Bioeconomy & Low Carbon Technology Overview for August 2025

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

Highlights by Topic: August 2025

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

Ammonia production

1. **Ammonia production**: India. Japanese conglomerate Itochu and Larsen & Toubro (L&T) are set to build a 300,000-tonne green hydrogen-based ammonia plant in India to supply Singapore's maritime sector. The Japanese trading major intends to offtake the green ammonia output for bunkering applications in Singapore, as it looks to supply the clean fuel to the maritime sector. Link 14/08/2025.

Biobased chemicals

2. **Biobased chemicals**: USA Algenesis Labs recently announced the commissioning of its Bio-Iso™ pilot plant, where it now makes the world's first 100% biogenic carbon isocyanate that is made from plants—a disruptive innovation in polyurethane chemistry. Unlike traditional isocyanates derived from petroleum and manufactured using highly toxic phosgene, Bio-Iso™ is made from plant-based dicarboxylic acids and manufactured without the use of phosgene. This novel process is both modular and scalable. Link 20/08/2025.
3. **Biobased chemicals**: USADMC Biotechnologies (DMC), a leading U.S.-based biomanufacturer, announced the commercial launch of D-chiro-inositol. This new ingredient joins DMC's growing portfolio of sustainable health actives, produced through fermentation, and now available for health-forward nutraceutical brands in the U.S. D-chiro-inositol is a naturally occurring isomer of inositol that is a popular ingredient in women's health supplements and is often chosen to support menstrual, ovarian, and hormonal health, as well as maintain healthy insulin levels.1 D-chiro-inositol also has emerging applications in men's health supplements. Link 22/08/2025.
4. **Biobased chemicals**: USAOCOchem announced production partnership agreement with ADM to build a groundbreaking field demonstration plant using OCOchem's Carbon FluX Electrolyzer technology. The plant will be co-located within ADM's corn processing complex in Decatur, Illinois. It will convert biogenic CO2 from ADM's ethanol production stream to formate molecules, which can be used in a wide variety of consumer and industrial products and applications. OCOchem is the leading CO2 Electrolysis company converting CO2 into organic molecules. At its core, OCOchem is pioneering technologies that make artificial photosynthesis a reality by directly converting carbon dioxide, water and clean energy into renewable molecules and materials. Link 27/08/2025.

Biobased plastics

5. **Biobased plastics**: France. After starting up its state-of-the-art plant in Singapore and thus increasing its global Rilsan® polyamide 11 capacity by 50%, Arkema announced the construction of a new Rilsan® Clear transparent polyamide unit on its Singapore platform. The new capacity represents an investment of around US$20 million and is expected to be operational in the first quarter of 2026. Arkema is the leading producer of bio-based transparent polyamides, including its flagship grades Rilsan® Clear Rnew® G850 and G820 containing respectively 45% and 62% bio-based carbon origin. These grades provide lightweight, high transparency, flexibility, and chemical resistance. Link 05/08/2025.

Biodiesel

6. **Biodiesel**: The Netherlands. Greenergy, a producer of biodiesel from waste, announced a ten-year extension to its lease with the Port of Amsterdam. Since acquiring the Amsterdam biodiesel plant in 2018, Greenergy said it has made significant investments to convert the plant to manufacture waste oils, and most recently, to expand the production capacity. Expansion works completed in 2024 increased production by 25% and enabled the plant to process a broader range of waste oils to help meet rising demand for waste-based biofuels. Link 26/08/2025.

Biofuels

7. **Biofuels**: Brazil. Potential Group will invest R$ 2 billion in the construction of a corn ethanol plant in Lapa (PR), where the company projects to have a mega-complex of biofuels taking advantage of the potential of Paraná as a major grain producer and the growing demand for

bioenergy, The company is in an advanced phase in the construction of an overwhelming soybean, which is expected to be ready in the first half of 2026 to offer raw material to the expanding group's biodiesel plant. In addition, in the future, there are plans for an advanced aviation fuel plant (SAF). Link 08/08/2025.

