NEWS REVIEW

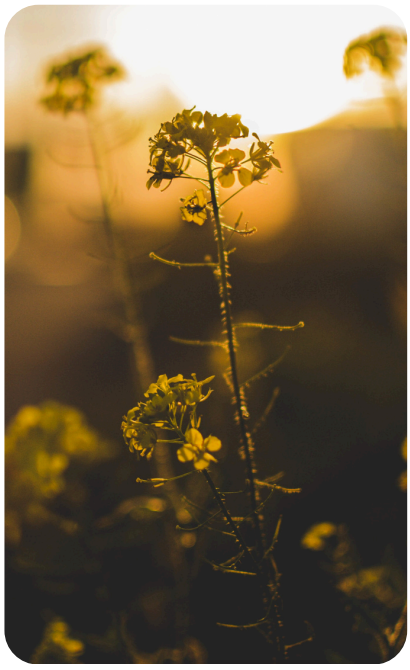
Alder BioInsights

January 2025

Feedstocks

Each month we review the latest news and select key announcements and commentary from across the Feedstocks and Biorefineries sector.

Announcements & Commentary



Research & Development

Providing clients with a strategic view of feedstock, technology, policy and marketing opportunity across the bioeconomy.

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FOREWORD

Welcome readers, to this month's Feedstocks and Biorefinery News Review.

Since early 2025, the UK's Sustainable Aviation Fuel (SAF) Mandate has required jet fuel suppliers to blend SAF, creating a clear legal framework to drive industry uptake, attract investment, and support supply chain growth. The government emphasises that only SAF with robust sustainability credentials and genuine GHG savings will qualify, and that policy stability will be maintained unless strong, evidence-based reasons justify change. As production technologies evolve, the mandate aims to ensure continued GHG reductions, alignment with carbon budgets, effective interaction with other low-carbon fuel policies such as the RTFO, and the development of a domestic SAF sector. The mandate is restricted to fuels produced from sustainable biogenic wastes or residues, recycled carbon fuels and efuels; crop-based fuels are excluded. However, the Government has now issued a call for evidence on the possible inclusion and role of crop-derived SAF. The consultation seeks to gain insights into feedstock availability, production costs, industrial impacts, and associated sustainability risks and regulatory safeguards.

US biofuel policy shifts under President Trump, seem to be driving a strong pivot toward domestic feedstocks, particularly soybean oil, as new rules and tariffs restrict the use of foreign materials. The Clean Fuel Production Tax Credit (45Z), which replaced the $1/USG blender's tax credit at the start of 2025 now limits eligibility to North American-sourced biofuels, cutting off foreign used cooking oil and tallow imports that once dominated the market. Alongside new proposals by Environmental Protection Agency (EPA) to halve RIN (Renewable Identification Numbers) credits for foreign fuels and record-high 2026–27 blending mandates, these measures have lifted domestic feedstock prices and boosted support for US suppliers. Soybean crush capacity has expanded 13% since 2022, yet crusher profitability remains uncertain amid delays in finalising federal mandates and ongoing 45Z guidance updates. Despite production cuts at major renewable diesel plants, 2026 is expected to see stronger soybean oil demand as tariffs, policy incentives, and diminishing credit advantages for waste feedstocks shift refiners toward domestically produced oils.

In trading markets, wheat futures have fallen to around $5.10 per bushel, near a two-month low, as global oversupply and easing geopolitical risks drive prices down over 7.5% this year. Record harvests of this cereal grass across the Northern Hemisphere, together with strong output from Argentina and reduced concerns over prolonged disruption in the Black Sea, have boosted exportable supplies. Increased Brazilian availability resulting from higher yields and large carryover stocks have flooded the market, while demand for industrial and feed use remains weak. Projections from the USDA and IGC show rising global production and inventories through 2026, leaving little fundamental support for wheat prices.

