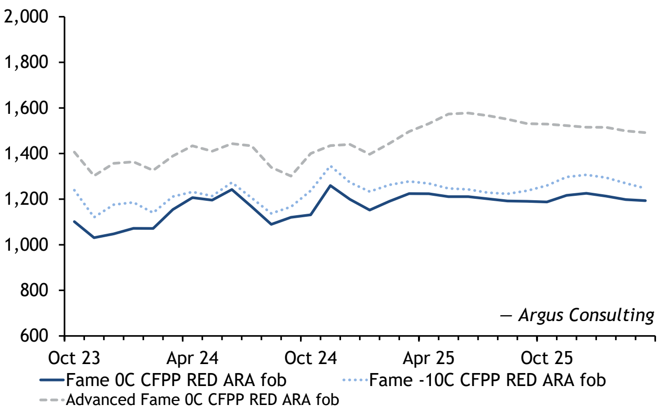
Ucome and tallow oil methyl ester (TME) prices eased by 0.7pc to $1,413/t and $1,383/t in December. Prices for waste-based biodiesel grades declined, but feedstock prices went up in December, with UCO cif prices increasing by 4.8pc, tallow (cat 3) prices by 8.9pc and Pome oil by 5.9pc. The firming prices for waste-based feedstocks came as a delayed reaction to the rising vegoil prices in November, but were equally supported by China's decision to halt its export tax rebate for UCO from 1 December, therefore lifting the cost to European biofuel producers and closing the arbitrage for shipping UCO from China to Europe as of early January.

Large volumes of UCO are expected to arrive in Europe in January as Chinese collectors cleared stock prior to the 1 December tax rebate cancellation, which we expect will help

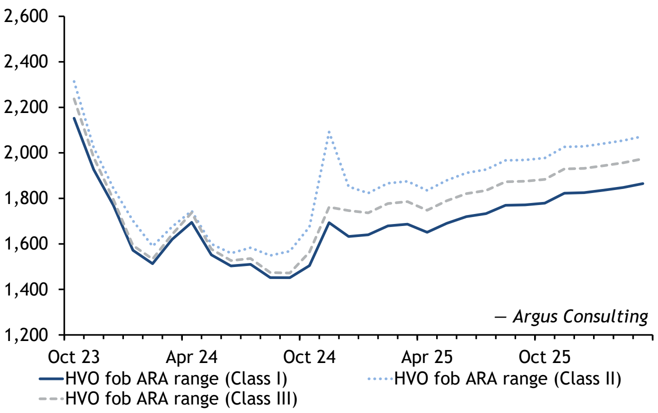
European waste-based biodiesel prices *$/t*



European FAME prices *$/t*



European HVO prices *$/t*



ease UCO and Ucome prices. But tightness in Ucome supply might occur in the following months as both the UCO and the Ucome arbitrage from China have been closed since early December. As European Ucome prices firm towards February, this could once again unlock the flow from China, but this will depend on whether European obligated parties find themselves short without Chinese Ucome.

Tickets return to support advanced premium

The only biodiesel grade posting a monthly increase in prices in December was Advanced Fame 0, moving up slightly by 0.4pc to $1,440/t as the premium to Ucome widened to $27/t, after being virtually non-existent between September and November. Low premiums across this period reflected low ticket prices in Germany lowering demand for physical volumes. But ticket prices are already far higher in January, with the "other" GHG ticket pricing at €72/tCO_2 ($74/t$CO_2$) for the 2024 obligation, and at €142/tCO2 for 2025. This has helped lift Advanced Fame 0 prices in December, and we expect its premium to Ucome to grow to $40/t in January, and for the gap to continue widening throughout the year.

We expect all biodiesel prices to ease in January as feedstock prices soften and European stocks remain high. China's UCO exports to Europe reached an all-time high in November, which will be landing in the coming weeks and should also help ease prices. But from later in the quarter, we expect prices will firm up, with waste-based biodiesel gaining on the crop-based grades amid tighter UCO availability later in the year and higher ticket prices.

HVO

Prices retreat from November spike

Hydrotreated vegetable oil prices fell across the board in December, with UCO-based HVO (Class II) shedding 11pc to $1,851/t. The drop off is mainly a result of the high November average value that was pushed by a price spike, which was 25pc up on the previous month. December prices remain well above the prices in previous months throughout 2024. Although the price hikes in November were not as great for the other grades, with crop-based HVO (Class I) and tallow-based HVO (Class III) rising 13pc, the prices also did not drop off as much in December, losing 3.6pc and 0.9pc, respectively.

So where are we after the ups and downs of the last two months? While prices have fallen in December, they remain elevated compared with October. HVO production resumed, easing the supply crunch that contributed to the November price spike. But some of the demand pressure remains as obligated parties in the Netherlands continued to buy double-counting HVO to meet the 2024 obligation. And overall demand for HVO is expected to rise in 2025, which should provide HVO prices with enough support to stay above the lows of 2024.

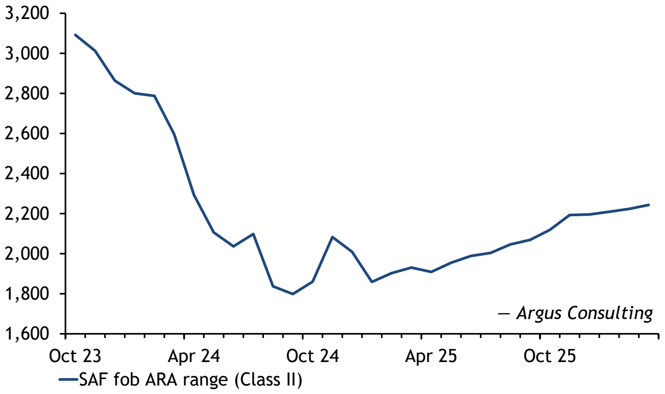
After all the volatility in November and December, we do expect that the movement was not completely disconnected from fundamentals, with higher HVO demand in key markets and across the bloc likely to support stronger HVO prices. We expect HVO prices to ease slightly in January but regain some value in February.

SAF

Could duties shift the balance?

SAF prices fell in December, down 3.5pc to $2,009/t, re-establishing a $158/t premium over HVO class II. But the spread narrowed again in mid-December and moved to just $18/t on 8 January, leading to the question whether the two prices could invert once again.

European SAF prices *$/t*



Fundamentally, the two prices should balance with SAF at a premium to HVO, given the additional cost of producing SAF and the flexibility of switching to HVO production when HVO prices surpass that of SAF. But this signal gets scrambled on the way to China as the anti-dumping duties apply to HVO and not SAF. This means that Chinese hydrotreaters may continue producing and exporting SAF to Europe even when the European HVO price is higher than the SAF price. This would imply that European producers and other regions without duties, for example Singapore, will take on a larger share of HVO supply to Europe, therefore leaving some the SAF market to Chinese producers.

For now, we expect SAF prices to remain at a premium to HVO, albeit a smaller one than previously seen as we expect prices to fall in January. Prices are set to recover some value for the rest of the first quarter, but we do not foresee a significant bump in the SAF-HVO spread. Whether or not the prices could invert remains uncertain, but we expect that there is enough capacity outside China to retain the fundamental balance between the two prices in the medium term, even if short-term inversions could continue to happen following imbalances.

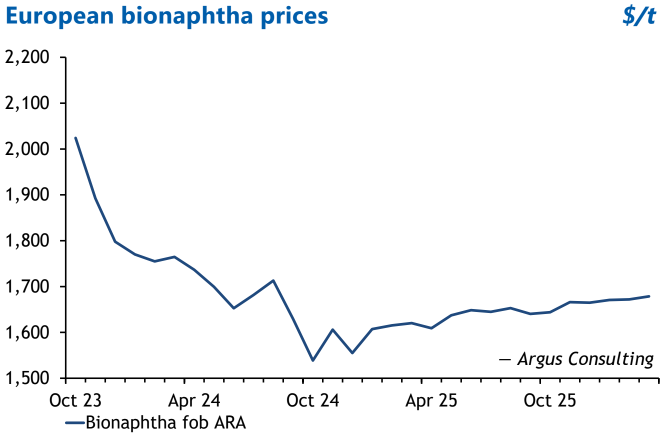
Bionaphtha

Bionaphtha prices remain afloat

Bionaphtha prices fell 3.2pc in December to $1,555/t, closing out 2024 with a price 14pc lower than at the end of 2023. The bionaphtha price has largely remained unfazed by the volatility seen for the other hydrotreatment products recently and has stayed within a $200/t price range for the past nine

European price outlook *$/t*

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Crop-based biodiesel											
FAME 0 fob ARA	1,131	1,260	1,199	1,152	1,191	1,224	1,189	1,215	1,195	1,210	1,201
FAME -10 fob ARA	1,237	1,346	1,273	1,233	1,263	1,278	1,258	1,253	1,229	1,288	1,270
Advanced FAME 0 fob ARA	1,400	1,435	1,440	1,397	1,444	1,496	1,446	1,561	1,549	1,522	1,502
PME fob ARA	1,096	1,225	1,164	1,102	1,103	1,116	1,107	1,150	1,140	1,082	1,073
RME fob ARA	1,249	1,356	1,281	1,242	1,271	1,284	1,265	1,257	1,233	1,296	1,278
SME fob ARA	1,161	1,280	1,219	1,161	1,199	1,230	1,196	1,219	1,198	1,218	1,209
Waste-based biodiesel											
UCOME fob ARA	1,392	1,423	1,413	1,357	1,394	1,436	1,396	1,482	1,454	1,422	1,402
TME fob ARA	1,362	1,393	1,383	1,328	1,365	1,406	1,366	1,451	1,424	1,393	1,373
UCO cif ARA	952	1,010	1,059	1,031	1,004	1,005	1,013	1,038	1,018	996	981
HVO											
HVO Class I fob ARA	1,504	1,693	1,633	1,640	1,679	1,687	1,669	1,687	1,758	1,809	1,850
HVO Class II fob ARA	1,675	2,092	1,851	1,823	1,866	1,875	1,855	1,875	1,954	2,011	2,056
HVO Class III fob ARA	1,564	1,762	1,746	1,736	1,777	1,786	1,766	1,786	1,861	1,915	1,958
SAF											
SAF fob ARA	1,860	2,083	2,009	1,859	1,903	1,931	1,898	1,951	2,039	2,169	2,225
Bionaphtha											
Bionaphtha fob ARA	1,539	1,606	1,555	1,607	1,615	1,620	1,614	1,632	1,646	1,658	1,674
Ethanol											
Ethanol Regular fob ARA	902	903	879	935	948	982	955	1,067	1,016	949	952
Ethanol Premium fob ARA	921	927	902	958	970	1,005	978	1,090	1,039	972	975
ETBE fob Rotterdam	1,094	1,057	1,059	1,041	1,070	1,084	1,065	1,155	1,167	1,039	1,029

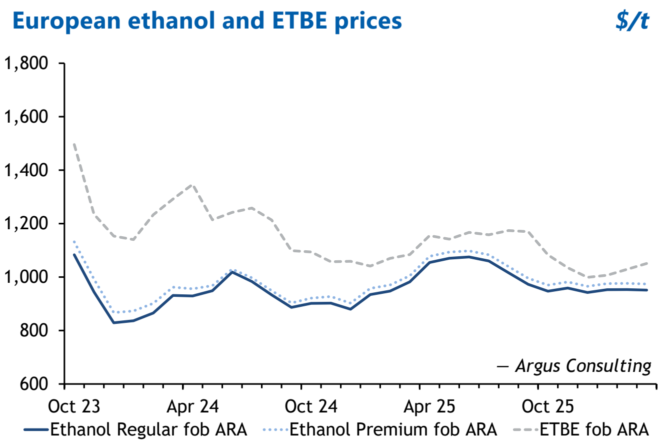


months. As bionaphtha demand is largely voluntary, it is not subject to price swings following policy changes. It might play a role in a policy framework encouraging more sustainable chemicals and plastics production in the future, but for now, bionaphtha posts a price tag that is almost triple that of fossil naphtha, which chemicals producers will only take on if they have customers willing to pay a premium for the resulting "sustainable" product. Until industry-wide targets are in place, demand will remain voluntary and supply will be limited, because hydrotreatment plants will not have an incentive to capture and sell the co-product.