8. **Biofuels**: Brazil. Petrobras began the contracting process to build the first plant dedicated to the production of BioQAV (or SBC, of Synthetic Component of Mix for the production of SAF) and renewable diesel (or HVO – Hydrotreated Vegetable Oil), to be installed at the Presidente Bernardes Refinery (RPBC), in Cubatão (SP). The project provides processing capacity of about 950,000 tons per year of raw materials of plant origin and animal fat, generating a production capacity of up to 16,000 bpd of renewables (BioQAV and renewable diesel). Link27/08/2025.
9. **Biofuels**: Canada. Enerkem's Varennes Carbon Recycling commercial biorefinery with support from the Quebec and Canadian governments. A C$875 million (~US $650 million) investment partners Shell, Suncor and Proman in converting 200,000 t/y of municipal waste and biomass into ~125,000 t/y of advanced biofuels and renewable chemicals, leveraging green hydrogen and electrolytic oxygen. Link 06/08/2025.
10. **Biofuels**: South Korea. LG Chem has started building South Korea's first hydrotreated vegetable oil (HVO) production plant, a major step in the company's efforts to secure eco-friendly raw materials and reduce its environmental impact. The plant is being built in Seosan, South Chungcheong Province, and is expected to be completed by 2027. Link 05/08/2025.
11. **Biofuels**: USA. Conestoga Energy the acquisition of SAFFiRE Renewables, LLC from Southwest Airlines Renewable Ventures LLC. The acquisition includes all intellectual property, certain related technologies, the proposed pilot production facility, as well as key leadership team members, enabling Conestoga to further capitalize on the growing demand for reliable renewable fuels. With this acquisition, Conestoga will leverage SAFFiRE's exclusive license to Deacetylation and Mechanical Refining (DMR) pretreatment technology developed at the U.S. Department of Energy's National Renewable Energy Lab (NREL) to convert corn stover, a widely available agricultural by-product in the U.S., into ethanol with a carbon intensity (CI) score less than negative 100. SAFFiRE's pilot production facility will be co-located at Conestoga's Arkalon Energy plant in Liberal, Kansas, and is expected to be operational in 2026. Link 18/08/2025.
12. **Biofuels**: USA. GranBio LLC signed a Memorandum of Understanding (MoU) with Rayonier Advanced Materials Inc to jointly explore the development of a small-scale commercial cellulosic Sustainable Aviation Fuel (SAF) facility co-located at RYAM's Jesup, Georgia site. Under the agreement, GranBio will lead the proposed project to deploy its proprietary AVAP® technology to convert lignocellulosic biomass into second-generation ethanol, which will be upgraded into SAF for sale to an offtaker. Link 04/08/2025.
13. **Biofuels**: USA. XCF Global, Inc. unveiled plans to invest nearly US $1 billion by 2028, to build a modular network of sustainable aviation fuel (SAF) and renewable diesel production plants. Its flagship New Rise Reno facility is already producing with ~$350 million invested, generating ~60 engineering and management jobs in Nevada. The U.S. pipeline includes three new sites—New Rise Reno 2 (2027), plus facilities in Fort Myers, FL and Wilson, NC (by 2028)—each with nominal capacity of ~40 million gallons/year, bringing total output to ~160 million gallons/year. International expansion is underway via a MoU in Australia with Continual Renewable Ventures. Link 06/08/2025.

Biogas

14. **Biogas**: Canada. A new facility in Canada will be able to process up to 200,000 tonnes of organic waste annually from the Regional Municipality of York and surrounding areas using advanced anaerobic technology. Once complete, the Convertus York Biofuels Facility will help eliminate the transportation of organic waste to distant locations, resulting in an estimated 15,000 tonnes of CO2 emissions avoided each year. All materials received will be converted into renewable natural gas (RNG) and nutrient-rich organic fertilizers. The process is expected to generate between 350,000 to 400,000 gigajoules (GJ) of RNG per year, which will be injected directly into the local gas grid. Link 19/08/2025.
15. **Biogas**: Egypt. Egypt is moving forward with a new project in Beni Suef Governorate to convert agricultural and animal waste into biogas, in cooperation with the Biogas Energy Foundation for Sustainable Development (affiliated with the Ministry of Environment) and the United Nations Industrial Development Organization (UNIDO). The project is being prepared in partnership with Eni to establish a biogas plant with a capacity of 5,000 cubic meters per day and a collection system for 134 tons of animal waste daily. Since its creation, the Biogas Energy Foundation has built 2,000 biogas units across 19 governorates, generating 2.152 million cubic meters of gas annually — equivalent to 86,000 LPG cylinders — and processing 53,800 metric tons of animal waste into 50,000 tons of organic fertilizer. Link 13/08/2025.
16. **Biogas**: France. A new biogenic CO2 recovery unit derived from anaerobic digestion of biowaste was inaugurated at SUEZ's Terres d'Aquitaine site in Saint-Selve, Gironde. Link 13/08/2025.
17. **Biogas**: India. Elan Greentech Energies commenced project management consultancy (PMC) work on India's first refinery-based Compressed Biogas (CBG) plant, awarded by state-run Bharat Petroleum Corporation (BPCL). The state-of-the-art facility will process over 100 tonnes of paddy straw per day, producing 15 tonnes per day of high-quality CBG. This initiative directly addresses stubble burning in agricultural regions and supports India's clean energy targets under the SATAT (Sustainable Alternative Towards Affordable Transportation) program. Link 29/08/2025.
18. **Biogas**: India. Organic Recycling Systems (ORS) achieved a major milestone in the field of Compressed Biogas (CBG) with its MethanoBoost Catalyst (MBC) receiving validation from the Sardar Swarn Singh National Institute of Bio-Energy (SSS-NIBE). The MBC, developed by ORS, is designed to increase methane generation and improve the quality of digestate in anaerobic digestion plants. Using a special formulation made from nanoparticles, it helps convert carbon dioxide into methane during the process, leading to higher gas output. Link 27/08/2025.
19. **Biogas**: Italy. Anaergia Inc. signed an agreement with a subsidiary of Bioenerys. Under the terms of this agreement, Anaergia is to significantly increase the capacity and upgrade the capabilities of Bioenerys' Moglia anaerobic digestion facility, which is located in northern Italy. This transformation will increase the capacity of the plant to treat agricultural residues, and produce biomethane, more than doubling the volume of biomethane being injected into the grid by this facility. Link 14/08/2025.
20. **Biogas**: Italy. Quercus Real Assets together with Elionia successfully closed the financing of three greenfield biomethane plants that will be built in northern Italy. The Eur 76 million project financing has been arranged by a pool of three banks, BNL BNP Paribas (Mandated Lead Arranger, Agent Bank and Sace Agent), Banco BPM and Mediocredito Centrale. SACE, the insurance, and financial group controlled by the Ministry of Economy and Finance,

