Bioeconomy & Low Carbon Technology Overview for July 2025

Our summary of low carbon technology developments for July 2025 is based on data and information collated by Gifford Consulting and provided on the website: Gifford Consulting

Highlights by Topic: July 2025

More information on these articles can be found on our website dashboards.

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Biobased chemicals

1. **Biobased chemicals**: Denmark. Cellugy's BIOCARE4LIFE project has received significant EU funding to accelerate production scale-up towards commercialization for Cellugy's biofabricated materials platform, EcoFLEXY. The platform's debut product, EcoFLEXY Rheo, is the world's first high-performance rheology modifier that is fully biobased, biodegradable, and competitively priced, offering the personal care industry an alternative to microplastics and fossil-based ingredients, without compromising texture or skin feel. Cellugy, a Danish

industrial biotechnology startup developing innovative, biobased solutions to replace fossil-based materials in the personal care sector, has secured €8,1M to support scaling up the production of its biofabricated cellulose-based rheology modifier material, EcoFLEXY. Link 04/07/2025

2. **Biobased chemicals**: Germany. Beckers Group announced collaboration with Anodyne Chemistries to develop world-first renewable chemicals - Hexahydrophthalic Anhydride (HHPA). HHPA is an essential component in high-performance coating formulations. However, its carbon intensity is a significant contributor to the carbon footprint of Beckers' high-performance coatings, and it is fully derived from petrochemical feedstocks. There are currently no sustainable HHPA alternatives on the market. Anodyne is pioneering a sustainable way to produce HHPA using CO_2 by engineering entirely new enzymes. Their innovative process also uses renewable electricity to power these enzymes, replacing carbon-intensive energy and significantly lowering the environmental impact of HHPA production. Link 10/07/2025
3. **Biobased chemicals**: The Netherlands. Avantium N.V, signed a conditional offtake agreement for five years with PLIXXENT, a leading producer of polyurethane systems. Under this offtake agreement, PLIXXENT will purchase FDCA (furandicarboxylic acid), produced in Avantium's FDCA Flagship Plant, for the use in foams for insulation materials. 100% plant-based and high-performance monomer, FDCA is emerging as a promising building block for sustainable materials. PLIXXENT has positively evaluated its application in polyester polyols and derived insulation polyurethane foams. FDCA-based insulation foam offers significant environmental benefits compared to traditional petrochemical-based foams. Link 23/07/2025
4. **Biobased chemicals**: USA. Qore, a joint venture of Cargill and Germany-based HELM, is officially starting production of QIRA®, the world's first large-scale 1,4-butanediol (BDO) made from locally grown dent corn. QIRA is derived from annually renewable crops and serves as an impactful alternative to a fossil-derived equivalent used in the manufacture of consumer goods. The new facility is set to produce 66,000 metric tons of QIRA, using corn grown primarily within 100 miles of the site. As the world's largest facility of its kind, it marks a major step forward in meeting global demand for more sustainable materials in everyday consumer products. Link 29/07/2025
5. **Biobased chemicals**: USA.Bakelite announced the acquisition of Sestec, a Poland-based company known for its sustainable, protein-based adhesives for wood and composite products. By integrating Sestec's technology, Bakelite expands its portfolio of sustainable adhesive solutions on a global scale. Link 29/07/202.

Biobased Plastics

6. **Biobased plastics**: The Netherlands. Avantium signed a capacity reservation agreement with Royal Hordijk, a Dutch producer of sustainable plastic packaging solutions. Under this agreement, Hordijk has secured volumes of Avantium's 100% plant-based and recyclable polymer PEF (polyethylene furanoate) from future license plants for use in trays and injection-molded packaging across a range of applications, including food, cosmetics, and other consumer goods. Link 01/07/2025.

Biodiesel

7. **Biodiesel**: United Kingdom. Greenergy began consultation on a proposal to cease production at its biodiesel plant in Immingham, Lincolnshire. Despite significant cost reductions to improve the plant's viability, the Immingham plant has continued to be negatively impacted by market factors, including slower increases in the UK's biofuels blending mandates

compared to European countries and competition from subsidised US-origin products. Link 14/07/2025

Biofuels

8. **Biofuels**: Australia. In Australia, the country has a A$36 billion opportunity to establish a world-leading low carbon liquid fuel (LCLF) industry, reduce emissions by 230 million metric tons by 2050, and lessen reliance on imported fuels – but only if it acts promptly, according to a landmark report from the CEFC and Deloitte. The report, Refined Ambitions: Exploring Australia's Low Carbon Liquid Fuel Potential, finds that LCLFs are crucial to Australia's net zero future, particularly for sectors such as aviation, mining, heavy freight, and defence, where electrification is challenging. Link 16/07/2025
9. **Biofuels**: Australia. Licella is progressing with engineering work and site investigations for Project Swift, a proposed biorefinery in the Bundaberg region, supported by an $8 million grant from the Australian Renewable Energy Agency (ARENA). The project has now entered a critical phase, moving closer to Front-End Engineering Design. Project Swift, to be located next to the Isis Central Sugar Mill, will utilise Licella's proprietary Cat-HTR™ hydrothermal liquefaction (HTL) technology to convert sugarcane residues—such as bagasse—into low-carbon liquid fuels (LCLF). Once operational, the facility is expected to produce up to 60 million litres of low-carbon fuel annually, including approximately 40 million litres of sustainable aviation fuel (SAF). Link 08/07/2025
10. **Biofuels**: Latvia. With an investment of €120 million and the creation of 120 jobs, Amber Flow Fuels company will start producing innovative, high value-added products as early as 2027. Construction of the first renewable fuel production plant in the Baltic States for hydrotreated vegetable oil (HVO) and sustainable aviation fuel (SAF) will start in Kundziņsala, the most dynamically growing area of the Port of Riga. The Amber Flow Fuels production facility in the Port of Riga will provide 100% of the required SAF for the Baltic market. 70% of the produced SAF will be exported, increasing Latvian exports by at least EUR 150 million. Link 30/07/2025
11. **Biofuels**: USA. XCF Global, Inc. says since commercial operations began in February 2025, New Rise Reno has produced more than 2.5 million gallons of renewable fuels. This production milestone includes SAF, renewable diesel, and renewable naphtha, a byproduct of the production process that is a valuable blendstock. Link 10/07/2025