Ukrainian maize exports are running at their slowest pace in seven years despite a solid 2025/26 crop, as repeated attacks on rail and port infrastructure have significantly extended delivery times and increased logistics costs. This has constrained shipments even though Ukrainian prices have recently become more competitive than US and Brazilian supplies. Demand from key buyers such as Spain, Turkey and Egypt is currently subdued due to good local harvests, lower cost exporters – such as Brazil – and lower feed demand due to industry concerns over swine fever. With export potential around 25 million tonnes and less corn than usual shipped during the November–February peak, more volume is likely to be pushed into March–June, increasing the risk of price pressure later in the season as sellers seek buyers.

Read on for the latest news

Policy

Waste wood regulation update allows sites to exceed storage limits

Issued on Tuesday (16 December 2025), RPS 361 replaced the previous waste wood RPS and allows sites in England to temporarily exceed their permitted storage limits where they have been affected by unplanned downtime at end destinations such as biomass plants, incinerators and panel board manufacturing facilities.

The new RPS extended its scope to include sites storing waste wood destined for panel board manufacture, marking the first time these operations have been explicitly covered.

Such sites were excluded from the previous RPS 352, which was introduced in June 2025, despite repeated calls from the Wood Recyclers' Association (WRA) for the omission to be addressed...

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SAF Mandate: crop-derived sustainable aviation fuel

The Department of Transport are seeking evidence, as well as broader feedback, on crop-derived sustainable aviation fuel (SAF). This is to improve our understanding of the impacts and interactions on areas such as feedstock availability, industrial development, sustainability and regulation. It covers the following types of crops:

- energy crops
- cover crops
- food and feed crops

It should be noted that this categorisation may not be exhaustive, and we also welcome any comments on crops which respondents do not consider to be covered by the categories above...

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The Renewable Fuel Standard (RFS): An Overview

@DNY59 via Canva.com

The Renewable Fuel Standard (RFS) requires U.S. transportation fuel to include a minimum volume of renewable fuel each year. The RFS—established by the Energy Policy Act of 2005 (EPAct05; P.L. 109-58) and expanded in 2007 by the Energy Independence and Security Act (EISA; P.L. 110-140)—began with requiring 4 billion gallons of renewable fuel in 2006 and gradually increasing that requirement until it reached 36 billion gallons in 2022. However, for a variety of reasons, the statutory volume requirement for total renewable fuel—which may include both conventional biofuel and advanced biofuel—was not met from 2014 to 2022. As of 2023, the U.S. Environmental Protection Agency (EPA) has the authority to determine annual volume obligations.

EPA administers the RFS and is responsible for several related tasks. Using the statutory criteria, EPA evaluates which renewable fuels are eligible for the RFS program. EPA also monitors compliance with the RFS requirements using a system of tradable credits referred to as *renewable identification numbers* (RINs). From the program's inception through 2022, EPA established the amount of total renewable fuel that refiners and importers had to account for in the coming year based on statutory targets, fuel supply, and other conditions. EPA exercised statutory waiver authorities to reduce volumes when necessary. For the final nine years of the program's statutory annual requirements (i.e., the latter half of 2014 through 2022), EPA set the total renewable fuel volume below the statutory amount—using its waiver authorities—mainly due to underproduction of advanced biofuel...

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BB-REG-NET: Growing the UK's modern industrial bioeconomy

3.2.0 Regulations

While the UK is a global leader in research and early-stage innovation in bio-based technologies, companies face regulatory systems that are outdated, fragmented, and ill-suited to the novel characteristics of bio-based products136. Although UK regulations are theoretically feedstock-neutral, in practice they remain biased toward fossil-basedmaterials, reflecting legacy testing standards,performance benchmarks, and cost structures designed around fossil-based products.

This misalignment slows commercialisation, deters investment, and disproportionately impacts SMEs. Our Bio-Barometer Survey137 assessed the current landscape, opportunities, and challenges in the biobased chemicals and materials sector, gathering insights from over 100 stakeholders, including manufacturers, policymakers, and researchers.Stakeholders identified strategy and policy –including regulations – as the second-largest barrier to commercialisation.