specialized in supporting the growth of Italian companies, will guarantee 50% of the facility. Link 13/08/2025.

21. **Biogas**: Philippines. The Manila Electric Company (Meralco) signed a 20-year power supply agreement with First Quezon Biogas Corporation (FQBC) for a renewable energy supply of 1.25 megawatts. FQBC uses advanced technology to convert chicken manure and other agricultural waste into electricity. Meralco highlighted the project's value, not only in providing a steady and affordable energy source, but also in supporting local farms by helping manage waste. Link 05/08/2025.
22. **Biogas**: South Korea. Biofriends Inc. and Cheongmyeong Co., Ltd. signed a MO) to build Korea's first commercial-scale biogas-based methanol production plant. This agreement is significant as it marks the starting point for the full-scale commercialization of eco-friendly fuel production using domestically produced biogas. The company decided to build and operate a plant that will produce 60,000 to 80,000 tons of biomethanol per year, using 120,000 Nm^3 of biogas generated daily from the biogas digester at its Gunsan plant as a raw material. The plan is to apply Biofriends' synthesis gas conversion technology to increase the added value of domestic biogas. Link 29/08/2025.
23. **Biogas**: Spain. Anaergia S.r.l. signed a Binding Agreement with a leading Spanish company specializing in renewable gas infrastructure projects. Under the terms of the Agreement, Anaergia will provide a range of services as well as its cutting-edge technology and equipment for over 15 new biomethane production plants across Spain. Anaergia will be responsible for the supply and construction of concrete tanks with Triton™ digesters, a proprietary technology featuring a patented configuration that significantly enhances process efficiency. In addition, the company will supply advanced mixing systems, also part of its proprietary technology, along with other critical components. Link 22/08/2025.
24. **Biogas**: Spain. Naturgy, through its distributor Nedgia, has connected to its gas network the first biomethane plant in the Foral Community of Navarre. The facility has been promoted by the company E-cogeneration Cabanillas and will produce up to 22 GWh of renewable gas from the treatment of livestock and agri-food waste. This is equivalent to the consumption of 4,000 households. Link 11/08/2025.
25. **Biogas**: USA. Circularity Fuels has successfully converted biogas from a California Central Valley dairy farm into synthesis gas (syngas), a key precursor to sustainable aviation fuel (SAF), using a compact electric processing unit one-hundredth the cost of conventional steam methane or autothermal reformers. Unlike traditional gas-fired reformers that cost millions and require massive infrastructure, the Ouro Reactor uses modified automotive-industry components to achieve the same result at a fraction of the size and cost. Link 21/08/2025.
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27. **Biogas**: USA. Emvolon, an MIT spin-off that converts greenhouse gas emissions into carbon-negative fuels and chemicals, and Montauk Renewables, Inc. announced a joint venture to develop multiple biogas-to-green methanol projects. Following a successful field demonstration project, Emvolon and Montauk plan to deploy a portfolio of biogas-based

sites with an aggregate annual production capacity of up to 50,000 metric tons of green methanol by 2030 and beginning with the Atascocita Humble Renewable Energy (HRE) facility in Humble, Texas. Link 11/08/2025.