Ethanol and ETBE

Ethanol prices low on weak gasoline

Regular ethanol prices lost 2.6pc in December to $879/t, with premium ethanol dropping 2.7pc to $902/t, despite gasoline prices staying flat on the month. This puts ethanol at its lowest price since February 2024, in part because of the very low gasoline prices that have stayed flat on the month at $689/t, their lowest monthly average since May 2021 when product prices recovered from pandemic levels. We expect ethanol prices to rebound in January, up around 6pc on the month, buoyed by a stronger gasoline price and increasing feedstock costs, especially corn.



The ETBE price stayed flat in December at $1,059/t, rebuilding some premium to ethanol. ETBE prices are typically softer over winter because of slower ETBE demand. ETBE consumption and prices usually rise in the summer months owing to good vapour pressure properties when blended into gasoline.

Fundamentals

Agriculture

Rapeseed prices correct after November peak

Rapeseed oil (RSO) fob Dutch Mill reached a two-year high in November which pushed up biodiesel prices. But the price dropped 12.4pc from the highs in November to 1 January. Tight crush margins in the EU rapeseed market have pushed crushing demand towards alternative oilseeds. The bloc's rapeseed crushing activity fell well below the 10-year range in November. Meanwhile, the region ramped up its imports and crushing of soybeans, which contributed to some demand rationing for EU rapeseed crushers. Rapeseed prices are forecast to remain stable at a relatively high level of around $540/t until March-April.

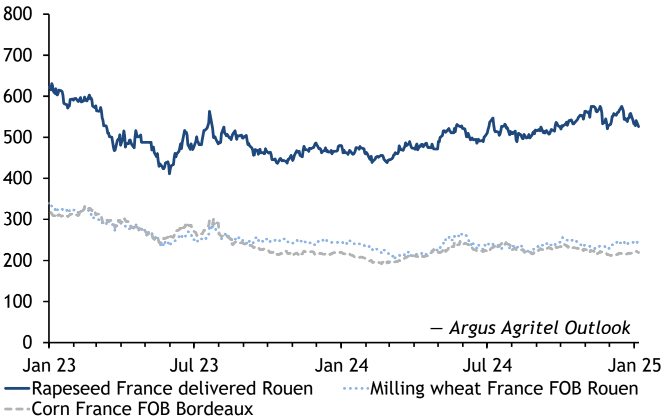
The lack of firmness in the vegetable oils market, particularly palm oil in Kuala Lumpur, is offsetting the firmness of meal values, an interesting shift in the market dynamics, as the risk premium on the meal market owing to the ongoing adverse weather conditions in South America is restricting supply. Soymeal prices are likely to be supported in the coming months, leading to higher meal values in Europe.

As we approach the new crop arrival in Europe during the July-August period, bearish pressure could emerge owing to the increase in rapeseed acreage in the EU compared with last year. With an expected above-average 2025 production, rapeseed prices could come under pressure during the harvest period, potentially dropping towards $500/t. The anticipated rebound in global oilseeds production in 2025 could cap the firmness of the complex if average yields materialise worldwide.

French wheat demand to draw down stocks

France's wheat exports to non-EU countries continued to lag in December as the country struggles to compete with lower-priced origins. Exports to non-EU destinations in the

Biofuel agricultural feedstock prices *$/t*



marketing year so far stand at 1.7mn t in December. But given France's low supply and tighter global export availability in January-June, the country should secure market shares later in the season. At the same time, delayed corn availability and some quality issues with the French corn crop have pushed more feed and industrial demand towards wheat. As a result, *Argus* expects the country's ending stocks to fall to 2.3mn t at the close of 2024-25.

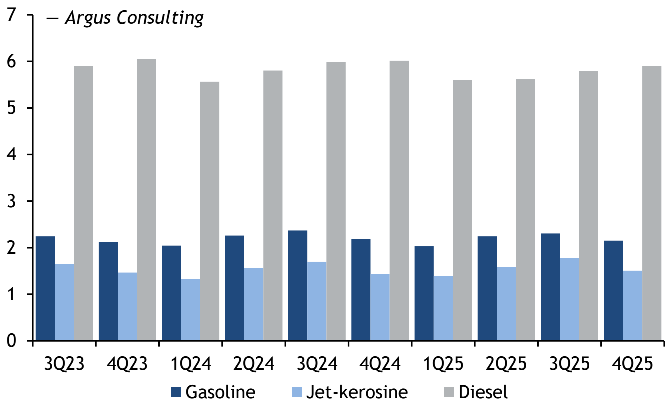
Fossil fuels

Tight supply partly offset by US deliveries

Diesel crack spreads in European markets strengthened in December as slowing diesel cargo arrivals coincided with restocking purchases, especially in Germany where buyers probably rushed to take in more supplies ahead of a levy change that took effect on 1 January. But this does not point to a recovery in demand, given the overall weakness in transportation and industrial demand.

Colder weather in Europe has supported demand for heating oil over recent weeks, but the impact of this appears to be limited because heating oil stocks in the region had gradually increased in the months prior. Supply is again a key factor of strength in Europe, as diesel cargo receipts fell by 170,000 b/d to less than 900,000 b/d in December, driven by a drop from Saudi Arabia and India. Tight supply was partly offset by more US deliveries in December, which accounted for nearly half of total imports. But heavy reliance on US volumes could extend current strength into January, as the US Gulf coast is experiencing a series of unexpected outages and maintenance that could result in a reduction in diesel output and exports in the coming weeks. This would prompt an improved east-west

European fuel demand *mn b/d*

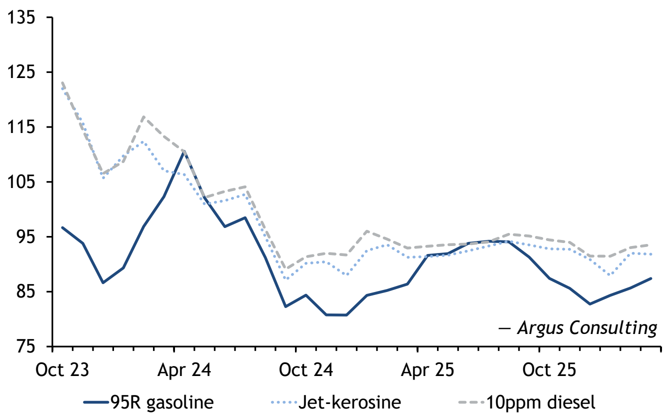


arbitrage through higher prices and cracks in Europe, in order to attract more cargoes from east of Suez.

Gasoline crack spreads were steady on the month in December. Strength on the US Gulf coast drove transatlantic flows, with loadings to the US from northwest Europe up 6pc on the month and 27pc on the year. This resulted in an unseasonal rise in cracks in northwest Europe, by $0.43/bl to average $6.96/bl despite weak regional demand. We now expect cracks to fall on high Amsterdam-Rotterdam-Antwerp (ARA) stocks and weak demand.

The northwest Europe jet fuel crack spread weakened to $14.17/bl in December from $16.19/bl in November as supply still outweighed demand. Jet fuel stocks in ARA fell to 6.8mn bl from 7.7mn bl in November, although this is still 1.1mn bl down on the year. The fall in stocks was driven by lower imports during unworkable arbitrage economics. East-west flows could resume this quarter, especially as Asia now looks amply supplied.

European fuel prices *$/bl*



NORTH AMERICA

Summary

This month

Guidance on the US' 45Z tax credit is yet to drop at the time of publication, and although release is thought to be imminent, it may not be the panacea the market is hoping for. The guidance may miss the window to be filed within the federal registry, which puts the onus on the incoming administration of Donald Trump to finalise the ruling, leaving a lot of unanswered questions. Lobbying could see portions of guidance getting re-tooled or put additional stipulations on foreign feedstocks, and the continued ambiguity could prolong the soap opera for weeks or months to come. The blender's tax credit (BTC) expired as of 31 December 2024, which scythes B100, R100 and SAF100 values and gives RIN prices a shot in the arm.

Next month

Biofuel producers could start ramping up output again should they gain enough confidence from the US Treasury release, although it will take weeks to regain full capacity.

RIN prices should then see support to make up for the lack of BTC income, with D4 credit prices forecast to hit a 14-month high of 75¢/RIN in February, and to develop a premium over D6 again, after 18 months of moving almost in lockstep.

3-6 months ahead

California Low Carbon Fuel Standard (LCFS) prices will see some uplift if the approved stricter decarbonisation targets pass review and are enacted from 1 April. We forecast LCFS credits to rise to around $100/t by July for the first time since May 2022, but a huge backlog of over 30mn credits in the credit bank may keep prices from running up too quickly.

6-12 months forward

Further questions include whether small refinery exemptions (SREs) resume under Trump, as during his first term, before being rejected under the Biden administration. Refineries processing less than 75,000 b/d of crude can request an exemption from Renewable Fuel Standard (RFS) targets if they can prove disproportionate economic hardship, and would be a drag on RIN prices should they become accepted again.

Renewable Volume Obligation (RVO) targets still have not been set for next year despite being due at the end of 2024, muddying the waters even more going into 2026.

Regulation

Market awaits guidance on 45Z

Federal guidance on the US Inflation Reduction Act's (IRA) 45Z production tax credit will be a lifeline for domestic renewable fuels producers and a key determinant of production splits from 2025 onward, with the largest awards currently earmarked for aviation fuels.

Although preliminary guidance and registration protocols were released earlier in 2024, the industry awaits the impending regulations that will replace the IRA's section 40B blender's tax credit (BTC). Preliminary guidance on the 45Z credit proposes aviation fuels earn $1.75/USG while the maximum for road fuels would reach only $1/USG — although we do not expect renewable diesel (RD) from currently used feedstocks such as used cooking oil (UCO) and tallow to achieve more than 50¢/USG.

Regardless of the short-term guidance on the application of the 45Z credit likely being released on 10 January, a lot will still fall under the next presidency. A Republican-controlled Congress will decide the fate of a federal incentive for low-carbon fuels, setting the stage for a lobbying battle that could make or break existing investment plans. President-elect Donald Trump has dismissed the Inflation Reduction Act as the "Green New Scam", and Republicans on Capitol Hill, who had no role in passing outgoing president Joe Biden's signature climate legislation, are keen to cut climate spending to offset the steep cost of extending tax cuts from Trump's first term.

Biofuels support is a less likely target for repeal than other climate policies, energy lobbyists say. But Republicans have already requested input on 45Z, signalling openness to changes. Republicans plan to use the reconciliation process, which enables them to avoid a Democratic filibuster in the Senate, to extend tax breaks that are scheduled to expire in 2025.

New Mexico sets 20pc LCFS target for 2030

New Mexico has published a draft ruling that the state's low-carbon fuel standard would begin in 2026 with annual reductions quickly accelerating in 2029. The state is planning for the programme to come into effect in 2026, with a proposed target of a 1.8pc reduction from a 2018 baseline. The reduction targets would accelerate to 6pc in 2028, 11pc in 2029 and 20pc in 2030.

