NEWS REVIEW

The Bioeconomy Consultants

NNFCC

BIOENERGY

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

October 2021

Your Partners for Business Insight and Market Intelligence

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

Contents

Contents 2
Foreword 3
Policy 4
Markets 5
Research & Development 6
Biomass Heat & Power 7
Biogas 8
Energy from Waste 11
Events 13
Deployed biopower capacity 14

Foreword

Welcome readers, to our October Bioenergy News Review.

Multiplying GHG reduction technologies will be crucial if the UK – and the world – is to achieve its decarbonisation goals. Renewable energies currently provide a quarter of the world's electricity, and are expected to provide up to two thirds by 2040. However, as renewable electricity becomes more readily available, the demand for electricity itself is also increasing, further highlighting the need for a multi-technology approach. Recently, renewable electricity has been mainly produced through large scale technologies such as wind and solar. Biomethane and biogas have also made a small contribution to the production of renewable electricity worldwide, and thanks to the FiT and RO schemes in the UK.

This month, Veolia has opened three new Thermoelectric Power Plants in Brazil. The plants are located at three of their sanitary landfills, and are expected to produce 12,400 KW of renewable electricity using the biogas resulting from the decomposition of organic waste. This wattage should be enough to provide electricity and heating for around 42,000 inhabitants.

As the role played by AD for the generation of renewable energy remains minor, the focus has now switched to decarbonising heat and transport via the gas grid. There are still significant opportunities and further growth is expected in the UK when the Green Gas Support Scheme is launched next month.

Scania has launched its new OC13 gas engine, able to operate on biogas or natural gas. The OC13 is designed for long-distance transport, as well as for use on construction sites. It also has a horsepower-to-size ratio similar to conventional diesel engines used in the same contexts. Scania expects this new design to be of particular interest for countries such as Italy and France, where gas availability is increasing and where logistical and financial frameworks are already becoming well established.

Furthermore, for the first time, Repsol has produced hydrogen using biomethane as a raw material. About 10 tonnes of hydrogen were produced from 500MWh of biomethane which was itself produced from urban solid waste. This newly generated hydrogen was then used to produce fuels with low carbon footprints such as gasoline, diesel and kerosene, for which conventional fossil natural gas is usually needed. Repsol is set to begin industrial tests in Spain, which will also serve to develop the system of guarantees of origin for renewable gases in the country.

Read on for the latest news.

Policy

New EV charge points to switch off during peak demand

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New electric vehicle (EV) charge points will be pre-programmed to switch off during peak hours. The plan is to reduce concerns over pressure on the National Grid as EV take-up continues to rise. A 'randomised delay' of up to 30 minutes is to be integrated into home and workplace chargers from May.

The peak times are to be set as 8am to 11am and 4pm to 10pm. However, owners will be able to override the pre-set times where strictly necessary, for example night workers.

Meanwhile, public chargers and rapid chargers, on motorways and A-roads, will be exempt, reports The Times.

Click here for more information.

REA responds to Government 2035 grid decarbonisation ambition

On the 7th October, the Secretary of State for Business, Energy and Industrial Strategy, Kwasi Kwarteng MP, pledged to decarbonise the UK's electricity system by 2035, bringing forward by 15 years the government's commitment to a fully decarbonised power system by 2050, as set out in the Energy White Paper. The Association for Renewable Energy and Clean Technology's (REA) has welcomed the Government's commitment to decarbonise the UK's electricity system by 2035. However, the Association says that this target could be met sooner – and with a larger proportion of renewable energy and clean technology – with the right support.

They say that, for these ambitions to be met, the Government must provide detailed policy that supports the rapid deployment of a wide range of renewable and clean technologies – including wind, solar, bioenergy, marine and geothermal – in the upcoming Net Zero Strategy. When also considering the urgent need to electrify significant proportions of heat and transport, the Association says the Government must move quickly and decisively.

Dr Nina Skorupska CBE, Chief Executive of the Association for Renewable Energy and Clean Technology (REA), said: "It is very welcome that the Government has committed to decarbonising the UK's electricity system by 2035. Firm, long-term policy is now needed to ensure that this target is met including; regular CfD auctions; routes to market for Large Scale Energy Storage and BECCS; plus a grid that appropriately rewards flexibility."