28. **Biogas**: USA. NLC Energy Denmark LLC, which runs a biogas plant in the village of Denmark, submitted a Chapter 11 petition on August 16 in the US Bankruptcy Court for the Eastern District of Wisconsin. The company is working to restructure approximately $76 million (€70 million) in secured debt. Originally established in 2008 as NEW Organic Digestion LLC, the business started with a food waste digester that produced biomethane used to generate electricity. In 2016, it expanded through a joint venture that included acquiring a second facility in South Sioux City, Nebraska. However, problems soon arose. Following the expansion, sewer backups in the local area led to legal battles and fines totalling $1.8 million (€1.65 million). In 2019, an unexpected change in feedstock from a supplier caused an extended shutdown of the Nebraska plant. Link 25/08/2025.

Biojet/SAF

29. **Biojet/SAF**: Canada. Tidewater Renewables continues to advance the 6,500 bbl/d SAF project in British Columbia, with the front-end engineering design work now complete. During the second quarter of 2025, the renewable diesel & renewable hydrogen complex (the "HDRD Complex") achieved an average utilization rate of 2,164 bbl/d, or 72% of design capacity. Link 22/08/2025.
30. **Biojet/SAF**: Finland. UPM, Neste and St1 are moving forward with their plans to jointly produce sustainable aviation fuels from wood residues, with UPM's Lappeenranta facility preparing to start production by refining the renewable diesel it currently produces from crude tall oil. Currently, they are waiting on ASTM approval for crude tall oil to be used as a SAF feedstock, a process that can take up to 2.5 years. Once approval is received, commercial production is set to start immediately as the Lappeenranta facility already produces 130,000 metric tons of renewable diesel annually. Link 15/08/2025.
31. **Biojet/SAF**: Hong Kong. Cathay Pacific Airways (0293) has signed a cooperation agreement with logistics giant DHL Express to expand the production and adoption of sustainable aviation fuel (SAF) in Asia. Under the deal, Cathay will supply DHL with 2,400 tonnes of SAF for cargo flights departing from Seoul Incheon, Tokyo Narita, and Singapore Changi airports. These flights are operated by Air Hong Kong, a Cathay subsidiary that primarily handles express air services for DHL Express. Link 18/08/2025.
32. **Biojet/SAF**: India. IOCL's Panipat refinery is the first in the country to be certified for production of sustainability aviation fuel. The refinery is co-processing used cooking oil with conventional aviation fuel to produce the SAF. Link 14/08/2025.
33. **Biojet/SAF**: Malaysia. Petroliam Nasional Berhad (PETRONAS), Enilive S.p.A (a company directly controlled by Eni S.p.A.), and Euglena Co., Ltd. (Euglena) reached the final investment decision (FID) to develop a biorefinery which will be located within PETRONAS' Pengerang Integrated Complex (PIC), Johor, Malaysia. The three companies will establish a joint venture company in Malaysia to construct and operate the biorefinery.Targeted to be operational by the second half of 2028, the biorefinery will have the capability to produce Sustainable Aviation Fuel (SAF) and other biofuels such as Renewable Diesel/ Hydrogenated Vegetable Oil (HVO) to cater to the growing demands of the global aviation and transportation industries by tapping each partner's expertise. Link 18/08/2025.
34. **Biojet/SAF**: South Korea. LG Chem and Enilive have taken a major step toward biofuels growth by breaking ground on Korea's first hydrotreated vegetable oil (HVO) and Sustainable

Aviation Fuel (SAF) production plant in LG Chem's Daesan Chemical Complex located in Seosan, Chungcheongnam-do, 80 kilometers southwest of Seoul. The plant is going to be constructed by the LG Chem and Enilive joint venture, called LG-Eni BioRefining, and it is scheduled for completion in 2027 and will annually process approximately 400,000 tons of renewable bio-feedstock. Link 26/08/2025.

35. **Biojet/SAF**: Spain. Moeve and Apical have awarded Grupo Cobra and Masa – both subsidiaries of Cobra IS – the electrical, piping, and industrial mechanical works of the largest second-generation (2G) biofuel plant in Spain. The new plant will have an annual production capacity of 500,000 metric tons of sustainable fuels, including SAF (Sustainable Aviation Fuel) and HVO100 (renewable diesel). It will use agricultural waste and used cooking oils as raw materials. Link 11/08/2025.
36. **Biojet/SAF**: USA. Universal Fuel Technologies' (Unifuel) Ethanol-to-jet sustainable aviation fuel (SAF) produced via the company's Flexiforming technology has been accepted into the ASTM D4054 Clearinghouse, which supports the technical evaluation of new aviation fuels, for qualification. This acceptance positions Unifuel among an exclusive group of companies advancing toward ASTM qualification, the essential gateway for new fuels to enter commercial aviation markets. Link 28/08/2025.
37. **Biojet/SAF**: Hong Kong. EcoCeres is partnering with Xiamen Airlines to collect and transport waste cooking oil from selected restaurant partners through its established supply chain. The waste oil will be processed at EcoCeres' production plants to produce high-quality sustainable aviation fuel. Link 12/08/2025.