The UK's bio-based policy framework was rated poorly (2.49/5), highlighting a lack of strong incentives and positive regulatory support for market development. Within the policy and regulatory landscape, regulationsthemselves were cited as the most significantbarrier, followed by broader policy issues,standards, and certifications.

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Markets

Wheat tumbles at year-end

@SUMALI IBNU via Canva.com

Wheat futures fell to around $5.10 per bushel, hovering near the nearly two month low of $5.04 reached on December 17, as a supply heavy backdrop has reversed earlier gains and left prices down more than 7.5% for the year.

Abundant Northern Hemisphere harvests and a record global crop alongside a bumper Argentine harvest have sharply increased exportable supplies just as fears of prolonged disruption in the Black Sea have eased, stripping out a key risk premium and overwhelming demand.

Brazil has reinforced the downward pressure, as Cepea notes that despite a much smaller planted area in 2025, improved yields and large carryover stocks lifted availability.

Demand has failed to keep pace, with industrial and feed usage unable to absorb the surplus, while USDA and IGC projections point to higher world output and elevated ending stocks in 2025 and 2026, leaving little structural tightness to support prices...

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Canola and rapeseed prices continue to fall on the world market

The increase in the forecast for global rapeseed production in MY 2025/26 to a record 95.273 million tons (which will exceed the previous season's figure by almost 10 million tons) and the fall in oil and vegetable oil prices continue to put pressure on canola prices in Canada and rapeseed in Paris.

January canola futures, after the release of the StatCan report and the USDA balance sheet, have already fallen by 8% since the beginning of December to 597 CAD/t or $433/t (-9.7% per month) against the backdrop of low canola export rates and falling rapeseed oil prices in the US.

According to the Canadian Grains Commission (CGC), from August to October 2025, Canada exported only 1.42 million tonnes of canola, half the amount exported in the same period in 2024 (3.03) million tonnes.

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Viewpoint: US policy shift elevates domestic feedstocks

US biofuel producers may increasingly turn to domestic feedstocks as restrictive biofuel and trade policies limit the use of foreign materials.
The clean fuel production tax credit, known as 45Z, launched in 2025 to replace the $1/USG blender's tax credit. Under 45Z, foreign used cooking oil (UCO) became ineligible for credits, while foreign tallow retained access until tariffs introduced in the third quarter disrupted trade. Starting in 2026, 45Z will apply exclusively to biofuels made from North American feedstocks, effectively excluding all other foreign products.

President Donald Trump's administration's push to curb imports aims to strengthen domestic feedstocks, particularly soybean oil, in US biofuel production. US soybean crush capacity has grown by 13pc since 2022, reaching 2.97bn bushels (bu)/yr with the addition of 10 new crush plants.

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Research & Development

Aviation Fuel Production from Tomato Residues: TU Graz Coordinates Visionary EU project

Waste from tomato processing will serve to power aircraft. Under the leadership of Graz University of Technology (TU Graz), the EU project ToFuel is developing a new biorefinery concept that will convert tomato residues into sustainable aviation fuel as well as into fertiliser, animal feed and nutritional oil. The research team is aiming for a waste-free and climate-neutral process that is also economically competitive and thus makes an important contribution to the defossilization of air transport...

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Teagasc unveils new study on agricultural feedstocks for Ireland's emerging biomethane industry

Teagasc announced the publication of a landmark research report assessing the potential for agriculture-based anaerobic digestion (AD) to support Ireland's growing biomethane industry.

The report, produced under the FLEET Project (Farm Level Economic, Environmental and Transport Modelling of Alternative Feedstocks for Regional Anaerobic Digestion), delivers the most comprehensive assessment to date of the economic viability, environmental impact, and logistical challenges involved in using grass and animal waste as a feedstock for biomethane production at a national scale...

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Grass2Gas: A USDA-NIFA sustainable agricultural systems project

@153photostudio via Canva.com

C-CHANGE: Grass2Gas is advancing research, education, and extension to support development of a new biobased value chain. The multi-institutional team from Iowa State University, Penn State University, and Roeslein Alternative Energy is assessing ways to increase the use of perennials and winter crops as feedstock for anaerobic digestion. The novelty of the project lies in leveraging a successful business model based on the digestion of manure to encompass new agricultural feedstocks, more diverse products, and increased value throughout the supply chain...