New Mexico's proposal includes a "small deficit" deferral, allowing 5pc of a party's obligation to be carried forward to the next compliance year. Parties lacking credits to cover more than 5pc of their obligation would need to use a credit clearance market, similar to other LCFS programmes.

Regulators are taking comment on the draft Clean Transportation Fuel Program language until 17 January. The Climate Change Bureau held an in-person meeting on the proposal on 6 January and a virtual meeting on 10 January.

US biofuel groups sue to force 2026 RFS action

Clean Fuels Alliance America and Growth Energy have asked the US District Court for the District of Columbia to force the US Environmental Protection Agency (EPA) to promptly set biofuel blending obligations for 2026, which were due last month. The Clean Air Act requires the EPA to set obligations under the RFS 14 months in advance of a compliance year, but the agency has yet to issue a proposal for 2026. President Joe Biden's administration had set out a goal of proposing 2026 volumes by March and finalising them by the end of the year, although that schedule now depends on action from president-elect Donald Trump.

RFS waiver denials update

On 23 December, the US Court of Appeals for the District of Columbia Circuit vacated a July 2023 action from the EPA that denied 26 SREs from 15 refineries under the RFS. The action applies to most refineries affected by that decision, apart from six refineries affected by the EPA action that are instead seeking relief before the conservative-leaning Fifth Circuit. The Supreme Court is weighing whether future disputes involving small refinery RFS exemptions should proceed before regional circuit courts such as the Fifth Circuit or the DC Circuit, the latter of which is supposed to handle Clean Air Act cases of national scope.

The EPA denied petitions on 2 January from CVR Energy's 75,000 b/d refinery in Wynnewood, Oklahoma, and Calumet's 15,000 b/d oil refinery in Great Falls, Montana, for exemptions from their 2023 requirements under the RFS.

There are still 129 pending waiver petitions, including requests from the Wynnewood and Great Falls refineries for other RFS compliance years, and the EPA has said it needs time to rethink its process for reviewing the requests because of recent court rulings.

Tidewater calls for anti-dumping duties on US RD

Canadian biofuels producer Tidewater Renewables has issued a complaint to the Canada Border Services Agency (CBSA) requesting the federal government impose countervailing and anti-dumping duties on US renewable diesel. Tidewater claims that US RD producers are benefiting from artificially low prices because of US tax incentives — the now-retired BTC and pending Clean Fuel Production Credit (CFPC; 45Z) — which is harming Canada's renewable diesel market.

Tidewater claims duties of C$0.50-0.80/litre (35-56¢/litre or $1.32-2.11/USG)) on US RD could be imposed if the complaint is upheld, reflecting an estimated subsidy and dumping benefit to US producers of 40-60pc.

CBSA is charged with investigating and verifying the complaints, while the Canadian International Trade Tribunal is responsible for determining if those activities have harmed the Canadian industry. For a CBSA investigation to proceed, the complaint must have support from producers representing at least 25pc of Canadian output. Evidence of injury could then include lower prices and lost sales, reduced market share or decreased profits, among other factors. Should the Canadian authorities agree with the claim, preliminary duties could be imposed as early as May.

Demand

Ethanol

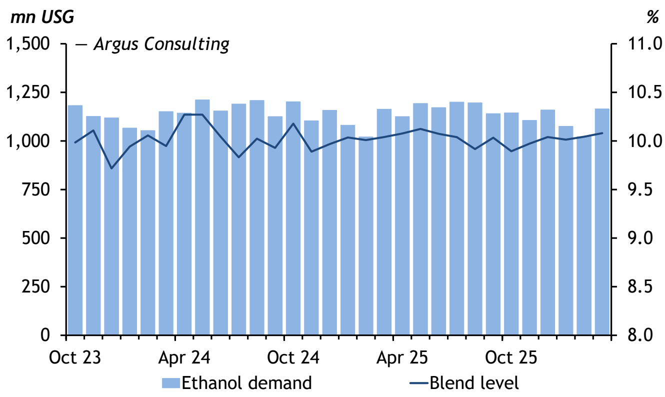
E15 hopes dashed

A turbulent round of negotiations in the Congress to push through a federal government funding bill yanked away US ethanol industry hopes of year-round E15 nationwide sales. Conservatives rejected an initial deal that included a provision authorising the sale of 15pc ethanol blends throughout the year, which led to it being scrapped by the time the spending bill was signed into law in December. The latest data for October placed national blending at 10.2pc, slightly higher than the 9.9pc recorded in September and above the 10pc in October 2023.

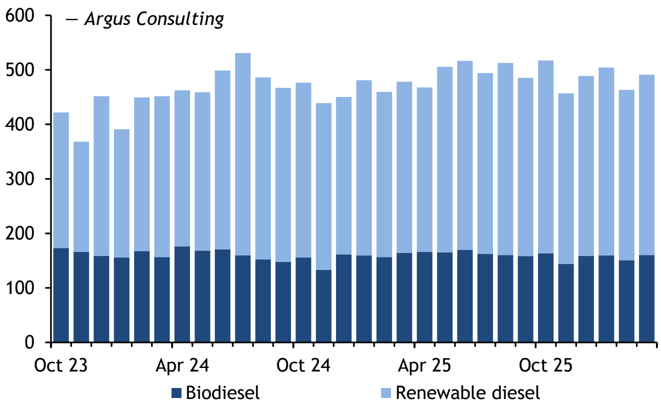
Lower winter seasonal gasoline demand will dip consumption to a low of 830,000 b/d in January, but the yearly average is expected to hold at 894,0000 b/d, marginally down from 895,000 b/d in 2024. From then onwards, we expect ethanol consumption will average 913,000 b/d and 915,000 b/d in the second and third quarter, respectively.

Lobby groups hope to rescue the provision this year, but our forecast maintains the assumption of an average 10pc blend

US ethanol demand and blend level



US biodiesel and RD consumption *mn USG*



wall to the gasoline fuel mix throughout this year and next. Total demand in 2025 is expected to stand at 10.7mn b/d, just 0.2pc below our expectation for 2024.

Renewable diesel

Into the unknown

September renewable diesel demand fell to a four-month low of 319mn USG in the US and is forecast to remain sluggish through at least the first couple of months of the year while the market remains on tenterhooks awaiting 45Z guidance.

The new guidance is still expected to come out by 20 January, meaning by the time the current presidential administration comes to an end, but until players have some assurance on how carbon intensities will be calculated for various feedstocks and fuel pathways, liquidity will remain at a minimum.

Several domestic producers are reported to be either undergoing maintenance or reducing run rates at the turn of the year until they get more clarity. On the flipside, California producer Global Clean Energy started churning out about 5,900 b/d in December.

Hopes are also waning for an extension of the $1/USG BTC, drying up imports from Singapore and Canada, which averaged 875,000 bl/month to the US west coast in 2024. Canada's largest RD producer Braya Renewable Fuels is considering idling its 18,000 b/d refinery because of the hit on margins.

But given higher federal renewable volume obligations and stricter LCFS targets in the main California market, US consumption should trend upwards once the regulatory wrinkles are ironed out. We forecast 2025 demand to hit 3.93bn USG this year compared with 3.66bn USG in 2024.

Biodiesel

Producers idle as margins turn negative

Biodiesel demand fell to a 17-month low of 148mn USG in

US biofuel demand outlook

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Biofuel											*mn USG*
Ethanol	1,202	1,103	1,158	1,081	1,021	1,163	3,265	3,489	3,536	3,409	3,262
Biodiesel	156	133	161	159	157	164	480	502	481	466	471
Renewable Diesel	321	306	289	322	303	314	939	988	1,011	997	988
Total	**1,678**	**1,542**	**1,608**	**1,562**	**1,480**	**1,641**	**4,683**	**4,979**	**5,028**	**4,872**	**4,720**
Biodiesel and renewable diesel feedstocks											*mn lbs*
Canola oil	460	308	322	359	277	308	944	1,091	1,128	1,000	973
Corn oil	427	371	327	367	335	349	1,051	1,177	1,167	1,184	1,081
Soybean oil	1,246	1,112	1,062	942	851	991	2,784	3,310	3,157	3,238	2,864
Tallow	651	584	801	909	993	854	2,756	2,245	2,463	2,526	2,830
Yellow grease	654	669	618	764	716	788	2,267	2,374	2,331	2,186	2,331
Other	108	73	66	75	90	104	269	380	348	252	277
Total	**3,546**	**3,118**	**3,196**	**3,415**	**3,263**	**3,394**	**10,073**	**10,577**	**10,593**	**10,387**	**10,356**

September, and blend levels are expected to remain at or below 3.1pc until February when producers hope to be more informed and able to price their wares accordingly following the release of 45Z guidance.

But until then, without credits to buffer margins, several refiners are being forced off line. Among others, Hero BX is entering routine maintenance at its 50mn USG/yr Pennsylvania and 20mn USG/yr Alabama facilities this month for 2-4 weeks. Renewable Biofuels said it would also idle its 180mn USG/yr Texas plant – the largest in the country – given the absence of policy guidance this year, joining Ever Cat Fuels, which closed its 3.3mn USG/yr Minnesota plant in October.

Even if 45Z guidance is forthcoming sooner rather than later, it will still take until at least February for downed producers to start up and resume full production. Also, the Clean Fuel Production Credit (CFPC) for soybean oil-based biodiesel producers might be significantly lower than the $1/USG BTC, and still not enough to bring some of the off line plants back into operation.

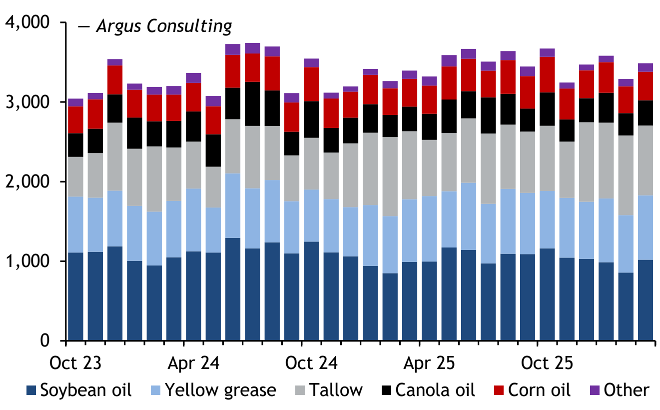
We currently forecast biodiesel demand in the first half of 2026 at 158mn USG/month, compared with 164mn USG/month in 2025. But this will very much be dependent on where next year's RVO will be set, which is currently unknown and based on past experience may not be set until well into 2026.

Feedstocks

Consumption bounce, but for how long?

Feedstock consumption recovered to 3.5bn lbs in October from an 11-month low of 3.1bn lbs in September. But it could be a short-lived recovery given the proliferation of temporary biofuel plant closures while participants wait on 45Z guidance, with feedstock demand not expected to exceed these October levels again until May.

US biodiesel and RD feedstocks demand ***mn lbs***



Canola oil had the biggest percentage increase at 55pc in October, up to 460mn lbs. Corn oil and soybean oil followed at 16pc and 13pc, respectively, as producers targeted high-carbon intensity (CI) feedstocks while they could still claim the flat $1/USG rate BTC. The size of eligible credit under 45Z will vary depending on CI, and contingent on the methodology used, vegetable oils may not qualify for any incentives at all.

Usage of lower-CI feedstocks such as used cooking oil (UCO) were flat to slightly lower in October, but their share of the overall feedstock pool is expected to rise under the new tax scheme to around 49pc this year compared with 44pc in 2024. But gaining an even greater foothold will be tricky given limited supply, especially if the incoming administration goes ahead on its promise to hike tariffs on Chinese imports, which will curtail UCO flows.

Credits

RINs/RVO

RIN generation retreats

US RIN generation fell to an eight-month low of 2.03bn in November following a brief spike to 2.17bn the previous month.