Biogas

12. **Biogas**: Canada. Hydron Energy Inc. received the first order for its first of the kind commercial INTRUPTor-Mid biogas upgrading plant. Hydron will manufacture, deliver, and commission the Renewable Natural Gas Plant in eastern Ontario, Canada. Hydron Energy's Intensified Regenerative Upgrading Platform Technology (INTRUPTor™) simplifies the plant design as well as fabrication requirements. As a result, the INTRUPTor reduces capital and operating costs by up to 50% and delivers 80% lower greenhouse gas emissions compared to other available commercial products. Link 10/07/2025
13. **Biogas**: Germany. OnTurtle made the leap to BioLNG in 2025, with the first Bio LNG fuelling stations in Germany. Thanks to a clear expansion strategy, our network of BioLNG filling stations has now reached 55 locations in Europe. Link 31/07/2025.
14. **Biogas**: Italy. Biorig, the renewable gases division of Spanish energy group Solarig, announced a significant expansion of its biomethane operations in Italy. The company plans to invest more than €300 million by 2030 to develop and operate over 20 biomethane production plants across the country. These facilities are expected to produce around 1

terawatt-hour (TWh) of energy annually—equivalent to 90 million cubic metres of biomethane—enough to supply approximately 360,000 Italian households each year. Italy offers a compelling opportunity thanks to its strong regulatory support for biomethane, robust organic waste management systems, and clear recognition of the agronomic benefits of biofertilisers. Link 10/07/2025

15. **Biogas**: Italy. The European Investment Bank (EIB) has approved a loan of up to €264 million to Snam, with the aim of facilitating the integration of biomethane production plants into Italy's energy infrastructure. This financing will enable the construction of 240 kilometres of new gas pipelines dedicated to connecting plants producing biomethane from renewable sources with the national gas transmission network. Link 30/07/2025
16. **Biogas**: Poland. ORLEN and Krajowa Grupa Spożywcza (KGS), Poland's largest state-owned agri-food group, have entered a memorandum of understanding to develop a nationwide biomethane portfolio. Link 17/07/2025
17. **Biogas**: United Kingdom. Bluemethane installed its first production-scale methane capture unit in partnership with ReGenEarth at a biogas plant. The technology aims to recover the residual methane present in the digestate the post-processing sludge of anaerobic digesters, which would normally be released into the atmosphere and wasting energy and contributing to emissions. The process simulates the shaking of a soda bottle, using turbulence and pressure changes to separate the dissolved methane. The captured gas, which contains methane and carbon dioxide, can be repurposed, increasing the energy efficiency of the plant. In addition, the system allows the recirculation of the sludge, optimizing production. Return on investment includes higher generation of biogas, raw material savings and potentially the emission of avoided carbon credits. Link 04/07/2025
18. **Biogas**: USA. Aemetis, Inc. says the California Air Resources Board (CARB) has approved provisional pathways under the Low Carbon Fuel Standard (LCFS) for seven dairy digesters built and operated by Aemetis Biogas, a subsidiary of the Company. The pathway approvals are effective as of January 1, 2025. The average carbon intensity for the seven approved pathways is -384, with carbon intensities ranging from -327 to -419. Link 02/07/2025.

Biojet/SAF

19. **Biojet/SAF**: Croatia. Chevron Lummus Global (CLG) announced a successful commercial test for co-processing biogenic feedstocks and fossil feedstocks at INA Group's Rijeka Refinery in Croatia. Conducted at a CLG-licensed hydrocracking unit, the test marked the refinery's first-ever production of sustainable aviation fuel (SAF) and also yielded hydrotreated vegetable oil renewable diesel. Link 31/07/2025.
20. **Biojet/SAF**: France. Natural State Renewables announced a strategic partnership with Axens and its technology partner thyssenkrupp Uhde to use the innovative, proven BioTfueL technology to produce SAF made from surplus forest biomass such as pre-commercial thinnings and slash. This fully integrated process was developed by 6 major players in the decarbonization field, Avril, Axens, CEA, IFP Energies nouvelles (IFPEN), TotalEnergies and thyssenkrupp Uhde. Natural State Renewables expects to utilize a combination of feedstock, process configuration, power generation, and capture of CO_2 emissions to produce SAF with negative GHG emissions. Link 09/07/2025.
21. **Biojet/SAF**: Hong Kong. In Hong Kong, EcoCeres announced the signing of a multi-year agreement to supply British Airways with sustainable aviation fuel (SAF). This strategic partnership is expected to help the UK's flagship carrier reduce lifecycle carbon emissions of approximately 400,000 metric tons, compared with use of the same volume of conventional jet fuel. Link 02/07/2025