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Biomanufacturing discovers pondweed's potential

Pondweed is the biomanufacturing feedstock of the moment. These freshwater plants entered the mainstream in 2024, when Whole Foods included duckweed in its trend predictions for 2025.

Indeed, pondweed products hit the spotlight in 2025. US startup Plantible Foods opened a duckweed protein factory while the EU approved duckweed proteins for human consumption.

Foodtech isn't the only segment getting excited about aquatic plants. Sustainable polymers, biochemicals, and biobased fuels can all be derived from these chemically complex organisms. This versatility could make it the target of new investments into biobased supply chains.

Here's why biobased producers are turning to the feedstock...

Click here for more information.

Global-scale prevalence of low nutrient use efficiency across major crops

This study is published in Nature Communications and was led by Ji Liu from the Institute of Earth Environment, Chinese Academy of Sciences, alongside an international team including researchers from the Central China Normal University and CREAF-CSIC-UAB in Spain. The researchers compiled a massive global database consisting of 3,360 observations across 205 countries to track nitrogen and phosphorus use efficiency (NUE and PUE) from 1961 to 2018. Their objective was to understand the long-term dynamics of how major crops utilize these essential nutrients to better guide the transition toward sustainable agricultural practices and reduce global dependence on non-renewable fertilizers.

The analysis reveals that nutrient use efficiency remains suboptimal on a global scale, with particularly low levels in developing regions. The findings highlight that efficiency is highly context-dependent: while rice and wheat show optimal efficiency in tropical and temperate zones respectively, maize continues to suffer from significant inefficiencies. Specifically, the study points to massive nitrogen and phosphorus surpluses in maize production within China and the United States. By providing this spatially explicit mapping, the authors offer a framework for region-specific agricultural strategies intended to mitigate environmental damage, such as soil acidification and eutrophication, while maintaining food security.

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Biorefinery-based production of biodegradable bioplastics: advances and challenges in circular bioeconomy

Biodegradable bioplastics have emerged as promising alternatives to conventional plastics in the current scenario of growing demand for sustainable materials. However, the high costs associated with their production still interfere with the proper dissemination of these materials. The present review will deal with the different aspects of the production of biodegradable bioplastics in biorefineries as an approach for cost reduction and low waste generation, aligning with circular bioeconomy principles. By employing different types of biomass and conversion processes, bioplastics and their composites can be considered a valuable product in biorefineries, demonstrated by actual case studies and functional industries.

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Wood & Crops

AHDB: UK futures lift amid Black Sea risk: Grain market daily

@gan chaonan via Canva.com

UK feed wheat futures rose yesterday, except for the Jan-26 price, supported by concerns over the war in Ukraine and a rise in crude oil prices. May-26 futures gained £1.20/t to settle at £171.20/t, while the Nov-26 contract gained £1.75/t to close at £174.20/t. Meanwhile, the Jan-26 contract fell due to technical factors ahead of its expiry next month.

Yesterday, the market focused on the recent airstrikes against Ukrainian ports and the risk of disruption to trade, with some traders reportedly repositioning ahead of the Christmas period. This, alongside the situation between the US and Venezuela, helped crude oil prices recover some lost ground after the near five-year low reached early last week. Brent nearby futures closed at $62.07/barrel yesterday, up $1.60/barrel from Friday and its highest close since 9 December. High global supplies limited grain price gains.

The uplift in crude oil prices also helped oilseed prices to rise, though like grains, the gains were limited by optimism over global supplies. Winnipeg canola futures reported the largest gains, though there was also wider support for oilseed and vegetable oil prices. May-26 Paris rapeseed futures closed at €452.25/t, up €2.00/t while the Nov-26 contract €447.00/t, up €2.50/t...