October interrupted a run of declining RIN generation that had been observed since April because of firmer margins from higher RIN and LCFS prices and increased diesel demand, which broke above 4mn b/d for the first time in a year and facilitated the need for blending alternatives.

But this proved to be short-lived as familiar issues regarding future regulatory ambiguity reared their head again in November. Plant closures and reduced run rates as 2025 ticked closer with no 45Z guidance slashed biodiesel production by more than 10pc to 156mn USG, its lowest since February 2023.

Prices expected to exit slump

Weaker soybean prices narrowed the bean oil-heating oil (BOHO) spread and pressured RIN prices in December, but values are expected to rebound for most grades given firmer RFS targets next year.

Producers will also be relying on higher RIN prices to compensate for the expired BTC, but value will depend on methodology used under the impending 45Z guidance.

Assuming UCO-based biodiesel would only be entitled to a 50¢/USG credit under 45Z compared with $1/USG under the BTC, producers would require an additional 33¢/USG on the RIN price to offset, given the 1.5 equivalency with D4 RINs, all else being equal.

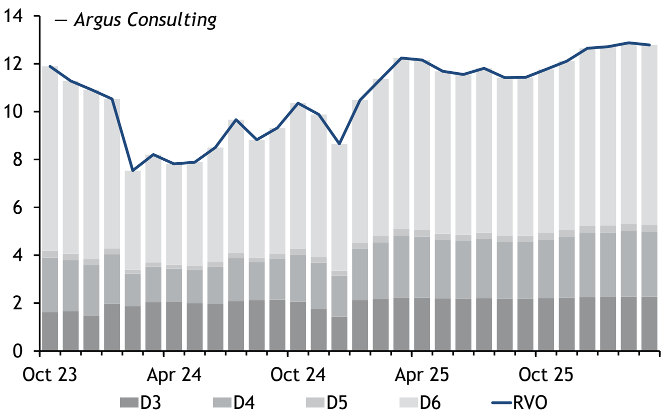
Producers of soybean-based biodiesel, which may not be entitled to any tax credit (or at least to a lower credit compared with producers using other feedstocks) under 45Z, would require an additional 67¢/RIN to earn the same revenue as under the BTC by this rationale.

But there is little likelihood of RIN prices rising by these amounts, in part due to higher LCFS values sharing the burden, and we forecast D4 prices averaging nearly 78¢/USG this year compared with 59¢/RIN in 2024.

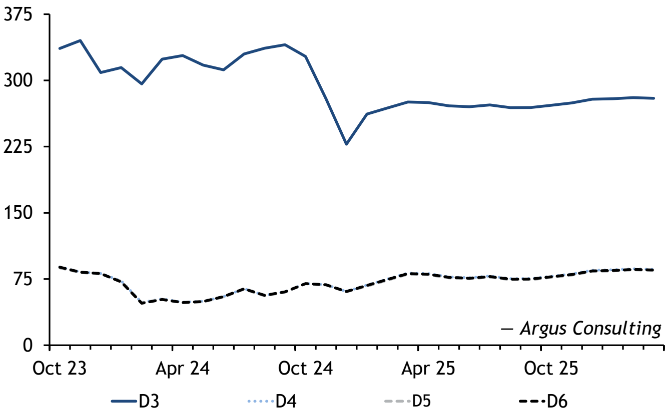
D4 and D6 diverge, D3 plummets

D4 and D6 RIN prices have begun diverging again at the start of the year owing to higher RFS targets and BTC expiration, the latter stemming renewable diesel import flows and drawing down the D4 oversupply that built up alongside domestic RD capacity over the last couple of years.

Argus RVO breakdown by RIN category *¢/USG*



RIN price forecast *¢/RIN*



We forecast around a 4¢/RIN difference opening up in January, which could stretch to 8¢/RIN by the first quarter of 2026.

The exception to the bullish RIN forecast is D3, whereby the possibility of targets being revised down for this year and last saw December values plummet by 18pc from November to 228¢/RIN. The 2025 average is forecast at 272¢/RIN, versus 311¢/RIN last year.

LCFS

Prices bullish but headwinds remain

California LCFS prices continued to trend upwards following California Air Resources Board's (CARB) approval of tougher targets next year, but the bullishness is tempered by legal action from environmental groups against the changes and a more than 30mn t bloat in the credit bank.

The board approved a 9pc dropdown in the 2025 carbon reduction benchmark, six times steeper than normal, which has lifted our price forecast to nearly $170/t by March 2026. This is a level not seen since August 2021, before rampant renewable diesel production weighed on values.

US RIN & LCFS price outlook

Credit	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
RIN											¢/RIN
D3	327	279	228	262	269	276	269	272	270	275	280
D4	70	69	61	68	75	82	75	78	76	81	86
D5	70	68	61	67	74	81	74	77	75	80	85
D6	70	68	61	68	74	81	74	78	76	81	85
RVO ₵/USG	10	10	9	10	11	12	11	12	12	12	13
LCFS											$/t
California LCFS	66	75	76	77	78	79	78	90	110	141	162

But threats hang over the amendments, which currently sit with the state's Office of Administrative Law for review before taking effect on 1 April.

CARB faces opposition from groups saying it failed to consider environmental harm or follow proper state procedures, while Republicans aim to repeal the changes fearing they could increase gasoline pump prices by roughly 15pc.

Even if the more aggressive target is enacted, it could take time to draw down the huge overhang in the cumulative credit bank. Latest CARB data for the second quarter of 2024 showed 29mn t of excess credits, which we predict reached nearly 35mn t by the end of the year. Should the new rules be enacted, we forecast the surplus to still hang above 30mn t by the first quarter of 2026.

Prices

Ethanol

Feedstocks, exports drive prices higher

US ethanol prices continued to track corn prices higher in December and are predicted to continue doing so into the first half of this year, but the high cost of the feedstock is strangling margins.

Corn futures hit an eight-month high of $4.59/bushel in early January 2025 and are expected to reach $5.10/bushel by May.

Combined with peak driving season demand, this will send the ethanol Argo and US Gulf Coast values to $2.11/USG and $2.25/USG, respectively, by that same month, which would be their highest levels since October 2023.

A seasonal trough heading into winter will likely follow, but suppliers will continue to find good demand from abroad, which proved particularly lucrative last year.

Exports totalled 1.72mn USG in 2024 up to November, beating the previous annual record of 1.67mn USG set in 2018, even without December's figures. Canada, the UK and India drove upward trend thanks to higher renewable fuel mandates that are set to rise even higher this year.

Biodiesel

Diesel and feedstocks cap prices

A marginally weaker BOHO spread will offset higher renewable volume obligation targets when it comes to biodiesel prices this year, while regulatory misgivings continue to provide an uneasy backdrop.

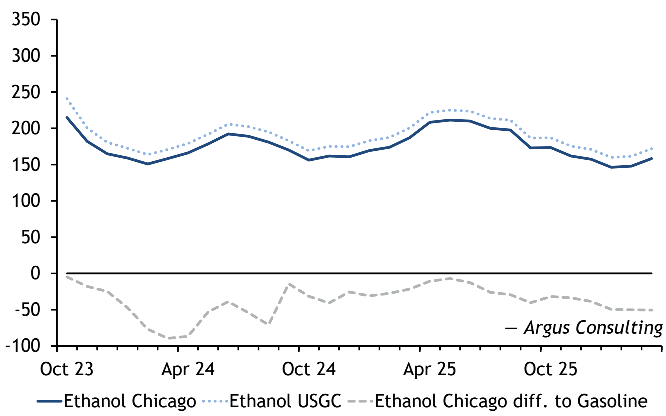
Both diesel and soybean oil markets are bearish. Fossil fuel diesel prices are forecast to average $674/t this year, compared with $718/t in 2024. Meanwhile, record-high domestic soybean output and expanding production out of South America will keep a lid on feedstock values.

Despite this, B99 US Gulf coast values are expected to remain steady at $2.40/USG, just 1¢/USG higher than last year.

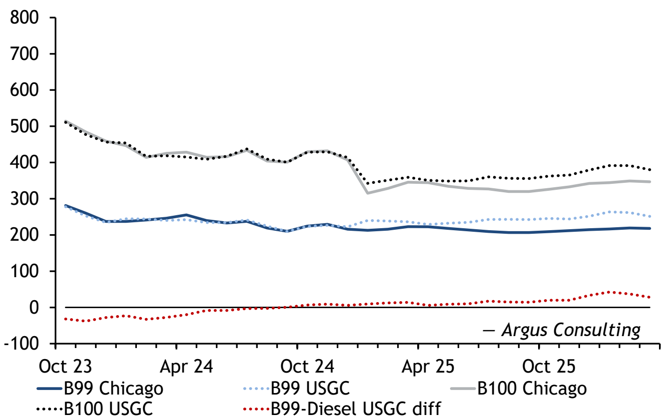
B100 values will drop following the withdrawal of the BTC from contract negotiations. The amount by which they could be buttressed once 45Z guidance is finalised is yet to be seen, but for crop-based fuel producers, any credit is likely to be minimal if forthcoming at all.

With any RIN price increase unlikely to fully offset the withdrawal of tax credits, US Gulf coast B100 values are forecast to drop 16pc to $3.57/USG this year.

US ethanol prices *¢/USG*



US biodiesel prices *¢/USG*



Renewable diesel

Credit removal slashes values

Similar to biodiesel, R100 suppliers are contending with the double hit of the BTC withdrawal and the lack of guidance on the 45Z.

Although higher LCFS and RIN prices should marginally offset the drop, the lack of a tax credit will see soybean-based R100 values fall 9pc to a yearly average of $4.70/USG.

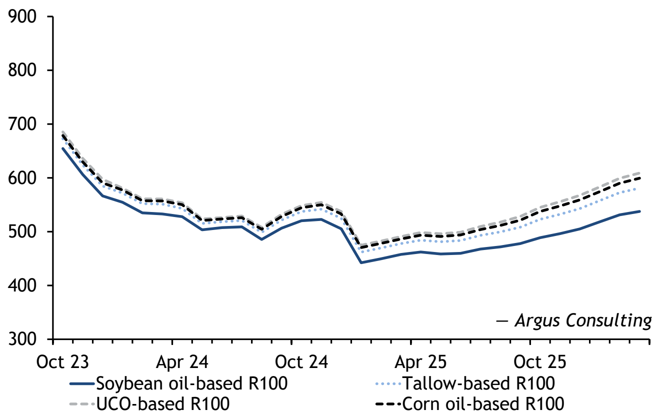
UCO and tallow-based renewable diesel should find additional support from getting a higher tax credit under 45Z than soybean oil, although this will still be far lower than the $1/USG under the BTC.

While awaiting final guidance, we have assumed a 50¢/USG credit for UCO and 40¢/USG for tallow, but these do not currently form part of our future pricing forecast given the CFPC is a producer tax credit and not considered in the R100 credit stack price.

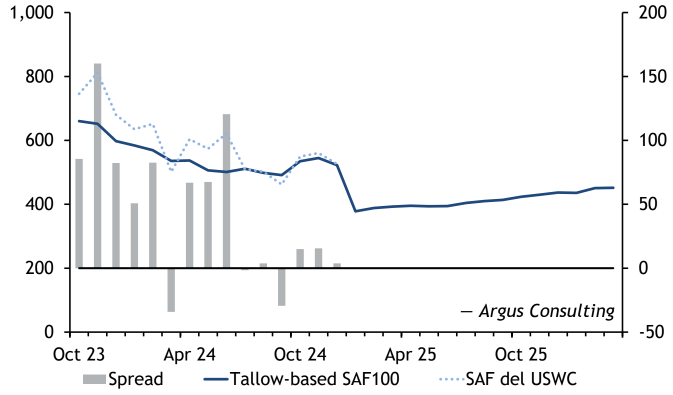
Growing demand from California, should the more stringent decarbonisation targets become enacted in April, could also lend support for lower-CI grades. We forecast the premium for UCO-based R100 over soybean-based R100 to rise to 44¢/USG on the 2025 average, although this would be a gradual increase from 32¢/USG in December 2024, to 59¢/USG by the fourth quarter of 2025, reflecting rising RIN and LCFS credit prices.