Click here for more information.

Markets

Equitec to progress revamp of Drax to showcase best of British renewable energy innovation

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Renewable energy giant Drax is one of just a dozen green companies selected to take part in the government's Global Investment Summit next week.

The event, hosted by the Prime Minister and the Royal Family, will showcase the opportunities for investment in the UK, demonstrating the government's commitment to building back better following the Covid-19 pandemic and delivering the Ten-Point-Plan set out last year.

Drax will showcase its multi-billion-pound innovative negative emissions technology, bioenergy with carbon capture and storage (BECCS), which permanently removes carbon dioxide from the atmosphere and will be needed for the UK to reach its climate targets cost effectively. BECCS will also play a vital role in decarbonising the UK's industrial sector as part of the East Coast Cluster.

Click here for more information.

Croatian plant to gasify forest biomass

EQTEC has acquired a second decommissioned waste-to-energy plant in Croatia and will convert it into a biomass gasification facility.

The 1.2 MWe facility in Karlovac was acquired through Synergy Projects, a joint venture between EQTEC and its Croatian project development partner Sense ESCO. The move follows the company's recent acquisition of a similar plant in Belišće.

Located in the Industrial Zone, Korana in Karlovac, the site contains a decommissioned plant that originally employed an early gasification technology from a third party. The facility was not able to achieve the designed operational availability and had to be closed.

EQTEC intends to redesign and reconfigure the plant to incorporate its patented, proprietary Advanced Gasification Technology at its core. When subsequently commissioned, the plant will transform locally-sourced wood chips and forestry waste from regional forests into green electricity for use by the local community.

Click here for more information.

Drax announces 80% British supply chain ambition for construction of BECCS technology

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Renewable energy company Drax has announced that it aims to source 80% of the construction materials and services needed to deliver its climate saving negative emissions technology bioenergy with carbon capture and storage (BECCS) from the UK supply chain.

The 80% ambition includes all construction materials needed as part of the deployment of the multi-billion-pound project such as steel, pipes, heat pumps, electricals, and insulation, as well as the support services involved in delivering such a large project.

In doing so, BECCS at Drax has the potential to deliver hundreds of millions of pounds worth of contracts for British businesses. As well as this, BECCS will protect and create over 10,000 jobs across the Humber, decarbonising one of the UK's most carbon intensive regions as part of the East Coast Cluster, whilst developing green skills, kickstarting new industries and helping level up the North.

Click here for more information.

Research & Development

Corporates move to net zero

Corporate commitments to net-zero accelerated over the last two years, with almost one-third (30%) of Europe's largest listed companies now having pledged to reach net-zero by 2050, according to a new study by Accenture.

The Accenture study, "Reaching Net Zero by 2050," analysed data from more than 1,000 listed companies across Europe's major stock indexes, finding that setting targets helps accelerate the transition to net-zero. Last decade, the companies with a net-zero goal reduced their emissions by 10% on average, while those without targets saw their emissions increase.

Companies listed in the U.K. were the most likely to have set a net-zero target date, with 37% having done so, compared with 27% in Germany and 18% in France. The average net-zero target year for European companies included in the study is 2043. Many companies in carbon-intensive industries — such as oil and gas and chemicals — have set net-zero target dates of or close to 2050, while many in services sectors aim for around 2035.

Click here for more information.

Peel to set up plastic recycling hub

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PLANS for the UK's first £165m Plastic Park - designed to tackle a share of the UK's 4.9 million tonnes of annual plastic waste – have moved a step closer.

Peel NRE, part of Peel L&P, has submitted a planning application for the Plastic Park to be developed at Protos, the company's strategic energy and resource hub near Ellesmere Port, Cheshire. It will cluster together innovative processing and treatment technologies to get the most value from plastic waste.

Two facilities at the Plastic Park have already received planning consent – the UK's first waste plastic to hydrogen facility using pioneering Powerhouse Energy technology and a PET (polyethylene terephthalate) recycling plant that will take food and beverage packaging, such as plastic bottles, and recycle them for use in making new packaging products. Peel NRE is now seeking planning approval for a number of further facilities which would provide capacity for up to 367,500 tonnes of mixed recyclables and plastic and create 147 new jobs.