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Ukrainian corn exports slowest in seven years – discussing what's next at the ICX Summit 2026

@Wolfgang Weiser via Canva.com

Even though Ukraine is expected to have a larger crop in 2025/26, corn exports are currently moving at their slowest pace in years due to logistical issues, raising questions about how long this situation will persist and what the outlook is for the second half of the season under current conditions.
That might be one of the key topics discussed at the Intercontinental Commodity Exchange ICX Summit, to be held at Dubai's Museum of the Future on January 29, 2026.

Until that time has come, here is the summary of the current situation in the market.

Ukrainian corn exports for the period July-December 2025 reached just 5.9 million tonnes, according to the latest available operational customs statistics, just over half the 9.8 million tonnes shipped over the same period last season...

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USDA lifts corn production estimate: Wasde

The US Department of Agriculture (USDA) increased its US corn yield and harvested acreage estimates for the 2025-26 marketing year, boosting estimated production by 1.6pc.

According to the January update of the USDA's flagship World Agricultural Supply and Demand Estimates (Wasde) report, US corn production is now pegged at 432mn metric tonnes (t), a 6.83mn t gain from the month prior. The production boost comes from a 1.3mn acre increase to harvested acreage — despite planted acres only rising by 100,000 acres — and a nearly 3pc increase to yields.

Market participants had pegged the USDA's previous yield estimates as optimistic and had expected the January Wasde to feature a downward revision to corn production, not an upward one...

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Corteva and bp launch biofuel feedstock joint venture Etlas™

Corteva Inc. and bp today announced the launch of Etlas, their new 50:50 joint venture that will produce oil from crops – including canola, mustard and sunflower – for use in the production of biofuels like sustainable (or synthetic) aviation fuel (SAF) and renewable diesel (RD). Etlas will harness both Corteva's century-long expertise in seed technology to develop crops ideally suited to produce SAF and RD as well as bp's expertise in refining and marketing fuel for the commercial transportation market.

Etlas aims to produce one million metric tonnes of feedstock per year by the mid-2030s, which could produce over 800 thousand tonnes of biofuel. Initial supply is scheduled to begin in 2027 for use in co-processing at refineries as well as at dedicated biofuels plants...

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Biorefinery

World's first dynamic green ammonia plant starts operations in Denmark

@John Kevin via Canva.com

Topsoe, a global leader in carbon emission reduction technologies, and its partners Skovgaard Energy, a Danish developer of green energy assets, and Vestas, the global leader in wind energy solutions, have reached a major milestone in their partnership: The world's first dynamic green ammonia plant is now in operation and producing green ammonia.

First of a kind, the plant demonstrates a dynamic approach, which entails that the plant will adapt to the inherent fluctuations in power output from the renewable power sources in integration with the plant's electrolysis and ammonia synthesis loop. This will ensure optimal production and improve cost-effectiveness of green ammonia.

The dynamic approach is important as it optimizes operations and ensures less need for costly storage solutions of green hydrogen or renewable power.

Kim Hedegaard, CEO Power-to-X at Topsoe, said:

> 'This is a significant achievement. By working across the value chain, we're accelerating green ammonia as a pathway to diversify our energy supply and decarbonize energy-intensive industries and long-distance transportation like shipping and agriculture.'

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MTU launches green biorefinery backed by grassroots research to reduce carbon footprint

Munster Technological University (MTU) has launched a new pilot green biorefinery at its Kerry Campus, marking an important milestone in Ireland's move towards sustainable agriculture and a circular bioeconomy.

The facility will develop technologies that convert the country's richest resource, which is its grasslands, into a range of valuable products, including high-quality animal feeds, human-grade protein, high-value ingredients and bioenergy...

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POET Bioprocessing - Shelbyville to expand, double production

POET, the world's largest producer of biofuels, has announced it will expand POET Bioprocessing – Shelbyville, doubling the facility's bioethanol production capacity.

Jeff Lautt, POET President and COO has said:

> 'This expansion reflects POET's confidence in the future of biofuels and our commitment to American agriculture and domestic energy production. By growing this facility, we're strengthening markets for local farmers, creating good-paying rural jobs, and ensuring we can meet the growing global demand for our suite of bioproducts.'