Domestic RD supply is also set to increase by 488mn USG should all announced projects come to fruition, bringing the total up to 5bn USG. But this should be offset by the withdrawal of the BTC stemming import flows, which totalled 441mn USG last year.

US renewable diesel prices *¢/USG*



US SAF prices *¢/USG*



SAF

Prices weaken

Weaker RIN and jet fuel prices pushed SAF values lower in December, and given the BTC no longer forms part of price negotiations, prices will fall further this year.

The California jet fuel carbon-intensity target lowered to 81.7g CO2e/MJ from 87.89g CO2e/MJ last year, so overall returns from the LCFS will be capped even as individual credit prices rise, especially in the first half of the year.

Higher RIN prices will provide limited support, but overall tallow-based SAF100 prices will average $4.05/USG this year, compared with $5.28/USG in 2024.

Limited demand options may also weigh on values, given SAF prices remain uncompetitive against jet fuel. More than 3mn t/yr of SAF capacity is announced to come on line in the US this year, but with no domestic mandates in place, producers that do make it to market may need to find foreign buyers.

Feedstocks

Soybean oil prices getting crushed

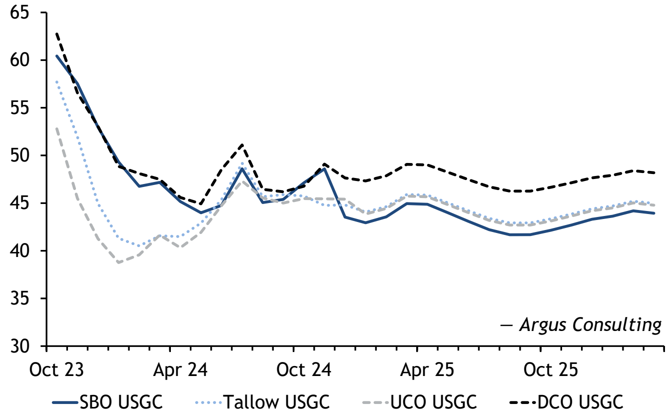
Soybean oil values are expected to continue sinking, given healthy production and faltering short-term demand. Biodiesel producers are still awaiting clarity on how the feedstock will be credited under 45Z, and prices have fallen 5¢/lb on the month to an average of 43.5¢/lb in December.

Several biodiesel and renewable diesel plants announced that they would remain off line in the interim, and possibly take weeks to return back up to full capacity once the Treasury finally submits the required information. Even then, crop-based feedstocks will likely not be eligible for any significant credit under the scheme because of their higher carbon intensity. This is leaving new entrants to the soybean market in the lurch, as the addition of several crush plants on the promise of a renewable diesel boom has boosted US nameplate capacity by 10pc since 2022 to 2.91bn bushels/yr.

Higher US exports in the wake of palm prices rising to their highest levels since 2022 provided an outlet to domestic sellers last year. This could continue given palm producer Indonesia is upping its own domestic biodiesel mandate to B40 this year, but threatened 25pc tariffs by incoming US president Donald Trump against Mexico could provoke retaliation from one of the biggest buyers of US soybean oil.

We anticipate US Gulf Ccoast soybean oil values will drop further to 42.9¢/lb in January, remaining weak until March. Increased demand for waste oils on the back of 45Z is likely to support a premium for UCO, distillers corn oil, and tallow, which we forecast at 43.9¢/lb, 47.3¢/lb and 44.1¢/lb for January. The continuation of such premiums will greatly depend on how 45Z unfolds as well as the development of LCFS credit prices, which also provide additional support to low-CI feedstocks.

US biofuel feedstock prices *¢/lb*



US biofuel price outlook

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Ethanol											¢/USG
Ethanol Chicago	156	162	161	169	174	187	177	210	190	164	151
Ethanol USGC	169	175	175	183	188	201	190	224	204	178	164
Biodiesel											¢/USG
B99 Chicago	224	229	216	213	216	223	217	218	208	212	218
B99 USGC	223	227	223	240	239	236	238	232	243	247	259
B100 Chicago	429	432	407	315	329	346	330	336	322	334	347
B100 USGC	428	429	414	342	351	359	351	350	357	369	388
Renewable diesel (del California)											¢/USG
R100 (soybean oil)	520	523	505	442	450	458	450	460	472	497	529
R100 (tallow)	537	542	525	462	470	478	470	483	500	533	570
R100 (UCO)	548	554	537	475	483	491	483	498	519	556	597
R100 (corn oil)	545	550	533	470	478	486	478	493	512	548	588
SAF (del California)											¢/USG
SAF100 (tallow)	535	545	522	378	388	393	386	394	409	430	446
Feedstocks (US Gulf coast del rail)											¢/lb
SBO crude degummed	47	49	44	43	44	45	44	44	42	43	44
Tallow bleached fancy	46	45	45	44	45	46	45	45	43	44	45
UCO	45	45	45	44	44	46	45	45	43	44	45
Distillers corn oil	47	49	48	47	48	49	48	48	46	47	48

Fundamentals

Agricultural prices

Argentinian weather key to global corn markets

Global corn tightness persists. EU and US corn production figures may be overstated by official agencies, potentially leading to tighter physical market supplies by the end of the marketing year. The heat dome in Argentina is also cause for concern. As corn approaches a critical development stage in the Pampas, the lack of rainfall and heat waves could adversely affect the final crop potential. With US corn markets tightening due to strong export demand, any crop issues in Argentina could shift international demand to US origins. These uncertainties are supportive for the corn and wheat markets in the US and EU, given the competitiveness of EU values globally.

La Nina pressures South American soybean harvest

US agricultural markets are closely monitoring developments in the South American outlook. La Nina is adversely affecting the continent's weather in two distinct ways. In Brazil, the soybean crop is nearing maturity, but wet weather is hindering harvest activities and continued heavy rainfall is forecasted for the main producing states in the coming weeks. If this continues until early February, producers could face quality issues and, in the worst cases, a disappointing yield that could impact the national crop. Despite record soybean crop forecasts, the short-term overview could be supported by minimal stocks and harvest delays. These factors explain the upward revision of CME soybean price forecasts for the January-March period. But the arrival of the global record South American production will likely weigh on prices thereafter.

The heat wave and lack of rain in the forecasts for the next 15 days in Argentina threatens corn crop potential. Production could decline 20pc if the dryness persists. Consequently, our corn price forecast is slightly revised up for January-March.

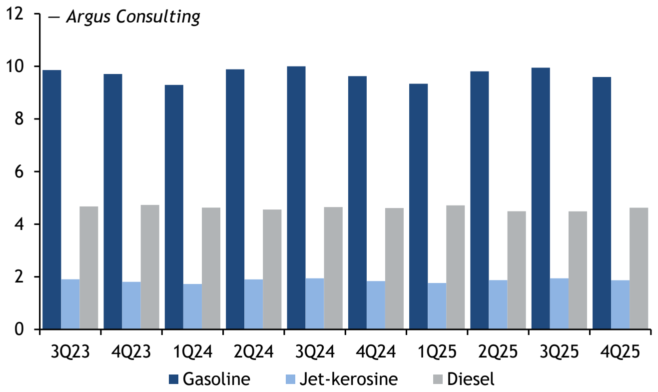
Fossil fuel demand and prices

Gasoline crack strong in 2024

Gasoline cracks rose in the US hub in December. On the whole, gasoline cracks were strong in 2024, although below the elevated levels seen in 2022 and 2023. The average for 2024 was well above levels in 2019.

There was an unseasonal rise in gasoline cracks by $0.17/bl to $7.54/bl in December on the US Gulf coast. The coming holidays supported demand and prices for high-octane blending components in the first half of December. But demand

North America fuel demand *mn b/d*



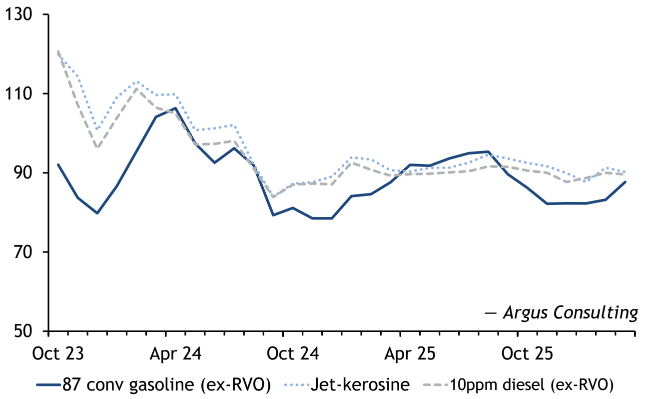
slumped towards the end of the month, and is expected to be seasonally weak in January, further weighed on by winter storms. Strong stockbuilds in December, up by 16.1mn bl to 231.4mn bl on 1-27 December, and seasonally weaker demand will weigh on prices in January.

Average naphtha cracks in December fell from November in all four of the main refining regions. Cracks weakened most sharply on the US Gulf coast, by $1.72/bl to $2.77/bl. US heavy naphtha premiums relative to the rest of the world fell sharply at the end of November on weaker gasoline blending demand, which continued into December.

Air passenger demand up 4pc in December

On the US Gulf coast, jet fuel cracks strengthened to a five-month high of $18.08/bl in December, supported by a rise in passenger demand. The Transportation Security Administration reported air passenger volumes increasing 4pc from November, the sharpest November-December rise in five years. Supply also tightened on reduced stocks, with US Gulf coast stocks falling 12pc on the month to the lowest in nearly two years. But stock levels are starting to rebound, which could lead to the crack spread normalising in the next couple of months, tracking lower air travel demand.

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



SOUTH AMERICA

Regulation

Brazil sets Renovabio's 2025-34 targets

Brazil's national energy policy council CNPE has published new mandatory Cbio decarbonisation credit targets under the Renovabio biofuel policy for 2025-34. The 2025 Cbio target for fuel distributors has been set at 40.39mn, which is down from 46.4mn set in 2024. The Cbios target will then gradually increase to 72.54mn in 2034.

CNPE has also approved a resolution that allows the mines and energy ministry MME to set new minimum targets for the use of waste-based feedstocks in biofuel production.

Brazil's mines and energy ministry begins E30 tests

Brazil's MME has announced it will begin technical compatibility tests of E30 ethanol blends in light-duty vehicles to study the impact of increasing Brazil's minimum ethanol blend rate to 30pc. Under the new Fuel of the Future law passed in October, CNPE has the authority to raise the minimum blend of ethanol in gasoline from 27.5pc currently to up to 35pc, provided there are no technical constraints on the use of higher blends.