Click here for more information.

Biomass Heat & Power

RWE's Markinch CHP Biomass Plant implements additional noise reduction technology

RWE has invested £200,000 on new noise abatement technology for its Markinch Power Station in Fife. The 55MW CHP biomass plant has the ability to generate power for 100,000 homes and has been operational since 2015, most recently investing in a state-of-the-art Energy Centre that provides heat to the Glenrothes Energy Network.

In 2019, RWE conducted a noise assessment and identified a low frequency tonal noise associated with the Steam Turbine Generator. Although the noise is within all operational limits, RWE has been working with SEPA to find a solution to minimise any audible background noise.

RWE identified a material that can act as an acoustic jacket around the Generator and the installation was fitted during the first half of 2021. The technology is fitted externally therefore the station's operations were not impacted. Following a series of noise performance tests on and offsite by an external specialist, results confirm that the insulation has significantly reduced the low frequency tonal noise.

Click here for more information.

Construction starts on Drax's second biomass pellet plant in Arkansas

Work is underway at the site in Russellville, Pope County in north western Arkansas, with commercial operations expected to begin at the plant in 2022. The move is part of a $40 million investment by Drax in the state, creating approximately 30 new direct jobs and many more indirect jobs across Arkansas.

The three pellet plants are expected to produce a total of around 120,000 tonnes of sustainable biomass pellets a year from sawmill residues, supporting the renewable energy company's plans to increase self-supply to its power station in the U.K.

The development of the "satellite" pellet plants, which are situated near sawmills, is part of Drax's strategy to increase biomass self-supply to five million tons by 2027, improving supply chain resilience while reducing pellet costs.

Locating the plants near sawmills provides the satellite plants with a ready feedstock of sawdust and other residues left over when timber is processed, reducing emissions in the supply chain as well as reducing infrastructure, operational, and transportation costs.

Click here for more information.

Biogas

King Willem-Alexander opens first Dutch bio-LNG plant

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With the press of a button Dutch king Willem-Alexander has officially put into service the first bio-LNG plant of the Netherlands. With this scoop, initiators Nordsol, Renewi and Shell have taken the next step in making road freight transport more sustainable. It is expected that the new plant will produce an estimated 3.4 kilotons of bio-LNG per year, preventing the emission of more than 14.31 kilotons of fossil CO_2. This is sufficient for 13 million on-road kilometres.

Nordsol's bio-LNG plant is built on the site of Renewi in Amsterdam Westpoort. Renewi collects organic waste throughout the Netherlands, such as expired products from supermarkets. The recycler then processes the waste and converts it into biogas in its own fermenters. Nordsol's new bio-LNG plant reprocesses the biogas into bio-LNG. Shell makes this bio-LNG available for its customers at LNG service stations in the Netherlands. In addition, during the production of bio-LNG, CO_2 is removed from the biogas and liquefied for reuse in greenhouses.

Click here for more information.

Welsh AD project receives share of £500,000 fund

Three low-carbon projects, including an anaerobic digestion (AD) system, have been given £500,000 (€581,000) in grant support from the Welsh Government.

The three schemes will be based at Coleg Cambria Llysfasi, a college in Denbighshire, and pioneer new technology aimed at reducing greenhouse gas (GHG) emissions in the agriculture sector. They are funded by the Welsh Government via its Whole System Business Research Innovation for Decarbonisation Challenge (WBRID) and supported by the North Wales Economic Ambition Board.

One of the projects is a low-cost, modular AD system for small-medium Welsh dairy farms to reduce GHG emissions from slurry management, by BioFactory Energy. A prototype plant is expected to be on-site in 2022 that will generate energy for the farm and improve slurry quality for spreading.

The other projects are a collaboration between the college, Menai Science Park on Anglesey and businesses to explore the potential for drones to identify on-land issues, such as weed growth, and a project to develop a bilingual carbon footprint resource for farmers in North Wales with Promar International.

Click here for more information.