The expansion will double POET – Shelbyville's bioethanol production from 98 million gallons to 193 million gallons. The upgraded facility will also double its dried distillers grains and corn oil output, add 20 new full-time team members, and grow local grain demand for area farmers.

Click here for more information.

CIMC Enric announces commissioning of China's first large-scale bio-based green methanol project

CIMC Enric Holdings Limited together with its subsidiaries ("CIMC Enric" or the "Group") is pleased to announce that China's first large-scale bio-based green methanol project, developed by the Group, was officially commissioned in Zhanjiang, Guangdong Province on December 16. The commissioning ceremony was attended by a distinguished lineup of guests, including Mr. Gao Xiang, President of CIMC Group and Chairman of CIMC Enric; Mr. Li Yinhui and Mr. Wang Xiaoyan, Vice Presidents of CIMC Group; Mr. Yang Xiaohu, Executive Director and President of CIMC Enric; Mr. Yu Gang, Secretary of the CPC Zhanjiang Municipal Committee; MissAmy Chan, Deputy Secretary for Transport and Logistics, Hong Kong SAR; Mr. He Fugang, General Manager of SDIC Bio-Energy; as well as global partners and industry experts, all gathering to witness this landmark moment for China's clean energy sector.

Situated in Zhanjiang, Guangdong, this project stands among China's pioneering initiatives to build a fully closed-loop industrial chain spanning "biomass residues → green methanol → marine fuel". Its commissioning marks a pivotal leap in CIMC Enric's strategic expansion—extending the Group's footprint from hydrogen energy into advanced clean liquid fuels, while offering a pragmatic, deep-decarbonization solution tailored to the global maritime industry...

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Others

W2E Renewable Solutions looks to animal waste to produce sustainable fillers

@Optimusius1 via Canva.com

W2e's innovative technology relies on thermolysis to cleanly convert livestock manure waste into clean commodities.

Their process results in a clean graphite char and a hydrogen-rich gas stream that can be processed on-site into hydrogen, renewable natural gas, or methanol or burned on-site to generate electricity.

Key benefits of their technology solution include:

- Best-in-class carbon index scores that outperform those of anaerobic digestion by a substantial margin
- Industrial-scale modular plants designed for industrial-scale livestock operations (hundreds of tons per day of manure)
- Limited technology risk resulting from our process's intentional reliance on proven process components
- 100% conversion of our feedstock (manure) into safe and/or usable products, creating a better and cheaper solution for our suppliers (livestock farmers), who will not be left with solid waste to manage, and yielding a safer, cleaner solution for the environment through elimination of potentially pollutive nitrogen compounds

Click here for more information.

Events

21st - 23rd January 2026
8th Central European Biomass Conference (CEBC) 2026
Graz, Austria

Click here for more information

22nd - 23rd January 2026
Horizon Europe Info Days (Cluster 6) 2026
Brussels, Belgium

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25th - 26th February 2026
Lignofuels 2026
Helsinki, Finland

Click here for more information

9th - 11th March 2026
Fastmarkets Forest Products Europe Conference 2026
Barcelona, Spain

Click here for more information

10th - 11th March 2026
IBioIC Annual Conference 2026 (IBioIC26)
Glasgow, UK

Click here for more information

14th - 15th April 2026
Biofuels International Conference & Expo 2026
Barcelona, Spain

Click here for more information

21st - 23th April 2026
Argus Biomass Conference
London, UK

Click here for more information

19th - 22th June 2026
34th European Biomass Conference and Exhibition 2026
The Hague, Netherlands