Demand

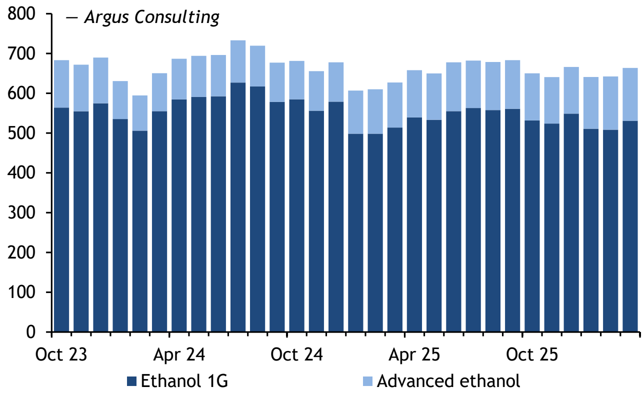
Ethanol

Early December output falls in Brazil as more mills shut

Brazil's centre-south mills produced 766mn litres of ethanol in the first half of December, down by 27pc from a year earlier, as more mills shut and entered the interharvest season amid the end of the sugarcane crop in November. Operations at 69 plants stopped during the fortnight, raising the number of idle plants to 206 by 16 December. In comparison, only 82 mills had already closed by the same period in 2023.

Conversely, corn ethanol production rose by 35pc in the first half of December from a year earlier, reaching 379.2mn l. The Brazilian corn ethanol industry is expected to continue its rapid growth this year. Domestic consumption of grain is projected to total a record 87mn t between 1 February 2025 and 31 January 2026, up from 84.2mn t in the prior season, while corn ethanol production is expected to reach close to 8bn l during the same period, 16pc up over the same period in 2023.

Brazilian ethanol demand *mn litres*



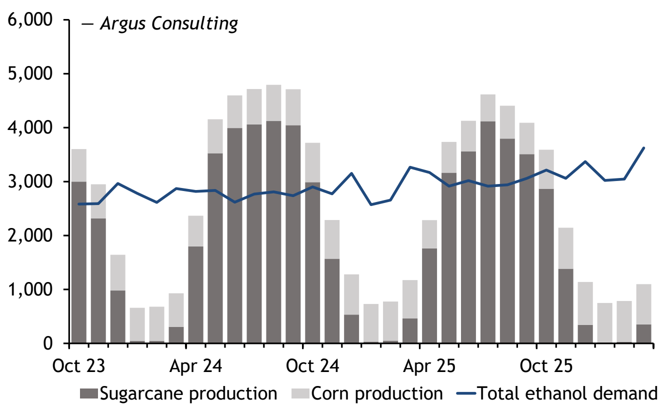
Brazil has 24 operating corn ethanol units, with more than half located in the central-western Mato Grosso state, the country's largest corn producer. Another 17 plants are either under construction or awaiting authorisation to start operating. In 2025, at least eight units will be launched, and another four may receive operational licences.

We expect total ethanol production to stand at 730.6mn l in January, with corn ethanol representing around 95pc of production. The dominance of corn ethanol is expected to remain across the first quarter, as we stay within the interharvest of Brazil's sugarcane crop. In April, with the beginning of the sugarcane harvest, we expect ethanol production to grow to 2.3bn l, of which 77pc will be from sugarcane and 23pc from corn.

Ethanol sales rise 7pc on year in November

Ethanol sales rose by 7pc on the year in November as prices remained more competitive than those for gasoline at the

Brazilian ethanol production *mn litres*



pump. Total ethanol sales totalled 1.8bn l, with significant growth observed across Brazilian regions. In the north region, hydrous ethanol sales surged by 51pc over the month, to 42.5mn l. Sales also grew in the south and central-west regions by 29pc and 11pc, respectively.

Ethanol sales showed signs of slowing in early December. Recorded sales in the first week of December were lower this year than in 2023 as a result of reduced sugarcane processing and an increased number of mills idling operations this season. Despite these challenges, growth in corn ethanol production is expected to mitigate some of the declines in sugarcane ethanol production. We expect ethanol demand to have stood at 3.1bn l in December this year, supported by a boost in seasonal driving demand owing to the festive holidays.

In the new year, we picture ethanol demand to fall back down to 2.6bn l in January and 2.7bn litres in February, but ongoing tests for the technical viability of 30pc ethanol blends should pave the way for upcoming blend rises.

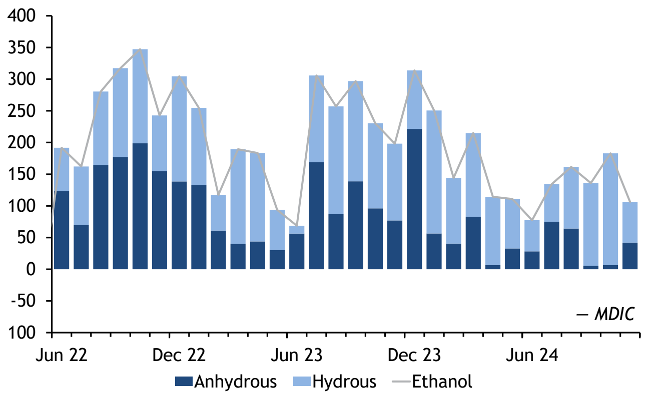
November ethanol exports down on domestic demand

November ethanol exports from Brazilian ports fell by 42pc from a year earlier as domestic demand remained strong, with pump prices favouring the consumption of hydrous ethanol over E27 gasoline. Brazil exported 113.8mn l of ethanol over the month, down 44pc from the 202.2mn l in November 2023.

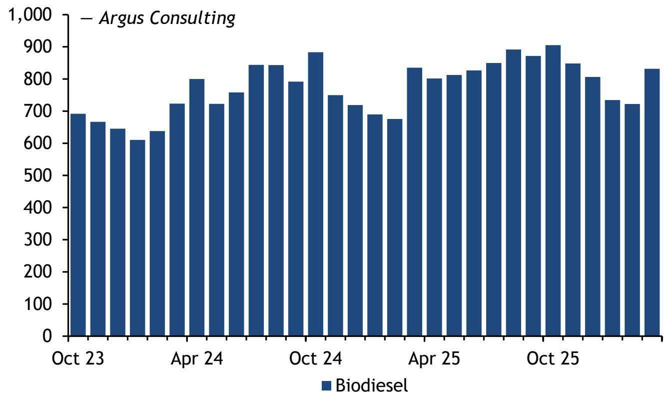
The US took the largest share, with 34pc, displacing South Korea to the second position with 25pc after leading the ranking for three consecutive months. Ghana came in third, with 14pc, and the Netherlands in fourth, with around 10.5pc.

Brazil's ethanol imports almost doubled to 7.5mn l, from 4mn l a year before. Argentina sent 92pc of the total, while Uruguay shipped 5.6pc.

Brazilian net ethanol exports *mn litres*



Brazilian biodiesel demand *mn litres*



Biodiesel

B15 mandate to boost demand from March in Brazil

Demand for biodiesel fell by 15pc in November, from a record high of 883mn l of sales in October, owing to additional motor fuel demand over Brazil's end-of-year driving season. Blending of biodiesel stood at 13.8pc in November, just shy of the B14 mandate. Sales were up 12pc on the year in November, mainly as a result of Brazil increasing its biodiesel blending mandate in March 2024 from 12pc to 14pc.

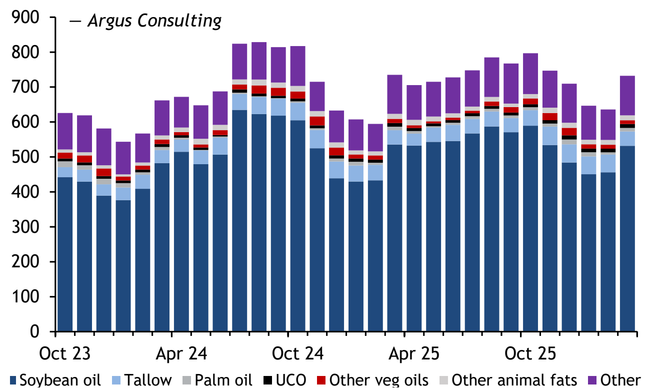
Across the first two months of the new year, we expect biodiesel consumption to average 683mn l before surging to 835mn l in March as the country once again ups its biodiesel mandate from 14pc to 15pc. The changing mandate is expected to boost biodiesel demand by 8pc this year, reaching a record 9.8bn l of sales over 2025.

Feedstocks

Soybean oil demand down, tallow up

Demand for biodiesel feedstocks fell alongside biodiesel demand in November to 701,000t. Soybean oil demand

Brazilian biodiesel feedstock demand *'000t*



dropped to 525,000t, and its share of total feedstocks slipped by one percentage point to 73pc. To compensate, demand for alternative feedstocks rose, with the consumption of other vegetable oils climbing from 20,000t to 26,000t, an all-time record high for the category.

Demand for tallow rose to 52,000t in November, a 53pc increase on the year. The share of tallow used in Brazil's domestic biodiesel industry has steadily been increasing since last year. The main cause for the higher penetration of tallow is the cautious stance US tallow importers are adopting regarding the upcoming 45Z tax credit.

Political swings to impact US-Brazil trade

In addition to uncertainties about the calculation of carbon intensity for different biofuels and inputs under the 45Z, there is no definition of which types of products will be able to claim the tax credits under the law. These issues will most likely need to be clarified after Donald Trump's inauguration as US president later this month, bringing fresh uncertainty to the Brazilian beef tallow industry. Trump has also signalled plans to impose tariffs on a wide range of imported goods, which could increase costs for imported biofeedstocks to be used in the US market.

Politicians have already begun lobbying for refiners using imported feedstocks to refrain from claiming credits, a move to protect US producers of feedstocks. Although this pledge was mainly directed at Chinese used cooking oil (UCO) exporters, a change in requirements for the 45Z credit could also hit Brazilian inputs, and that could lead to a drop in export demand.

But a new Brazilian biodiesel blending mandate may avert potential losses, by increasing domestic demand in an already-limited feedstock market. The usage of tallow in the biodiesel industry has been growing, accounting for 6.7pc of the 7bn l of inputs used for Brazilian biodiesel production in January-October, a 0.5 percentage point increase from the same period in 2023. In the near term, Brazilian tallow producers and traders are likely to prioritise the domestic market, where the shortage of raw materials and high soybean oil prices have offered higher margins than exports during the last quarter of 2024.

Brazilian biofuel demand outlook

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Ethanol demand											*mn litres*
Anhydrous ethanol	1,043	981	1,205	985	937	1,057	2,979	3,101	3,055	3,220	3,114
Hydrous demand	1,857	1,792	1,947	1,587	1,718	2,209	5,514	6,001	5,861	6,423	6,577
Ethanol demand	2,900	2,773	3,152	2,572	2,656	3,266	8,493	9,102	8,916	9,643	9,691
Ethanol production											*mn litres*
Sugarcane ethanol	2,989	1,569	532	31	50	462	543	8,482	11,426	4,595	393
Corn ethanol	729	719	748	699	725	711	2,136	1,666	1,687	2,279	2,243
Ethanol production	3,719	2,288	1,280	731	775	1,173	2,679	10,148	13,113	6,874	2,635
Biodiesel demand											*mn litres*
Biodiesel	883	750	719	690	676	835	2,201	2,441	2,613	2,560	2,288
Feedstock demand											*'000t*
Soybean oil	605	525	439	430	433	536	1,398	1,622	1,725	1,608	1,438
Tallow	50	52	48	46	44	41	131	121	125	149	143
Palm oil	4	5	8	11	6	10	27	18	22	31	28
UCO	8	8	9	9	9	10	29	25	25	30	32
Other vegetable oils	20	26	22	11	12	12	35	20	35	58	34
Other animal fats	16	15	15	12	12	14	38	42	35	42	41
Other	114	84	91	88	79	112	279	302	332	334	297
Total	**817**	**715**	**633**	**607**	**595**	**735**	**1,937**	**2,148**	**2,300**	**2,253**	**2,015**

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

Bullish pressure from Brazilian real depreciation

Anhydrous fob Santos prices are expected to climb to $642/t this month, from their average of $611/t in December, on the back of the Brazilian real depreciating, driven by economic uncertainty. The real ended the year at R6.20:$1 on 31 December from R4.90:$1 on 1 January 2024, marking the largest yearly depreciation since 2020. Market anxiety has dragged the real to a historic low after significant central bank interventions again failed to counter market concerns over government spending.