Scania develops new gas engine for buses

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Scania's launch of the OC13 gas engine marks the start of alternative fuel solutions for the new truck generation. The OC13 is based on Scania's well-proven 13-litre engine. The engine works according to the Otto principle with spark plugs and complete combustion:

- Scania's new gas engine is designed for long-distance transport and on construction sites
- 410 horsepower and 2,000 Nm – well in line with diesel engines of a similar size
- A service interval of 45,000 km ensures high availability

There is a growing interest in operating vehicles on biogas or natural gas in countries such as Italy and France as a result of increased availability, improved infrastructure and good economic viability for hauliers. The sustainability aspects are also important – even natural gas provides a CO_2 reduction of approximately 15%.

Click here for more information.

Repsol produces renewable hydrogen with biomethane for the first time

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Repsol has produced renewable hydrogen using biomethane as raw material for the first time. This renewable hydrogen was used to manufacture fuels with a low carbon footprint, such as gasoline, diesel, or kerosene for aviation. This milestone took place at Repsol's Cartagena Industrial Complex, where 10 tonness of renewable hydrogen were produced from 500 MWh of biomethane, thus avoiding the emission of about 90 tonnes of CO_2.

In this way, Repsol replaces conventional natural gas with biomethane of sustainable origin to produce renewable hydrogen in its industrial complexes and thus decarbonize its processes and products.

The biomethane used as raw material was obtained from urban solid waste. This is an example of Repsol's commitment to the circular economy and state-of-the-art technologies that transform waste into high value added products with a low carbon footprint.

This first industrial tests carried out by Repsol will also serve as an example for developing the system of guarantees of origin for renewable gases to be implemented in Spain.

Moreover, the Ministry of Ecological Transition and the Demographic Challenge has recently released a draft royal decree for public information.

Click here for more information.

UK's Thames Water biomethane facility with SGN Commercial Services and DMT

DMT Environmental Technology (DMT), a global renewable gas leader, has announced they will be the biogas upgrading technology provider for the first collaboration between Thames Water and SGN Commercial Services. As one of the two contractors selected, SGN Commercial Services was awarded an eight-year framework, valued at £70 million, by Thames Water. Furthermore, SGN Commercial Services will design, construct, operate and maintain biogas processing installations at Thames Waster's wastewater treatment facilities.

The collaboration begins with Deephams Sewage Treatment Works. This £7.3 million project will transform biogas generated during the sewage treatment process into biomethane using DMT's membrane separation technology. The DMT system also includes a unique twin compressor system and an enhanced pre-treatment system to remove high levels of hydrogen sulfide, VOC's and siloxanes often present in biogas derived from wastewater.

With expected completion set for March 2022, Deephams Sewage Treatment Works will produce six million cubic metres of biomethane annually.

Click here for more information.

Veolia starts up renewable electricity production through biogas valorisation

Veolia brings on stream three new Thermoelectric Power Plants in Brazil located in Iperó, Metropolitan region of Sorocaba, in São Paulo and in Biguaçu, province of Santa Catarina, in three of its the sanitary landfills operated in the country. These units will produce 12,400 kW of renewable electricity from biogas produced by the decomposition of organic waste, allowing to meet the electricity and heating needs of a city of around 42,000 inhabitants in Brazil.

Converting this previously unused biogas into energy contributes to better recovery of waste and therefore strengthens the ecological impact of this activity. Veolia is also focusing on the valorisation of this energy resource to increase the share of renewable energy in the electricity mix and thus reduce greenhouse gas emissions.

Click here for more information.

Energy from Waste

Delayed Stockton Biomass plant to convert to EfW

Glennmont Partners says it is seeking a "positive solution" for the 325,000 tonnes-per-year capacity Port Clarence biomass project, with a switch to energy from waste (EfW) technology a possibility.

The £160 million plant was mothballed in April 2019 when its main contractors Babcock & Wilcox Volund reached a settlement with Glenmont to exit the site. The waste wood biomass plant was initially due to come online in 2018 but was hit by a series of delays. These delays meant it missed out on the government's Renewables Obligation Certificates (ROCs) subsidy scheme, given to biomass plants to create renewable electricity. This scheme had a deadline of September 2018, by which time the plants had to enter commissioning.