22. **Biojet/SAF**: Malaysia. SEDC Energy (SEDCE) is collaborating with Sulzer Chemtech to deploy its proprietary BioFlux technology at Sarawak's upcoming Sustainable Aviation Fuel (SAF) pilot plant. The facility will convert locally sourced HEFA (Hydroprocessed Esters and Fatty Acids) feedstocks – including algae oil, palm oil mill effluent (POME), animal fats and used cooking oil (UCO) – into SAF. Sulzer will support SEDCE throughout the project, including process design engineering, detailed design, and modular plant supply. Once construction is complete, it will also deliver commissioning, and startup services. Sulzer's involvement marks a key milestone in advancing sustainable aviation across Southeast Asia. Link 16/07/2025
23. **Biojet/SAF**: New Zealand. A new study by Cyan Ventures, with support from Boeing, suggests that producing sustainable aviation fuel (SAF) within New Zealand to supply 30% of the country's jet fuel demand by 2050 could generate NZD 1.3 billion in Gross Value Added (GVA) and create around 5,700 jobs. The move would also enhance New Zealand's fuel security. In addition to economic and environmental benefits, the study notes that embracing SAF could help protect an estimated NZD 4.1 billion in tourism revenue and NZD 200 million in trade revenue through 2050. As more countries move to decarbonize aviation, demand for SAF is expected to become standard for both businesses and travellers. Link 22/07/2025
24. **Biojet/SAF**: Singapore. Neste and DHL Express deepened their partnership with a new agreement to supply 7,400 tons (equivalent to 9.5 million litres) of unblended Neste MY Sustainable Aviation Fuel™ to DHL at Singapore Changi Airport, starting in July 2025. Under this expanded global agreement aimed at decarbonizing both air and road logistics, Neste will provide CORSIA-eligible* SAF, produced at its Singapore refinery—the largest SAF production facility in the world. The fuel will be supplied over a 12-month period, from July 2025 to June 2026. Link 16/07/2025
25. **Biojet/SAF**: Uruguay. Avalon Energy Group and Sulzer Chemtech announced the signing of a Strategic Alliance and Partnership Agreement to scale up the production of Sustainable Aviation Fuel (SAF). Under the agreement, Avalon has selected BioFlux™ technology for its portfolio of SAF projects currently under development worldwide which will lead to a commercial technology licensing agreement with Sulzer. The partnership's first project will be Avalon's flagship biorefinery in Uruguay. Link 16/07/2025
26. **Biojet/SAF**: USA. Syzygy Plasmonics is developing a first-of-its-kind commercial project in Uruguay—now supported by Fischer-Tropsch technology leader Velocys. The NovaSAF 1 facility will convert dairy waste and biogas into drop-in jet fuel with a capacity of 500,000 gallons annually, using only renewable electricity and waste gas—no green hydrogen, no complex gasification. At the heart of the project is Syzygy's light-driven GHG e-Reforming technology, which produces the ideal 2:1 syngas ratio for Fischer-Tropsch (FT) synthesis directly from biogenic methane and CO_2. This breakthrough eliminates the need for water-intensive steam reforming or expensive electrolyzers, radically simplifying the SAF value chain. Link 18/07/2025.
27. **Biojet/SAF**: USA. XCF Global shared its strategic plan to invest close to $1 billion in developing a network of SAF production facilities, expanding its U.S. footprint, and advancing its international growth strategy. From inception, approximately $350 million has been invested to bring New Rise Reno online which has created approximately 60 full-time management, engineering, and related jobs in the Reno-Tahoe area. In addition to its U.S. pipeline, XCF is pursuing an international growth strategy to expand its platform into high-potential global markets. The company recently signed a Memorandum of Understanding (MOU) to launch New Rise Australia, a new SAF and renewable diesel production platform in partnership with Continual Renewable Ventures. Link 14/07/2025.

Biomaterials

28. **Biomaterials**: Belgium. Syensqo and Microsoft have signed a MoU to explore a strategic collaboration aimed at accelerating digital innovation and sustainable materials development. By combining Syensqo's deep scientific expertise with Microsoft's leadership in AI and cloud computing, the companies will work together to unlock new opportunities across research, manufacturing, and product development. In R&D, Syensqo is leveraging AI to design entirely new polymers by generating and screening millions of hypothetical molecules, drastically reducing discovery time. The company is also combining AI with robotics in its formulation labs – most notably to create biosourced, biodegradable shampoo ingredients. https://renewable-carbon.eu/news/syensqo-and-microsoft-sign-memorandum-of-understanding/07/07/2025
29. **Biomaterials**: Finland. Kiilto pioneers the use of bio-based and recycled-carbon raw material, significantly reducing emissions from wood adhesives production. By reducing the carbon footprint of its products, Kiilto helps its customers to reduce their indirect (scope 3) emissions. As one of the concrete steps to reach a 15% carbon footprint reduction, Kiilto uses a raw material that contains bio-based content and recycled carbon. It is used to manufacture Kiilto´s wood adhesives that typically serve the furniture manufacturing industry. Link 21/07/2025.
30. **Biomaterials**: South Korea. Two companies have combined to successfully developed yarns and finished products such as carpets and mats using SK chemicals' differentiated CR (Chemical Recycled) PET material solution. Durmont, an Austrian automotive carpet manufacturer, produces carpet roll goods for approximately 7 million vehicles annually. In 2023, Durmont was acquired by Visscher-Caravelle Group (VC) — a Dutch Tier1 supplier of Car Floor Mats and other automotive accessories with a market share of over 40% in the European market. VC supplies to several major European automotive brands. Link 09/07/2025.