Anhydrous prices are also expected to face further bullish pressure throughout the first half of the new year as gasoline prices head in a sharp upwards trajectory. We expect anhydrous fob Santos prices will climb to $720/t by March and continue upwards to $782/t by June.

A growing D5-D6 spread may also put uphill pressure on anhydrous fob Santos prices in the new year, as the market awaits a US EPA decision regarding Renewable Fuel Standard small refinery exemptions under the new US administration. A wider D5-D6 spread would favour Brazilian sugarcane ethanol in US markets, which is typically comprised of corn ethanol, resulting in higher bids for the product.

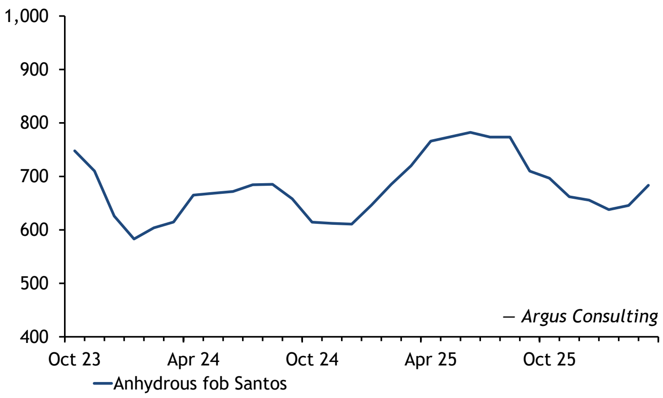
Biodiesel

Arbitrage remains open across December

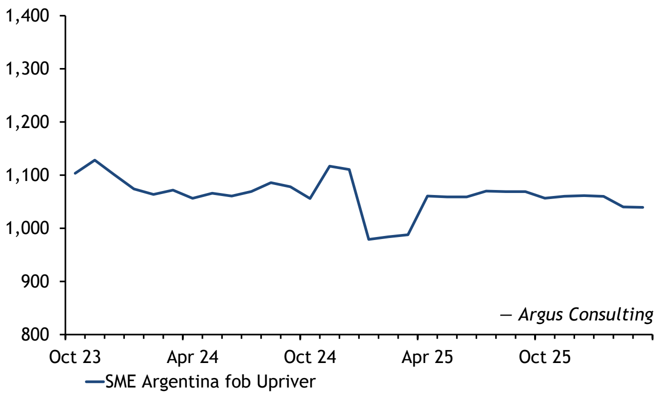
Argentinian soybean methyl ester (SME) fob Upriver prices held firm in December, dropping only $7/t from November to $1,110/t. Arbitrage with Europe remained open over the month, with flows continuing to head to the Netherlands. Argentina exported 30,000t of product to Europe in December, mirroring November volumes.

We expect the start of the new year will coincide with a revision to the EU's minimum import price, which should drop prices to $979/t in either January or February. From then on we expect SME prices will track some bullishness in the European market by the second quarter. Prices are expected to average $1,060/t in the second quarter increasing slightly further to $1,069/t by the third quarter.

Brazilian ethanol prices *$/t*



Argentina biodiesel prices *$/t*



South American biofuel price outlook

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Brazilian ethanol											$/t
Anhydrous fob Santos	614	612	611	646	685	720	684	774	752	671	656
Argentinian biodiesel											$/t
SME Argentina fob Upriver	1,056	1,117	1,110	979	984	988	984	1,060	1,069	1,059	1,046

ASIA-PACIFIC

Regulation

Indonesia introduces B40 biodiesel blend

Indonesia's ministry of energy and mineral resources confirmed on 29 December that the country will phase in B40 blending from 1 January. The ministry stated that biodiesel producers and fuel retailers must supply 15.6bn litres of palm oil methyl ester (PME) in 2025, up from an estimated 13bn litres consumed in 2024 to meet the B35 target.

The Palm Oil Plantation Fund Management Agency (BPDPKS) is expected to revise the country's export levy structure so that it can distribute extra funds to support B40 blending in the "public service obligation" (PSO) sector. The PSO accounts for 7.55bn litres of the total allocation that will be subsidised by the export levy funds, while the remaining 8.06bn litres will be sold without subsidy.

The Indonesian government plans to review the progress of implementing B40 every three months, and has indicated plans for the introduction of a B50 mandate in 2026.

Indonesia requires registration to export UCO, Pome oil

Indonesia's ministry of trade announced on 8 January that exporters of palm oil derivatives, including used cooking oil (UCO) and palm oil mill effluent (Pome) oil, must obtain approval to export the products, to ensure availability of feedstocks to support the rollout of Indonesia's B40 mandate.

Export approvals will be valid for six months from the date of issuance, according to the regulation.

Malaysia's palm oil tax reference price continues to rise

Malaysia's crude palm oil (CPO) reference price, which is used to set the export duty, rose from 4,471.39 ringgit/t ($1,005/t) for December to 5,001.72 ringgit/t for January, the highest reference price since August 2022. As the reference price exceeds 4,050 ringgit/t, the export duty remained at 10pc, its highest level.

Despite a sharp increase in Malaysian prices, Indonesia's reference price fell from $1,072/t in December to $1,060/t in January. The lower reference price was insufficient to trigger a lower band of export duties, which are paid to the treasury and set at $178/t for CPO, $104/t for refined, bleached, and deodorised olein, $37/t for biodiesel, $12/t for Pome oil and $81/t for palm fatty acid distillate.

Since last September, the export levies (which are used to support the palm oil and biodiesel industry) are now set as percentages against the palm oil reference price. The percentage levels are 7.5pc for CPO, 6pc for palm olein, palm stearin, palm fatty acid distillate and used cooking oil (UCO), 4.5pc for refined, bleached, and deodorised palm oil and olein, and 3pc for biodiesel.

Prices

HVO and SAF

HVO prices retreat as markets rebalance

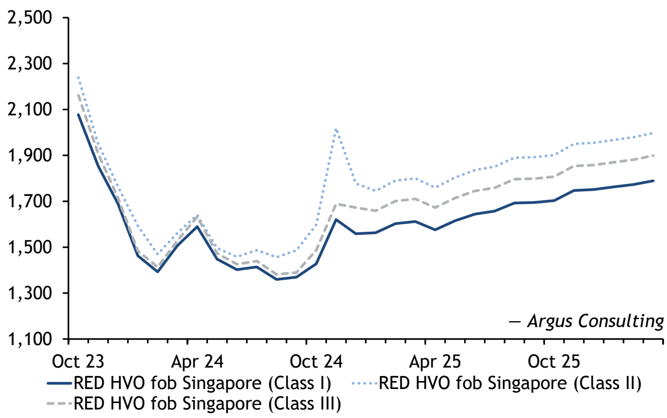
Hydrotreated vegetable oil (HVO) Class II fob Singapore prices eased in December to an average of $1,777/t, down 12pc from November, when multiple European biorefineries' production disruptions led to HVO prices rallying $900/t in three weeks. Prices had eased by the start of December, but held firm, and excluding November, December was the highest monthly average in a year.

Global HVO capacity remains ample, and following a review of our RED III transposition expectations, we have moderated down our price forecast for 2025. We maintain our expectation of firmer prices towards the end of the year, which should see HVO Class II fob Singapore prices rise to $1,950/t by the fourth quarter.

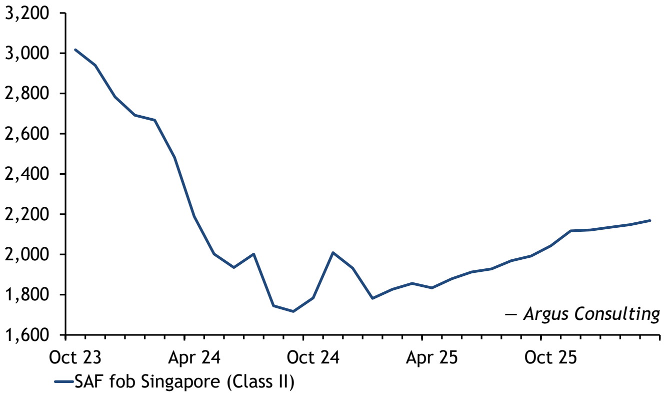
SAF oversupply woes worsen

SAF fob Singapore prices fell 3.9pc in December to $1,931/t, and we expect this trend will continue into January as the SAF premium to HVO stood at just $14/t on 8 January, a

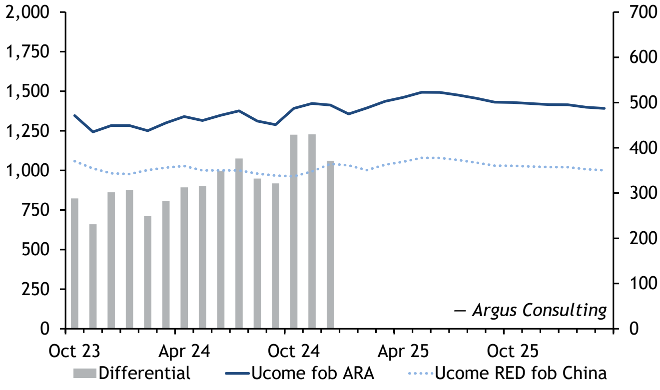
Asia-Pacific HVO prices **$/t**



Asia-Pacific SAF prices $/t



Ucome prices $/t



clear indication that SAF stocks are high and are not met by the same level of demand. The ReFuelEU Aviation and UK SAF mandate targets came into force on 1 January, which should alleviate weak demand. But China's hydrotreatment capacity will likely remain focused on exporting SAF to Europe to avoid anti-dumping duties, which could keep the market in a state of oversupply this year, therefore keeping downward pressure on prices.

Biodiesel

Chinese biodiesel prices struggle with firm UCO costs

Chinese biodiesel and feedstock prices moved in unexpected directions in December as the removal of China's UCO export tax forced a shake-up in markets after months of little change. UCO methyl ester (Ucome) fob China prices averaged $1,041/t, up 4.8pc on the month, which was a surprising direction as European Ucome grades weakened, closing the economics of exporting to Europe. Assuming an anti-dumping duty of at least 22.8pc, the lowest duty applied to a biodiesel producer, Ucome fob China prices should have averaged $1,019/t. But market participants are saying there is no room for prices to fall as domestic UCO prices have risen following the removal of the 13pc export tax rebate. And there is likely some truth to that, as the Ucome fob China to UCO fob China differential has held at $80/t in the first week of January, down from around $120-200/t through 2024 and the previous all-time low of $115/t in September 2023.

European biodiesel markets are expected to weaken further in January, which will pressure prices for Ucome fob China. There are clear signs that UCO prices could ease in the coming month, allowing some room for Ucome fob China prices to come down or for a workable arbitrage to reopen. But UCO prices this year are likely to remain elevated against 2024, so pricing support will also come from firmer European biodiesel prices, which we expect will be higher this year, raising bids for Ucome fob China prices.