While Glennmont could benefit from the Contracts for Difference system, few waste wood biomass plants have taken this route, and a switch to EfW technology could prove more lucrative. Construction of the facility began in 2015. Situated on the banks of the River Tees at Clarence Works, the facility secured planning permission from Stockton-on-Tees borough council in 2014. Funding was provided by Glenmont Partners with debt arranged and provided by Deutsche Bank and Danske Bank, supported by EKF, the export credit agency of Denmark. If it goes ahead, the plant will generate 40MW of energy per year.

Click here for more information.

New Zero Waste Europe report: CCS for incinerators are "an expensive distraction to a circular economy"

Zero Waste Europe and Only Solutions LLP have published a report on Carbon Capture and Storage (CCS) presenting key general and specific arguments on how this practice, instead of a solution, is a distraction to a circular economy.

CCS is being explored in response to climate concerns of waste incinerators. The report considers that incinerating material that should be reduced, reused or recycled is a perverse incentive incompatible with the principles of the circular economy.

In the light of several CCS projects being considered on waste incinerators from the Innovation Fund, Zero Waste Europe warns of the potential conflict of this funding with the Commission circularity policies such as the commitment to halve residual waste generation by 2030.

Incinerators release an average of around 1 tonne of CO_2 for every tonne of waste incinerated. The release of CO_2 from incinerators makes climate change worse and causes a cost to society that is not paid by those incinerating waste. Investing in CCS for MWI incinerators would create an additional barrier to the achievement of a low-carbon circular economy by exacerbating the lock-in effect of incinerators. As there are viable alternative approaches to both resource management and energy generation, such an argument cannot be applied to defend CCS for municipal waste incinerators (MWIs).

Click here for more information.

Events

Future of Biogas Europe 2021 Berlin, 27th-28th October 2021

The two day event will bring together senior executives and experts from the full value chain to provide a forum for all parties active in the field of anaerobic digestion of organic matter and renewable energy production in the form of biogas.

Click here for more information.

European Biomass to Power 2021 Manchester, 17th-18th November 2021

This two day event will bring together key industry stakeholders to join our forum discussions and excellent networking, including senior representatives from Power Companies, Biomass Producers, Biomass Traders & Distribution Companies, Trade Associations, Renewable Energy Consultancies, EPC Contractors and OEMs, Regional & National Governments and Regulatory & Research Bodies.

Click here for more information.

Low Carbon Agriculture Stoneleigh, 8th-9th March 2022

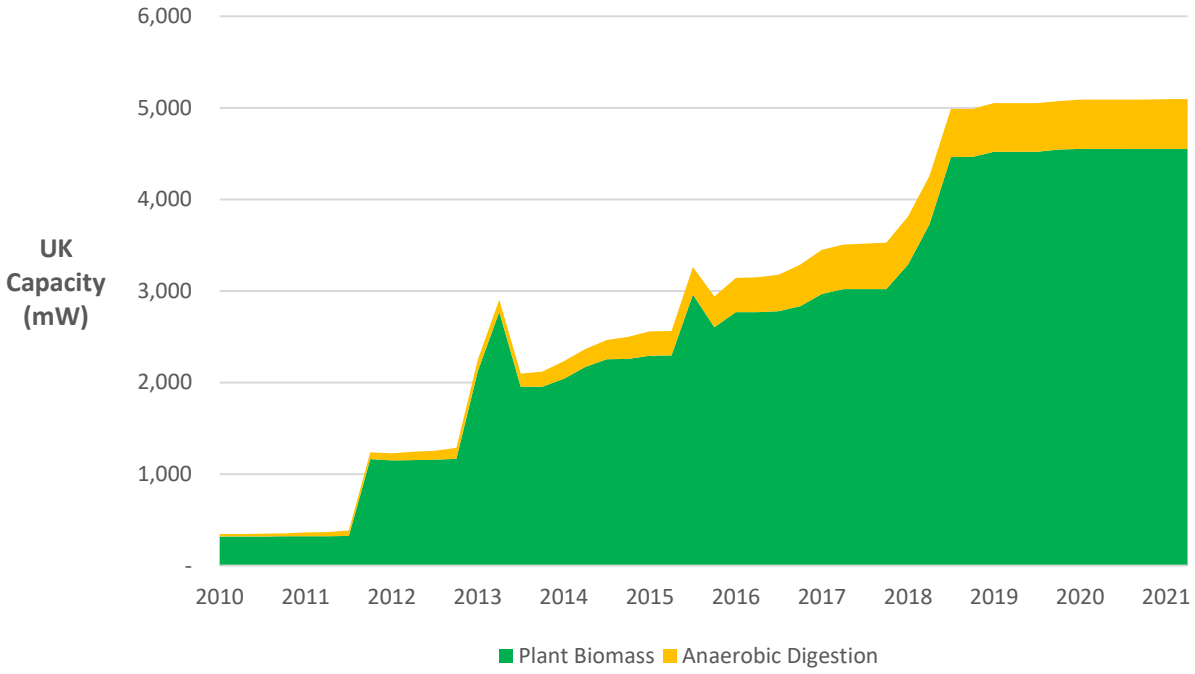
Supported by NNFCC, the event will provide practical guidance on sustainable land use, renewable energy generation and emission control, cutting through the noise to get to the heart of what new changes mean for farmers, by covering specific pressing topics such as policy, carbon storage, soil health, natural capital, net zero, renewable energy, low emission vehicles and agri-tech.