CO2 Removal

31. **CO2 removal**: Germany. ICODOS GmbH, the Karlsruhe Institute of Technology (KIT) and Mannheim's urban drainage company (EBS) announced a project that will produce sustainable fuels from wastewater and electricity in a first-of-its-kind facility. The patented process makes it possible to efficiently clean the biogas and convert it into methanol in conjunction with electricity and hydrogen. The electricity is used for electrolysis to produce hydrogen. This then reacts with the CO2 dissolved from the biogas. The entire process is designed to remove unavoidable CO2 from the system, thereby helping to reduce greenhouse gases. The "e-methanol" produced ultimately serves as a sustainable shipping fuel. Link 15/07/2025
32. **CO2 removal**: Switzerland. Climeworks, secured USD 162 million in additional equity funding — marking the largest carbon removal investment of 2025 to date globally. Climeworks surpasses USD 1 billion in funding, fueled by strong investor confidence. The new capital will fuel the continued development of Climeworks' best-in-class DAC technology to bring down the cost of removals. Climeworks has achieved major milestones in scaling its groundbreaking technology. Its first plant, Orca, successfully validated the company's approach. In addition, the second plant, Mammoth, is driving further advancements by enabling scaling and large-scale testing of new removal technologies. Link21/07/2025.
33. **CO2 removal**: United Kingdom. Seabound announced it installed its compact carbon capture system aboard the UBC Cork, a 5,700 GT cement carrier, marking the first deployment of the technology on a working vessel. The unit is designed to capture up to 95% of CO_2 from the

ship's exhaust using calcium hydroxide, turning emissions into limestone for use at Heidelberg Materials' nearby cement plant. The system is housed in a standard container and can be retrofitted without major vessel modifications. Link 18/07/2025.

E-Fuels

34. **E-fuels**: France. Axens, in collaboration with IFP Energies nouvelles (IFPEN) and SMS group successfully homologated the CarboverseoTM technology. This innovative reverse water-gas shift process, which converts CO2 into CO, is now live and ready to revolutionize the e-fuel industry by providing a robust and scalable solution for transforming CO2 into valuable products. Link 02/07/2025
35. **E-fuels**: France. Khimod raised €23m ($27m) from investors to advance the industrialisation of its low-carbon hydrogen power-to-X (PtX) technologies and projects. Khimod will enter a commercialisation phase for its core offering with the financial backing – its heat exchanger-reactors used to convert green hydrogen and captured CO2 into e-methanol, e-methane, and eSAF. Link 04/07/2025
36. **E-fuels**: Germany. Synhelion has fueled a car with solar gasoline for the first time ever – a global first for road transportation. The 1985 Audi Sport quattro, part of the AMAG Classic car collection, became the first vehicle in history to run on solar gasoline produced at Synhelion's industrial-scale plant DAWN in Jülich, Germany. Link. 31/07/2025.
37. **E-fuels**: Prometheus Fuels (Prometheus), the company making low-cost carbon-neutral fuels from direct air capture and renewable electricity, today announced it has reached commercial readiness for its proprietary e-Fuel production system. The company's Titan Forge Alpha prototype has successfully integrated a full-scale 50-cell Faraday Reactor validating its core technology at TRL 9, the highest benchmark for real-world deployment and system maturity. With this milestone, Prometheus becomes the only company capable of producing low-cost carbon-neutral e-Fuel using direct air capture (DAC) and intermittent renewable energy, fully off-grid. The company also stands apart from other e-fuel producers in not needing subsidies or hydrogen. Its Titan Forge Alpha plant, the world's first operational DAC synthetic fuel facility, is already generating e-methanol from air and solar power. Link 30/07/2025.
38. **E-Fuels**: Spain. Moeve (formerly Cepsa) and Zaffra, a joint venture between Sasol and Topsoe, announced the signing of a MoU that will see the Spanish energy firm and the Amsterdam based e-SAF developer take a step forward to advance European aviation fuel. The collaboration combines the credentials of Moeve, a leading Spanish supplier of jet fuel including sustainable aviation fuels, with Zaffra's technology and asset development expertise. Under the agreement, the partners will jointly assess the feasibility of developing e-SAF facilities in Southern Spain, where Moeve is developing one of Europe's most ambitious green hydrogen projects, the Andalusian Green Hydrogen Valley. Link 31/07/2025.
39. **e-fuels**: Spain. Moeve is exploring developing sustainable aviation fuels (SAF) at its planned 2GW green hydrogen hub in Andalusia. Moeve and Zaffra say they aim to support the ReFuelEU Aviation sub-target of at least 1.2% of jet fuel supplied at EU airports be synthetic by 2030. Moeve inked a memorandum of understanding (MOU) with Sasol-Topsoe joint venture (JV) Zaffra to explore the use of its technology in developing e-SAF plants. Link 17/07/2025
40. **E-fuels**: Uruguay. Syzygy Plasmonics announced development of a Front-End Engineering and Design with Kent for NovaSAF 1, the world's first electrified biogas-to-SAF facility. The site will serve as a model for scalable, low-cost sustainable aviation fuel production. Located in Durazno, Uruguay, NovaSAF 1 will produce over 350,000 gallons of ASTM Certified SAF