For February and the rest of our forecast period, we expect Ucome fob China prices will realign with the price required to make the arbitrage to Europe workable after considering freight and anti-dumping duties. But there are early signs that prices may disconnect from the European market. Firstly,

Asia-Pacific biofuel price outlook $/t

Product	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	1Q25	2Q25	3Q25	4Q25	1Q26
Biodiesel											
RED Ucome fob China	963	993	1,041	1,032	1,002	1,036	1,023	1,071	1,048	1,025	1,009
HVO											
HVO Class I fob Singapore	1,428	1,620	1,558	1,563	1,603	1,612	1,592	1,612	1,681	1,734	1,775
HVO Class II fob Singapore	1,598	2,019	1,777	1,746	1,790	1,800	1,778	1,800	1,878	1,935	1,981
HVO Class III fob Singapore	1,487	1,689	1,672	1,659	1,701	1,710	1,690	1,710	1,784	1,840	1,883
SAF											
SAF Class II fob Singapore	1,784	2,009	1,931	1,782	1,827	1,856	1,821	1,875	1,963	2,094	2,150
Feedstock											
UCO fob China	836	859	899	955	933	904	931	953	931	910	896

biodiesel exports to Europe have continued to fall month on month since the provisional duties came into force, suggesting the link that has held consistent the last few years is waning. And secondly, current Ucome and UCO prices do not reflect workable production margins for Chinese producers, who will likely turn to more profitable destinations, or cease selling product until they are no longer operating at a loss.

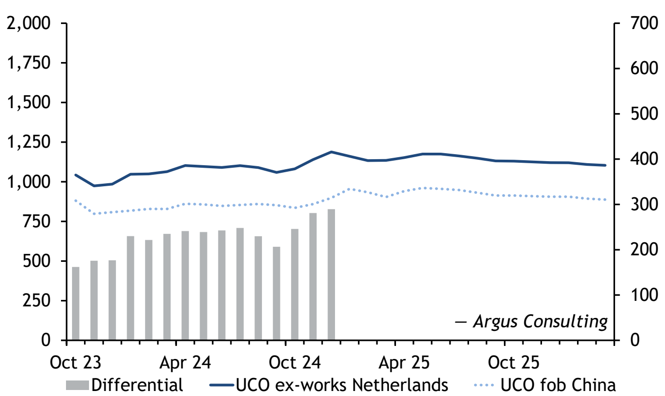
Feedstock

UCO prices finish 2024 at 19-month high

Price movements across UCO grades have been erratic since China's announcement in early November that it would remove the 13pc UCO export rebate on 1 December. Initially, domestic prices dropped in November as suppliers rushed to clear out their inventory before the rebate expired, and export grades rose at different paces depending on spot liquidity or contractual terms. The UCO fob China price that underpins our forecast saw little change, rising $55/t over 4 November-13 December, whereas premium and bulk grades showed a sharper initial response, rising $175/t across the same time frame. And prices continued to show an odd divergence on 27 December, when UCO fob China rose $80/t on the day to $970/t, a 19-month high, whereas prices for UCO bulk and UCO premium fell $30/t. It should be noted that this could be down to a market correction, as the resulting spreads between the three grades once again reflect similar values to the spreads in October and earlier last year.

Looking forward, we expect UCO prices will ease, as current European Ucome, HVO and sustainable aviation fuel prices should cap any UCO price gains, especially as the market is well supplied in the near term for finished biofuels and feedstocks. Palm oil prices are starting to ease on higher competition from more competitive soybean oils, which in turn could lower the costs for restaurants and other UCO generators.

UCO prices *$/t*



Trade

Biodiesel and UCO

China's UCO exports rise ahead of tax changes

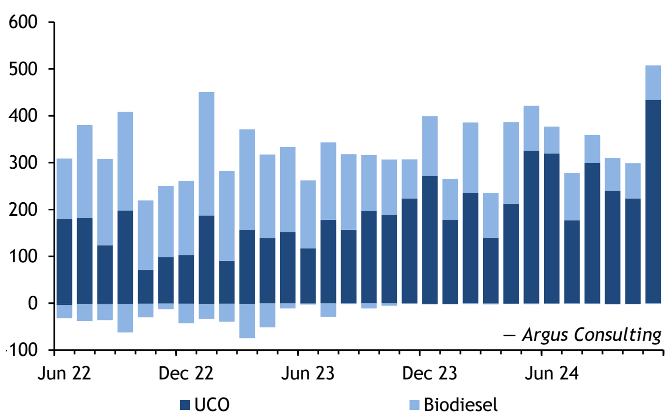
China's UCO exports reached a record 434,000t in November, almost double on the previous month and on a year earlier, as suppliers rushed to load UCO before 1 December when China's 13pc value-added tax rebate for UCO exports would end. China announced the UCO export rebate would be cancelled on 15 November, giving UCO exporters two weeks to expedite exports and continue to receive the rebate.

Exports to the US and Europe also hit new all-time highs, with the US remaining the largest single destination at 168,000t in November, up 37pc on the previous month, and accounting for 39pc of total exports. Exports rose sharply as uncertainty around the specifics of the 45Z tax credit policy change this year prompted higher demand from US buyers, as one change suggested by lawmakers would be a ban on biofuels produced from foreign feedstocks from earning the credit. Exports to Spain and the Netherlands both rose to 77,000t each, with Europe as a whole taking 184,000t as biofuel producers geared up for high product demand in 2025.

Malaysian demand rises on competitive pricing

Total Chinese biodiesel exports were 74,000t in November, down 2pc on the month. Singapore remained the largest destination, taking 37,000t, up 28pc on the previous month as biobunkering demand remained firm. Biodiesel exports to Malaysia almost doubled to 20,000t, a new record, as Malaysian buyers turned to lower-cost Chinese Ucome to meet domestic blending mandates. Malaysian palm oil methyl ester prices surpassed Chinese Ucome for the first time in early October and remained at a price premium until 19 December.

China biofuels and feedstock trade *'000t*



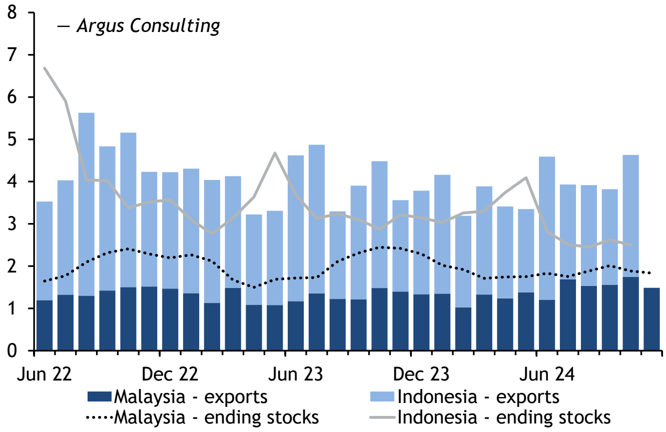
Malaysian PME prices firmed on the back of rallying palm oil prices in September, while weak European demand and anti-dumping duties kept pressure on Chinese Ucome prices over the same time period.

Palm oil

Malaysian palm oil stocks fall again in November

Malaysian palm oil exports fell 15pc in November to 1.5mn t as prices held firm on production issues and buyers turned to other vegetable oils, especially soybean oil. Output rates were down 10pc in November owing to monsoon rains affecting logistics. But ending stocks were more stable month on month, down 3pc to 1.84mn t. But this is down 24pc from November 2023, highlighting the ongoing supply tightness in palm oil markets that has driven prices up in recent months.

Asia-Pacific palm oil trade *mn t*



Indonesian palm oil exports rose 28pc in October to 2.89mn t, on the back of higher domestic production and lower ending stocks, which were down 4.6pc to 2.50mn t.

GLOBAL SUPPLY

Europe

Italy's Eni has resumed production at its 650,000 t/yr HVO plant in Gela, Italy, after scheduled maintenance to add a new SAF production unit, expected to be operational later this year.

UK recycling firm Eco Sustainable Solution has begun building a £15.6mn ($19.9mn) biomethane plant in Christchurch, Dorset. The plant will process 50,000 t/yr of food waste and produce 60GWh of biomethane, and is expected to come on line in January 2026.

Spanish firm Forestal del Atlantico reported it aims to reach a final investment decision for Triskelion, its 40,000 t/yr e-methanol project in Mugardos, Spain, by June.

Spain's Repsol has signed a supply agreement with German logistics firm DB Schenker to supply 17,000m^3 of HVO100 over the next two years for DB Schenker's Iberian fleet.

Eni's subsidiary Enilive has signed a SAF supply agreement with EasyJet to supply blended SAF for EasyJet's flights from Milan's Malapena airport to Oslo and Tromso airports in Norway. The second part of the deal also involves Enilive supplying an additional 30,000t of neat SAF to the airline at other airports in Italy.

North America

Global Clean Energy has started commercial operations at its Bakersfield, California, facility, producing 5,900 b/d of renewable diesel. The company supplied its first batch to Vitol as part of an offtake agreement.

Canadian biofuel producers Tidewater Renewables and Braya Renewables Fuels are considering idling their respective 3,000 b/d RD plant in British Columbia and 18,000 b/d RD plant in Newfoundland and Labrador this year.

US biodiesel producer Renewable Biofuels has announced plans to idle its 180mn USG/yr Port Neches biodiesel facility in Texas early this year.

US biodiesel producer Hero BX will idle its 50mn USG/yr plant in Erie, Pennsylvania, and 20mn USG/yr plant in Moundville, Alabama, for 2-4 weeks of routine maintenance this month.

US clean energy provider Proteum Energy has halted its plan to construct an ethanol-to-hydrogen facility in California. The company cited finance delays, uncertainty about California's regulation of CO_2 pipelines and production challenges as the reasons for withdrawing its application.

Neste has signed an agreement with Air New Zealand to supply 23,000t of neat SAF to the airline at Los Angeles and San Francisco airports until February 2026.

Parkland Corporation has supplied 101,000 litres of SAF to Air Canada, the country's first domestically produced SAF batch, from its 4,000 b/d co-processing unit in Burnaby, British Columbia, Canada.

Phillips 66 has signed an agreement to supply United Airlines with 3mn USG of SAF at Chicago's O'Hare International and 8mn USG of SAF to Los Angeles International by the end of the second quarter.

US biorefiner Pathway Energy has signed a feedstock supply agreement with UK biomass supplier Drax, which will supply 1mn t/yr of wood pellets from 2029 for Pathway Energy's 30mn USG/yr SAF plant in Port Arthur, Texas. The plant is expected to cost $2bn and start operations in 2029 using gasification and Fisher-Tropsch synthesis pathway.

South America

BP is set to partner with Brazilian logistics firm Prumo to supply HVO at Brazil's Açu port in northeastern Rio de Janeiro. BP cited the decision to import HVO comes in response to growing demand in the local market.

French agriculture company Tereos has received International Sustainability Carbon Certification (ISCC) EU and Corsia Plus certification for ethanol produced at its Mandu mill in Guaira, Sao Paulo. The certifications will allow Tereos to sell ethanol as a feedstock for SAF production.

Asia Pacific

The Asian Development Bank is set to provide biodiesel producer Safco Venture Holdings with a $86.2mn financial package to construct a 140,000 t/yr SAF plant in Sheikhupura, Punjab, Pakistan. The plant will use UCO as feedstock and will also produce 18,000 t/yr of bionaphtha.

Japan-based SAF producer Saffaire Sky Energy has acquired the ISCC's Carbon Offsetting and Reduction Scheme certification for SAF produced at its 30mn litres/yr facility in Osaka.

Samsung E&A has secured a $955mn contract to construct Eni and Petronas' planned biorefinery in Johor, Malaysia, within the Pengerang Integrated Complex. The plant will have a feedstock processing capacity of 650,000t and is expected to come on line in 2028.

Australian Oilseed Holdings is planning to build an 80,000 t/yr oilseed crushing plant in Emerald, Queensland, with operations set to begin in early 2027.

Middle East

Saudi Aramco, TotalEnergies and the Saudi Investment Recycling Company have partnered to conduct a feasibility study for a SAF plant in the Eastern Province of Saudi Arabia.

Argus *Biofuels Outlook* is published by Argus Media group

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London, WC1X 8NL
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ISSN: 2752-6976

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