Low Carbon Agriculture show incorporates four expos including: 'Environmental Business Expo', 'Farm Technology Expo', 'Energy Now Expo' and 'Low Emission Vehicles Expo.'

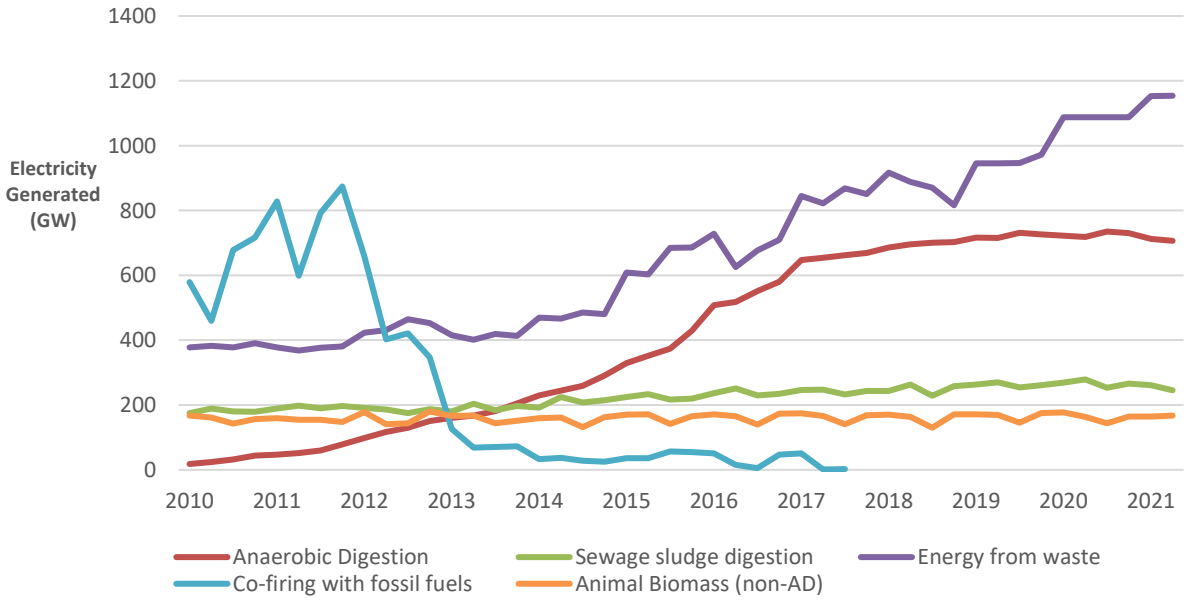
Click here for more information.

Deployed biopower capacity

Quarterly information on UK renewable electricity capacity



Quarterly information on UK renewable electricity generated, by the Office of National Statistics



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

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