annually, marking a breakthrough in cost-effective, scalable clean fuel. The project is backed by long-term feedstock and site agreements with Estancias del Lago (EDL), one of Uruguay's largest dairy and agri-energy operations. Powered by Syzygy's proprietary NovaSAF™ platform, the facility combines the benefits of biogas and Power-to-Liquids (PtL) technologies, leveraging waste as feedstock, eliminating the need for pipelines or costly separation while achieving ultra-low water use and carbon intensity. Link 01/07/2025.

Feedstock

41. **Feedstock**: France. TotalEnergies and Quatra, a European market leader in the collection and recycling of used cooking oil, have signed a 15-year agreement beginning in 2026, for the supply of 60,000 tons a year of European used cooking oil to TotalEnergies' biorefineries. This deal contributes to secure the feedstock to produce biodiesel and SAF. Quatra is the European leader in the collection and recycling of used cooking oil. With operations in ten countries, Quatra specializes in sustainable oil management solutions for the food and catering industries. Link 15/07/2025
42. **Feedstock**: USA. Documents published ahead of GSNR's June 25 board of directors meeting indicates that the organization received more than 5,500 public comments in response to the DEIR and had identified three viable paths forward for a bioenergy project. The board, however, voted to move forward with a plan revise the scope of the project, which could include reducing the size and throughput of both facilities while transitioning from producing wood pellets for export to the production of wood chips for domestic use. GSNR noted wood chips could have applications in domestic alternative energy production, such as sustainable aviation fuel (SAF), marine biofuels, or in bioenergy with carbon capture and storage (BECCS) applications. Alternatively, wood chips can be used to produce wood products, such as oriented strand board. Link 07/2025
43. **Feedstock**: USA. Last July, Nufarm announced a license agreement with Yield10 Bioscience Inc., which gave us significant rights to Yield 10's Omega-3 technology. Directly after, Nufarm agreed to immediately begin negotiating the purchase of substantially all of Yield10's assets, including ownership of Yield10's camelina assets in both the omega-3 sector and most assets in the bioenergy sector. Nufarm successfully acquired substantially these assets in January 2025. Link 17/07/2025
44. **Feedstock**: USA. Reuters reported that the US biofuel makers will consume more than half of all soybean oil produced in the U.S. next year as a recent flurry of federal policy moves has transformed the sector, including higher blending mandates and curbs on foreign biofuel imports and feedstocks according to the U.S. Department of Agriculture . In a monthly supply-and-demand report, the USDA sharply raised its outlook for soybean oil use by biofuel producers in the 2025/26 marketing year, which begins October 1, to a record 15.5 billion pounds, up 11.5% from its forecast a month ago and 26.5% higher than the current marketing year. Link 22/07/2025
45. **Feedstock**: USA. Woodchuck raised $3.75 million in seed funding led by an investor syndicate headed by Mason Fink. Additional partners include NorthStar Clean Energy, a CMS Energy company, Alloy Partners (formerly High Alpha Innovation) and Beckett Industries. Woodchuck's proprietary AI platform integrates advanced image recognition to improve the efficiency and quality of biomass processing. This innovation reduces costs, enhances biomass quality, and allows for broader applications of the resulting product in renewable energy generation. Link 02/07/2025.

Gasification

46. **Gasification**: USA. As the global push to decarbonization intensifies, syngas is ready to play a significant role. Electrification can address several issues, but key industries will continue to rely on carbon-based fuels. Fortunately, syngas allows for recarbonization, replacing fossil-carbons with renewable sources of biomass. Biomass is globally available in large quantities and can be unlocked by conversion to syngas. Syngas enables the production of key chemicals like methanol, hydrogen, and Fischer-Tropsch fuels, which can address hard to abate sectors like aviation, maritime shipping, and steel manufacturing. The importance of syngas in reaching net-zero has begun and will only increase in the coming years. Link 16/07/2025.