Biomaterials

38. **Biomaterials**: Belgium. Lummus Technology, a global provider of process technologies and value-driven energy solutions, announced Vioneo has selected its Novolen® polypropylene (PP) technology for a new plant in Antwerp, Belgium. The plant will be part of Vioneo's complex that, once complete, will be the world's first industrial scale fossil-free plastics production complex. The complex, based on green methanol as feedstock, will also be highly electrified using renewable electricity and use renewable hydrogen as key components to its operations. The first-of-its-kind plant will have a capacity of 200KTA and will use 100 percent segregated green propylene and ethylene as feedstock to produce a wide range of polypropylene grades. Link 28/08/2025.
39. **Biomaterials**: Japan. Sumitomo Chemical established a pilot facility in the Sodegaura area of the Chiba Plant and started operation of a new process that directly manufactures propylene from ethanol. Link 22/08/2025.

Cement

40. **Cement**: Poland. Heidelberg Materials has started operations at its new industrial pilot facility for enforced carbonation in Górażdże, Poland. This marks the next step in the large-scale implementation of Heidelberg Materials' patented ReConcrete process, which leverages new potential in the production of sustainable building materials by combining circularity and decarbonisation. The new facility in Górażdże processes recycled concrete paste (RCP) recovered at the company's first-of-its-kind recycling plant in Katowice, Poland. RCP naturally absorbs and permanently binds CO_2, thereby acting as a carbon sink. To harness this potential and accelerate the natural process, the RCP undergoes a treatment known as enforced carbonation. This process involves exposing the RCP to exhaust gases from the kiln in Górażdże, allowing CO_2 to chemically bind within the material. Once

carbonated, the RCP can be used as a supplementary cementitious material (SCM), partially replacing energy-intensive clinker in composite cements. Link 11/08/2025.

CO2 removal

41. **CO2 removal**: Paraguay. HaiQi Group has formed of a long-term strategic partnership with FLS Group, a developer specializing in sustainable forestry and carbon asset management. The two companies will collaborate on multiple large-scale decarbonization projects in Paraguay, focusing on the production of biochar, biocoke, and activated carbon. Under the agreement, FLS will lead project development, financing, and operations, while HaiQi will supply core pyrolysis and gasification technology, along with ongoing maintenance and system optimization. Link 04/08/2025.

Commercial development

42. **Commercial development**: Spain. ENSO has obtained 165 million euros of funding for the development of two newly built biomass plants in Spain, which will supply thermal and electrical energy to two large industrial customers under long-term supply contracts. These are the decarbonization projects of the agricultural cooperative of ACOR located in Olmedo and that of the plant of the international chemical group, Solvay in Torrelavega. The new plants, currently under construction, will serve Solvay and ACOR, two of Enso's main customers, contributing to a substantial improvement in efficiency and a reduction of their greenhouse gas emissions by more than 400 000 tCO2 per year. Link 15/08/2025.

E-Fuels

43. **E-Fuels**: Finland. Liquid Sun launched an e-SAF production pilot with ABB, Finnair, Fortum, and Finavia. Originating from research at Tampere University, Liquid Sun has developed an innovation based on low-temperature electrolysis (LTE) technology that converts CO2 emissions and renewable hydrogen into e-SAF. The pilot electro-fuel production unit, to be located in Espoo, will be fully operational in autumn 2025. This is the first pre-commercial production pilot of its kind, aiming to establish a functioning ecosystem and value chain for synthetic fuel production in Finland. Link 26/08/2025.

Ethanol

44. **Ethanol**: Brazil. Cargill Bioenergia will build a unit producing corn ethanol attached to its sugar cane plant in Cachoeira Dourada (GO), the company's press office said on Friday. The business model will be the same as the company has in Quirinópolis (GO), where the biofuels division of Cargill in Brazil already produces ethanol from sugarcane and corn. Link 20/08/2025.
45. **Ethanol**: Brazil. The National Bank for Economic and Social Development (BNDES) approved financing of R$ 625 million for the implementation of a new corn ethanol plant by São Martinho S/A. The project will allow the company to expand production at the Boa Vista Unit, an industrial complex located in Quirinópolis (GO), and will contribute to decarbonization, by avoiding emissions of around 380,000 metric tons of carbon dioxide equivalent (CO2e) per year. The project will be financed with R$ 500 million from the Climate Fund and R$ 125 million via Finem. The R$ 625 million approved by BNDES represents 53% of the total investment. Another R$ 102.8 million will come from the Financia of Studies and Projects (Finep). Link 14/08/2025.
46. **Ethanol**: United Kingdom. Associated British Foods has told the government that it will begin shutting down Vivergo Fuels on Monday, August 18, if an agreement hasn't been reached