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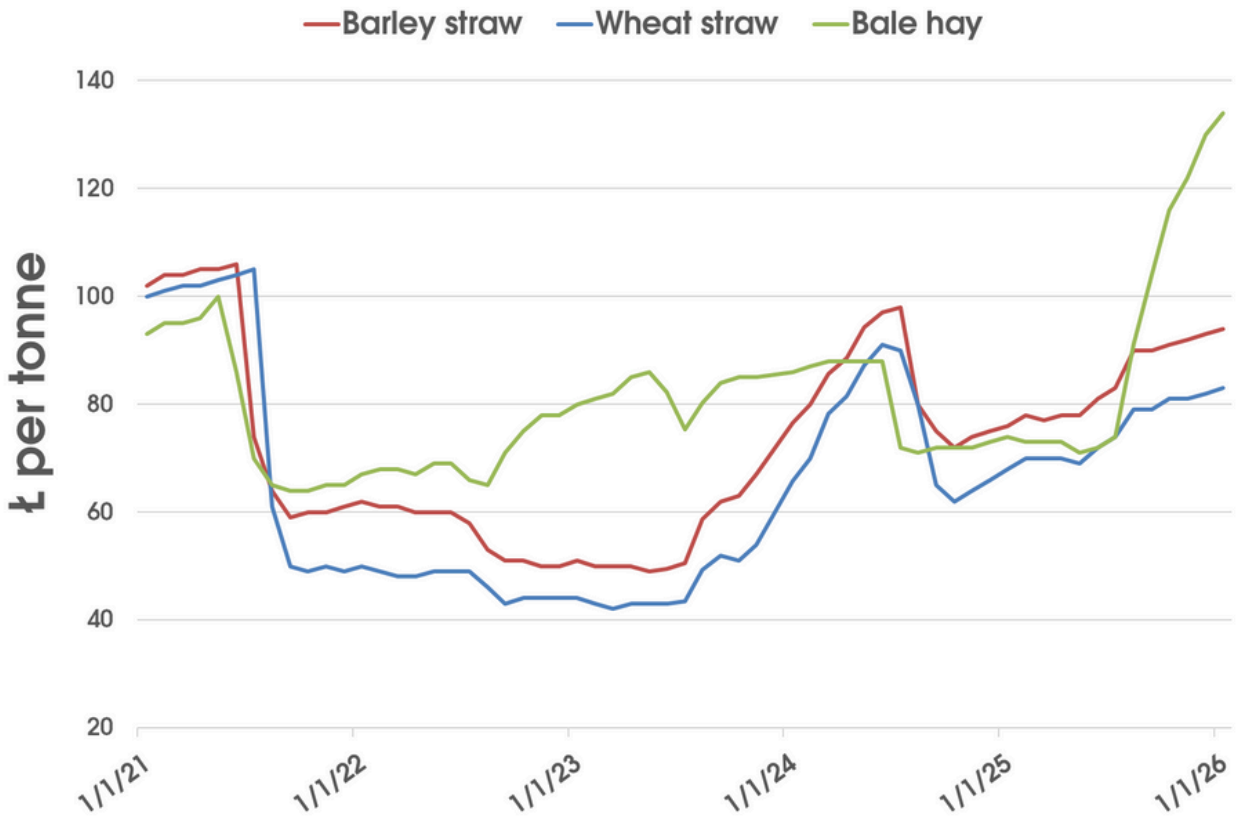
Feedstock prices

UK spot prices of bagged wood pellets, delivered. Grain and oilseed prices are across all main regions of the UK.

	Wood Pellets	Milling wheat	Feed wheat	Feed barley	Oilseed rape
	£/kg, 5% VAT	£/tonne, ex-farm	£/tonne, ex-farm	£/tonne, ex-farm	£/tonne, ex-farm
High	0.42	182.00	184.00	209.00	406.00
Low	0.34	173.00	152.00	144.00	161.00
Average	0.38	176.33	165.27	158.18	377.18

For wood pellets prices we consider UK pellet traders advertised selling prices.
For details on grains and oilseed prices, see Farmers Weekly.

Monthly prices of ex-farm Hay and Straw in England and Wales. Prices shown are for 5 years up to December 2025.



Source: British Hay and Straw Merchants' Association, Defra

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Alder BioInsights is a leading international consultancy with expertise on the conversion of biomass to bioenergy, biofuels and biobased products.

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