Hydrogen

47. **Hydrogen**: Australia. Stanwell Corporation axed its multi-billion-dollar Queensland green hydrogen project and pulled out of its other hydrogen development programmes. The Queensland state-owned energy firm said that it had "discontinued" its involvement in the Central Queensland Hydrogen Project (CQ-H2), following months of controversy and unsuccessful funding efforts. he project had been hanging in the balance for months, after the Queensland Government rejected Stanwell's AUD $1bn funding request and two potential Japanese offtakers withdrew from the development. Link 01/07/2025
48. **Hydrogen**: China. Envision commissioned the 'world's largest' green hydrogen and ammonia plant in Chifeng, China, powered entirely by an off-grid renewable energy system. The plant in the Chifeng Net Zero Industrial Park is now producing 320,000 tonnes of green ammonia annually from 500MW of electrolysis, with plans to begin exporting the compound in Q4. apan's Marubeni has already inked a long-term offtake agreement for a portion of the plant's output for use in fertilisers, chemicals and shipping. Link 14/07/2025
49. **Hydrogen**: China. Sinopec's 400km cross-provincial green hydrogen pipeline in China was approved and is set to transport up to 100,000 tonnes of wind-powered hydrogen.The pipeline is expected to deliver hydrogen from the Chinese oil giant's 1GW green hydrogen production project in Ulanqab, Inner Mongolia, to its Yanshan petrochemical plant in Beijing. The Beijing plant produces oil-based products such as ethylene, synthetic rubber and resin, phenol and acetone. Hydrogen in such a plant is used for hydrotreating feedstocks, hydrogenation reactions, impurity removal, and as a fuel or reducing agent in chemical processes. Link 07/07/2025.
50. **Hydrogen**: Finland. The Central Finland Mobility Foundation (Cefmof) plans to install the 'Aqualyzer-C3' system in Jyväskylä before the end of the year. It is believed that the electrolyser can produce enough hydrogen to refuel three fuel cell electric vehicles (FCEVs) in a single hour. Japanese technology firm Asahi Kasei has agreed to supply a 1MW alkaline electrolyser for localised green hydrogen production and refuelling. Cefmof is expected to use the electrolyser to promote hydrogen-powered vehicles and buses in Finland, with a start-up planned for next year. Link31/07/2025.
51. **Hydrogen**: Germany. Daimler Truck believes the opportunity to develop hydrogen trucks remains strong despite delaying its market roll out. The German manufacturer now anticipates fuel cell market ramp up after 2029, starting with lower volumes and a Europe-first focus. Link 15/07/2025
52. **Hydrogen**: Germany. E.ON cancelled plans for a 20MW green hydrogen project in Essen and exited plans to develop a hydrogen pipeline in Germany. E.ON's international hydrogen imports, hydrogen production, and midstream activities will be deprioritised as the company restructures, moving its green gas operations into its broader energy infrastructure solutions

(EIS) unit. Furthermore, the company has withdrawn from the H2.Ruhr project, which was to be developed in partnership with Enel, Iberdrola, ABB, and SAP. The project had planned to deliver up to 80,000 tonnes of hydrogen and ammonia annually via a pipeline initially connecting Essen and Duisburg. Link7/07/2025.

53. **Hydrogen**: India. An Indo-Polish joint venture agreed to explore the development of a green hydrogen-based ammonia facility in India, which could produce up to one million tonnes per year. Under a (MoU between the Indo-Polish joint venture JK Srivastava Hynfra (JKSH), in cooperation with Polish company Hynfra P.S.A., and the New & Renewable Energy Development Corporation of Andhra Pradesh (NREDCAP), they plan to invest ₹350bn ($4bn) into the facility. Link. 22/07/2025
54. **Hydrogen**: India. Indian Oil Corporation Ltd., Larsen & Toubro (L&T), and ReNew Power, announced signing of binding term sheet for the formation of a Joint Venture (JV) company to develop the nascent green hydrogen sector in India. The tripartite venture is a synergistic alliance that brings together the strong credentials of L&T in designing, executing, and delivering EPC projects, IndianOil's established expertise in petroleum refining along with its presence across the energy spectrum, and the expertise of ReNew in offering and developing utility-scale renewable energy solutions. Link 03/07/2025
55. **Hydrogen**: Italy. Tulum Energy raised $27m in a seed round to construct the first pilot plant for its methane pyrolysis technology based on electric arc furnaces (EAF). Methane pyrolysis splits natural gas feedstocks in the absence of oxygen into hydrogen with carbon generated in a solid form such as graphene, graphite, carbon black. Link 09/07/2025.
56. **Hydrogen**: Morocco. Morocco's Investment Ministry conducted the sixth monitoring committee meeting for the Chbika green hydrogen project, marking significant progress in securing land rights for the ambitious renewable energy initiative with international partners TotalEnergies, Copenhagen Infrastructure Partners, and A.P. Moller Capital. Located in the Guelmim-Oued Noun region near the Atlantic coast, Chbika represents one of Morocco's first major industrial green hydrogen projects. Link 03/07/2025
57. **Hydrogen**: Saudi Arabia's second large-scale green hydrogen and ammonia hub will be nearly twice the size of the 2.2GW Neom complex. The project's developer, ACWA Power, had announced earlier this month that it had signed a joint development agreement with German energy firm EnBW to build the Yanbu Green Hydrogen Hub by 2030. Link 29/07/2025
58. **Hydrogen**: South Africa. Hive Hydrogen is seeking proposals from engineering firms to develop its $5.8bn hydrogen and ammonia project in South Africa. The project, led by the UK-based Hive Energy and South Africa's BuiltAfrica joint venture, will utilise 3.6 GW of renewable energy to power a 1.2 GW electrolyser. In the Coega Special Economic Zone, they plan to produce up to one million tonnes of hydrogen-based ammonia. After commercial operations begin in 2029, Hive Hydrogen will export the green ammonia from Africa to customers in Asia and the EU. Link 08/07/2025.
59. **Hydrogen**: Spain. RIC Energy and oil-and-gas major Repsol SA, will not move forward with a planned green hydrogen production plant in Puertollano, central Spain, due to the project's "technical and economic viability. The project was to be located at the site of the former La Sevillana thermal power plant, where Hydric Power hoped to produce around 30,911 tonnes of hydrogen and 272,953 tonnes of oxygen annually through electrolysis. The green hydrogen, produced using solar power as originally planned, would have been delivered via pipeline to Repsol's nearby refinery. Link 08/07/2025
60. **Hydrogen**: Spain. Spanish and French gas grid operators formed a joint venture (JV) to develop a key underwater section of the 5,500km H2Med hydrogen pipeline network. The

underwater pipeline will form the primary H2Med interconnector between Spain and France, supplying volumes from production centres in renewables-abundant Spain to industrial regions in northern Europe. Link 08/07/2025.