that will ensure its economic viability in face of the new trade deal with the US. Meld Energy, who has signed a letter of intent with Vivergo Fuels to build a $1.7 billion sustainable aviation fuels facility using Vivergo's ethanol, says it will look for opportunities outside the UK instead if the ethanol plant is shut down. Link 15/08/2025.

47. **Ethanol**: United Kingdom. Associated British Foods plc on Friday announced the closure of Vivergo, its UK bioethanol production plant in Hull, which also produces animal feed for UK farms. The decision to close the plant follows extensive discussions with the Government to find a regulatory and financial solution that would enable Vivergo to operate on a profitable and sustainable basis. These discussions were necessary because Vivergo's commercial viability was undermined by the way in which UK regulations were being applied to favour foreign producers, an issue subsequently made much worse by the Government's decision in May to remove the tariffs on US bioethanol coming into the UK market. Link 20/08/2025.

Hydrogen

48. **Hydrogen**: Australia Carbon280 commissioned a 100kW prototype demonstration hydrogen production system in Kwinana, Western Australia. Carbon280's TRL6 prototype showcases its Hydrilyte technology at "an industrially relevant scale," storing hydrogen as a liquid at ambient conditions for transport via existing fuel infrastructure. The system can also separate hydrogen from helium for storage and delivery. Link 19/08/2025.
49. **Hydrogen**: Australia. Australia's Progressive Green Solutions (PGS) selected Thyssenkrupp Nucera electrolysers for its 1.4GW hydrogen-based iron project. The German technology firm has been selected as the preferred supplier to deliver modular 20MW alkaline electrolysers for green hydrogen production at what PGS says will be the world's largest green iron plant. Planned for Geraldton, Western Australia, the facility aims to produce up to 7 million tonnes of green iron pellets annually, alongside as much as 2.5 million tonnes of hot briquetted iron (HBI) for export. Link. 29/08/2025.
50. **Hydrogen**: Australia. Fortescue has secured a RMB14.2bn ($1.98bn) loan to support its decarbonisation plans, following the cancellation of two major hydrogen projects in the US and Australia. The loan, the first RMB-syndicated term loan of its kind by an Australian corporate, was secured from leading Chinese, Australian and international lenders. It has been awarded in order to get Fortescue's decarbonisation agenda back on track. Link. 11/08/2025.
51. **Hydrogen**: Australia. The Australian Renewable Energy Agency (ARENA) has committed A$44.9 million to Calix to build a novel demonstration plant using its Zero Emissions Steel Technology (ZESTY). Powered by renewable electricity and hydrogen, the plant will aim to produce up to 30,000 metric tons of low-carbon hydrogen direct reduced iron (HDRI) and hot briquetted iron (HBI) each year. Link 15/08/2025.
52. **Hydrogen**: Chile. Chile's government on Tuesday submitted a bill to Congress that would create up to USD 2.8 billion (EUR 2.40bn) in tax credits for green hydrogen off-takers and introduce a special fiscal regime for producers in the far-southern Magallanes and Antarctic region, as the country seeks to position itself as a global leader in the clean fuel. Under the proposal, companies purchasing green hydrogen or derivatives such as ammonia and methanol from domestic producers would be eligible for a temporary corporate tax credit, capped at USD 2.8 billion. The benefit would be granted only for first-time purchases and allocated through annual competitive tenders, with six rounds planned between 2025 and 2030. Link 21/08/2025.