61. **Hydrogen**: Sweden. Graphmatech received a €2.5m ($2.9m) EU grant to build a test facility for its storage technology, which it claims could reduce hydrogen losses by 83%. The new plant will include a production line to boost the firm's annual production capacity from five to 200 tonnes of products, and allow it to deliver materials for industrial testing. Link 10/07/2025
62. **Hydrogen**: The Netherlands. Stellantis — the world's third-largest automaker — is shifting focus away from hydrogen-powered vehicles. The company confirmed to Hydrogen Insight that its step back is due to a lack of wider investment into H2 refuelling infrastructure in Europe, with little progress from member states on implementing EU legislation that would support fuel cell electric vehicles (FCEVs), such as the Alternative Fuels Infrastructure Regulation. This is after the firm had already introduced eight new FCEV van models in January last year and bought a 33% stake in fuel-cell supplier Symbio in 2023. Link14/07/2025
63. **Hydrogen**: United Kingdom. The Fawley Hynamics project, estimated at EUR 300 million, aims to build a 120 MW electrolyser facility to produce green hydrogen, primarily to support the decarbonisation of the ExxonMobil petrochemical complex at Fawley. Once operational, the facility is expected to cut up to 100,000 tonnes of CO_2 emissions annually by replacing heavy fuel oil and grey hydrogen with cleaner hydrogen alternatives. The Fawley refinery is the largest of its kind in the UK, supplying 25% of the country's road fuels and over 20% of aviation fuel, including a quarter of Heathrow Airport's supply. Link 15/07/2025
64. **Hydrogen**: USA. Australian oil and gas major Woodside Energy has cancelled its H2OK green hydrogen project in the US, due to cost and lower-than-expected demand. First announced in 2021, the Oklahoma-based project was anticipated to produce up to 60 tonnes per day of liquid hydrogen through electrolysis and liquefaction for the heavy transport sector. Woodside had already completed the FEED and awarded equipment and engineering contracts to Nel and Air Liquide. However, due to several challenges facing the low-carbon hydrogen sector, Woodside re-evaluated the project's viability. Woodside announced the cancellation in the company's 2025 Q2 financial report. Link 29/07/2025.

Marine Fuels

65. **Marine fuels**: China Envision Energy announced that green ammonia fuel produced from its world's largest green hydrogen and ammonia plant in Chifeng has successfully powered the world's first green marine ammonia bunkering operation. The milestone event took place at COSCO Shipping Heavy Industry's terminal in Dalian, where China Shipping & Sinopec Suppliers Co., Limited completed the inaugural bunkering of green ammonia fuel for a 5,500 HP ammonia-fuelled port vessel. Link 30/07/2025.
66. **Marine fuels**: China. China Marine Bunker (CMB) supplied 500 tons of domestically produced, bonded green methanol to COSCO's first methanol dual-fuel ultra-large container ship, COSCO Shipping Yangpu. To enable the operation, CMB worked with eight local and national agencies to establish what it calls a "one-stop" regulatory model. Measures included combining bonded and export supervision warehouse functions and opening a direct port access corridor to streamline customs clearance and reduce handling costs. CMB aims to replicate the Dalian model across a growing green methanol bunkering network. Link 18/07/2025.

67. **Marine fuels**: Hong Kong. Towngas signed an agreement with both the Transport and Logistics Bureau (TLB) and Pacific Basin Shipping Limited (Pacific Basin), supporting the Hong Kong Government's initiative to develop Hong Kong as a green maritime fuel bunkering and trading centre. Under the MoU signed with the Transport and Logistics Bureau, Towngas, as a green maritime fuel producer, will actively supply marine green methanol fuel that complies with current international standards for delivery, bunkering, export, and trading in Hong Kong. Link 01/07/2025
68. **Marine fuels**: Japan. Yang Ming Marine Transport Corporation has decided to order three additional 8,000 TEU methanol dual-fuel containerships in Japan. Combined with the three 8,000 TEU vessels purchased from Shoei Kisen Kaisha in March, Yang Ming will have a total of six methanol dual-fuel-ready containerships scheduled for delivery between 2028 and 2030. Link 29/07/2025
69. **Marine fuels**: Norway. Amon Maritime secured a NOK 253 million investment grant from Enova to support the construction of two groundbreaking newbuilds – Amon Bulk 1 and Amon Bulk 2 – which will be among the world's first large bulk carriers powered by ammonia. Link 10/07/2025
70. **Marine fuels**: Switzerland. WinGD was selected to supply its X-DF-M dual-fuel methanol and methanol-ready X-engine designs for over 30 boxships to be constructed for a Taiwanese container shipping player. The methanol-ready X-92 engines are to be fitted onto vessels with a 16,000 TEU capacity. The order reportedly follows a booking from earlier this year that entailed the equipping of fourteen 8,700 TEU container vessels with the X-82 solution and of six units of the same capacity with the X-82-DF-M methanol-fueled engines. Link 01/07/2025
71. **Marine fuels**: The Netherlands. GREEN MARINE GROUP and Vertoro B.V. signed an agreement to jointly accelerate the market validation and commercial roll-out of lignin-alcohol blends (aka crude lignin oil, CLO) as sustainable marine fuels. Link 14/07/2025.