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54. **Hydrogen**: India. Torrent Group has commissioned Uttar Pradesh's first green hydrogen plant, a facility designed to produce 72 tonnes of hydrogen per year. Located in Gorakhpur, the plant will produce green hydrogen for blending into compressed (CNG) and piped natural gas (PNG). Link 19/08/2025.
55. **Hydrogen**: Saudi Arabia. China's Sinopec announced that it signed an agreement with Saudi Arabia's ACWA Power to provide engineering services for what is set to become the world's largest integrated green hydrogen and green ammonia project. The facility will be developed in Yanbu city and is designed to produce about 400,000 metric tons of green hydrogen and 2.8 million tons of green ammonia each year, powered entirely by wind and solar energy. Link 29/08/2025.
56. **Hydrogen**: Spain ITM Power subsidiary Hydropulse is partnering with German renewables developer ABO Energy to jointly build small- to mid-sized decentralised green hydrogen plants in renewables-rich areas of Europe. The business will build, own, and operate green hydrogen plants based on ITM technology and provide hydrogen through long-term offtake agreements – mirroring the business model that underpins large-scale industrial gas projects. Link. 27/08/2025.
57. **Hydrogen**: USA. HydrogenXT signed a definitive term sheet for $900m in loans to build 10 production and dispensing facilities along the US West Coast. HydrogenXT, which launched in 2015, will look to deploy what it calls "localised scale" steam methane reforming plants equipped with carbon capture, combined with on-site compression, storage, and dispensing. It claims the plant design can capture 100% of carbon emissions and produce on-site electricity from natural gas using solid oxide fuel cells. The first plant in Avenal, California, is expected to break ground this autumn. Link 06/08/2025.
58. **Hydrogen**: USA. US-based aircraft developer JetZero partnered with French startup SHZ Advanced Technologies to explore a hydrogen-powered version of its Z4 all-wing design. Under the agreement, the clean aircraft venture will support SHZ in adapting its patented liquid hydrogen storage and distribution technologies for a Z4 variant, expected to deliver "up to 50% greater fuel efficiency and lower emissions" than conventional jets. Link 22/08/2025.

Marine fuels

59. **Marine fuels**: China. COSCO Shipping Development ordered four bulk carriers from Qingdao Beihai Shipbuilding, each designed with space reserved for either methanol or ammonia fuel systems. The ships will be leased long-term to COSCO Shipping Bulk and continue a cooperation first established in 2019 between the shipping group, Beihai, and CSSC Trading. The vessels include a newly optimized hull form that reduces fuel consumption by approximately six percent compared to earlier designs. The ships also meet IMO's Phase 3 Energy Efficiency Design Index standards. Link 08/08/2025.

60. **Marine fuels**: Finland. Viking Line has started to run its two ro-ro vessels Viking Glory and Viking Grace on bio-LNG in order to generate compliance for Gasum's Fuel EU Maritime (FEUM) pooling service. Link 28/08/2025.
61. **Marine fuels**: Singapore. VINSSEN has signed an MOU with Singapore's Marinteknik to accelerate the shift toward clean propulsion across Asia. The partnership centres on VINSSEN's Hydrogen-ready battery-based hybrid systems — designed to evolve from diesel-hybrid to full battery-electric and hydrogen fuel cell propulsion as infrastructure matures. Marinteknik contributes 40+ years of ship design and construction expertise and a powerful regional network. VINSSEN brings proven hydrogen, battery, and hybrid technologies — including Korea's first AIP-certified hydrogen-powered vessel. Link 25/08/2025.
62. **Marine fuels**: USA. Vanguard Renewables announced a commercial partnership with the CMA CGM Group. Under the terms of the agreement, CMA CGM will make a strategic minority investment in Vanguard Renewables through its energy fund PULSE, ensuring access to significant volumes of RNG to be delivered on a long-term basis. The agreement highlights the critical role that Vanguard's RNG is poised to play in the decarbonization of the maritime industry Link 25/08/2025.

Market development

63. **Market development**: USA. Production of renewable diesel and biodiesel in the United States declined sharply in the first quarter of 2025, according to the Energy Information Administration (EIA). The drop is being blamed on uncertainty surrounding federal biofuel tax credits and poor profit margins. in January 2025, U.S. biodiesel production fell to 60,000 barrels per day—the lowest level for that month since 2015 and around 40% below the output seen in January 2024. Although production picked up slightly in February and March, the first quarter average was just 70,000 barrels per day, down over 30% from the same period last year. Link 06/08/2025.

Methanol

64. **Methanol**: Australia. HAMR Energy advanced its green methanol project in Portland with the completion of the pre-front-end engineering design (pre-FEED) phase. The pre-FEED work for the Portland Renewable Fuels Project was completed by German technology and engineering company thyssenkrupp Uhde. Link 26/08/2025.
65. **Methanol**: China. In China, the first phase of a planned $3 billion green hydrogen-based methanol project in Yushu has been agreed by 20 Chinese and international companies. The facility that will have the capacity to synthesise two different types of methanol derived from green hydrogen and biomass will include 800MW of wind power, 480MW of electrolyser capacity and carbon capture capability. China Railway Major Bridge Engineering and China State Construction Engineering Corporation are leading the project. Link 18/08/2025.
66. **Methanol**: India. Toyo Engineering India successfully commissioned a green methanol plant with a daily production capacity of ten tons at NTPC's Vindhyachal Super Thermal Power Station in Madhya Pradesh. The project utilizes Toyo Japan's proprietary CO2-to-methanol synthesis technology, known as g-Methanol. NTPC captures carbon dioxide emissions from its thermal power plant and combines them with green hydrogen to produce clean methanol. Link 12/08/2025.
67. **Methanol**: Inner Mongolia. LONGi Green Energy has begun construction on a flagship integrated green methanol project in Urad Rear Banner Industrial Park, Inner Mongolia, China. Approved in September 2024, the plant will combine local wind and solar-powered

hydrogen production with biomass gasification to deliver 100% green methanol. Link 19/08/2025.

68. **Methanol**: Spain Enerkem and Technip Energies signed a formal collaboration agreement to advance the Ecoplantawaste-to-methanol project in El Morell, near Tarragona. The facility will gasify up to 400,000 t/y of municipal solid waste into 240,000 t/y of sustainable methanol and downstream chemicals. Final investment decision (FID) was approved in July 2024, and the plant is expected online by 2029. Link 06/08/2025.
69. **Methanol**: USA. Emvolon, and Montauk Renewables, Inc, announced a joint venture to develop multiple biogas-to-green methanol projects. Following a successful field demonstration project, Emvolon and Montauk plan to deploy a portfolio of biogas-based sites with an aggregate annual production capacity of up to 50,000 metric tons of green methanol by 2030. Emvolon helps hard-to-abate industries such as agriculture, aviation, energy, maritime and waste management power the global economy without producing emissions. The company's patented technology converts greenhouse gas emissions into carbon-negative fuels and chemicals like green methanol and green ammonia onsite by repurposing mass-produced automotive engines as cost-effective, modular chemical plants. Link26/08/2025.

Plastic recycling

70. **Plastic recycling**: Germany. Source One has developed a unique, high-standard pretreatment concept that has already been proven in commercial-scale operation to be capable of producing feedstock that meets the requirements of both pyrolysis and mechanical processing. Under the agreement, Freepoint Eco-Systems plans to build a network of pretreatment installations in key European markets, with Source One acting as the Engineering, Procurement and Construction (EPC) contractor. These facilities will convert mixed plastic waste into high-quality feedstock suitable for both advanced and mechanical recycling. Link 04/08/2025.
71. **Plastic recycling**: Japan. R Plus Japan (RPJ) and Anellotech, Inc. (Anellotech) announced that Plas-TCat, an innovative catalytic cracking technology that transforms mixed plastic waste directly into the base chemicals used to produce new plastics, is moving toward its commercialization phase. The technology has been successfully vetted through more than 2,000 hours of plant operation at Anellotech's 200,000 kg/year TCat-8® semi-commercial facility in Silsbee, Texas. Link 05/08/2025.

Renewable diesel

72. **Renewable diesel**: USA. Imperial Oil has completed construction and is now producing renewable diesel at Strathcona refinery. At full capacity, it is expected to be the largest renewable diesel facility in Canada. The project was first announced in 2021 and has the capacity to produce up to 20,000 barrels a day of renewable diesel. Imperial's renewable diesel is similar to traditional diesel, can be used with no engine modifications and is well-suited for Canada's cold weather conditions. Link 08/08/2025.
73. **Renewable diesel**: USA. Topsoe was selected as the renewable diesel technology partner for CountryMark's Mount Vernon, Indiana refinery. Located in southwestern Indiana, the refinery processes 35,000 barrels of crude oil per day. With the addition of Topsoe's HydroFlex technology, CountryMark aims to produce up to 250,000 barrels of renewable diesel annually. Link 07/08/2025.

GIFFORD
CONSULTING

Company Summary – **August 2025**

Frequency of mention

Company	Frequency
Anaergia	2
Emvolon	2
Enerkem	2
LG Chem	2
Vivergo Fuels	2
ACWA Power	1
Algenesis Labs	1
Anellotech	1
Arkema	1
Biofriends	1
Calix	1
Carbon280	1
Cargill Bioenergia	1
Cathay Pacific	1
Chilian Government	1
Circularity Fuels	1
Conestoga Energy	1
Convertus Group	1
COSCO	1
CountryMark	1
DMC Biotechnologies	1
EcoCeres	1
Elan Greentech	1
ENSO	1
Fortescue	1
GranBio	1
Greenergy	1
HaiQi	1
Total	**70**

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

Frequency of mention

Category	Frequency
Biogas	14
Hydrogen	10
Biojet	9
Biofuels	7
Methanol	6
Ethanol	4
Marine fuels	4
Biobased chemicals	3
Biomaterials	2
Plastic recycling	2
Renewable diesel	2
Ammonia production	1
Biobased plastics	1
Biodiesel	1
Cement	1
CO2 removal	1
Commercial Development	1
e-Fuels	1
Market Development	1
Total	**71**