Methanol

72. **Methanol**: Portugal. HyOrc Corporation signed a Memorandum of Understanding (MOU) with Start Lda, a Portugal-based liquid and gaseous fuels trading company, to develop a 25,000 ton per annum green methanol production facility in Porto, with conservative projected lifetime revenues of $390m from the facility. Link 14/07/2025

Plastic recycling

73. **Plastic recycling**: China. The world's first 200,000 tons/year industrial plant for deep cracking of mixed scrap plastics successfully began trial production in Jieyang city, eastern part of Guangdong province. Through deep catalytic cracking, low value mixed scrap plastics are directly converted into high value-added chemical raw materials in a "one-step" process, which will effectively solve the problem of plastic pollution and achieve high-value recycling and utilization. Link 29/07/2025
74. **Plastic recycling**: USA. PureCycle Technologies, Inc, announced a plan to bring one billion pounds of installed capacity online before 2030 across the United States, Europe and Asia. This plan is catalyzed by the execution of binding agreements for a $300 million capital raise. PureCycle Technologies LLC., a subsidiary of PureCycle Technologies, Inc., holds a global license for the only patented dissolution recycling technology, developed by The Procter & Gamble Company (P&G), that is designed to transform polypropylene plastic waste (designated as #5 plastic) into a continuously renewable resource. Link 02/07/2025.

Policy

75. **Policy**: The Netherlands. H2Eron, Circul8 Hydrogen Factory, Eurus Energy Europe, Air Liquide, Uniper Hydrogen, FR Energyhubs, Westfalen Hydrogen, Essent Hydrogen, Den Tol Duurzaam, Vattenfall, and Stakraft all secured funding from the OWE subsidy programme. The OWE scheme covers up to 80% of project capital costs and provides an operating subsidy per kilogramme of hydrogen produced. Link 21/07/2025.
76. **Policy**: Türkiye. Turkish Government will set mandates for airlines and jet fuel suppliers to enhance uptake of SAF with a goal of curbing aviation emissions by 5% by 2030. The new rules will mandate for airlines to use sufficient SAF in international flights involving Turkey to meet the 5% emissions reduction goal. They will also require jet fuel suppliers in the country to procure SAF to meet that target, and domestic oil refiners Tüpraş and SOCAR to start producing SAF. Link 08/07/2025.
77. **Policy**: United Kingdom. Bloomberg reported that the impending closures of the country's two largest ethanol plants due to significantly increased imports from the US following a new UK-US trade deal allowing for duty-free imports will also threaten other industries such as beef and beer production. The two ethanol plants represent 80% of the country's CO2 production, which is already a tight market in Europe, and will impact the country's meat processing plants as well as soft drink and beer producers who use CO2 in their drink production. Link 21/07/2025
78. **Policy**: USA. Republican Senators narrowly passed President Donald Trump's budget bill, which includes a measure to shorten the eligibility period for the lucrative 45V clean hydrogen production tax credit from 2033 to 2028. The revised legislation sets the expiration of the 45V credit to 1 January 2028, allowing only projects that begin construction before the end of 2027 to qualify. While the Senate-passed version gives developers two more years to act, it still significantly undercuts the original timeline laid out in the 2022 Inflation Reduction Act, which granted eligibility through to 2033. Link 3/07/2025.

Recycling plastic

79. **Recycling plastic**: Japan. This new plant employs hydrothermal plastic recycling technology (Hydro-PRT™)2 that features supercritical water to chemically break down waste plastic procured externally and convert it into oil. The technology has been made available under a license agreement with U.K.-based Mura Technology Ltd. The recycled oil produced with the technology is used as feedstock at both companies' existing refinery and naphtha cracker and reprocessed into petroleum products and various chemicals and plastics. Link 22/07/2025

GIFFORD
CONSULTING

Company Summary – **July 2025**

Frequency of mention

Company	Frequency
Avantium	2
Envision	2
Moeve	2
Sinopec	2
Syzygy Plasmonics	2
TotalEnergies	2
XCF Global	2
Aemetis	1
Amber Flow Fuels	1
Avalon Energy	1
Axens	1
Bakelite	1
Beckers Group	1
Biofuels DigestAmon Maritime	1
Biorig	1
Bluemethane	1
Boeing	1
CEFC	1
Cellugy	1
Central Finland Mobility Foundation	1
Chevron Lummus global	1
China Marine Bunker Supply Company	1
Climeworks	1
Daimler	1
Dutch Government	1
E.ON	1
EcoCeres	1
Eneos	1
Total	**76**

Topics & Themes/Category Summary– **July 2025**

Frequency of mention

Category	Frequency
Hydrogen	18
Biojet	9
Biogas	7
e-Fuels	7
Marine fuels	7
Biobased chemicals	5
Feedstock	5
Biofuels	4
Policy	4
Biomaterials	3
CO2 removal	3
Plastic recycling	2
Biobased plastics	1
Biodiesel	1
Gasification	1
Methanol	1
Recycling plastic	1
Total	**79**