

Acorn Bioenergy has a mission to be the leading platform of biomethane and biogenic CO₂ production in the UK. Alister Veitch, business development director, tells *Bioenergy Insight* more

Acorn Bioenergy “to provide 25% of the UK’s biomethane supply”

Acorn Bioenergy, acquired by Qualitas Energy in 2022, consists of an innovative team of professionals from the energy, engineering and agricultural sectors. The team works together to develop anaerobic digestion (AD) sites under the Non-Domestic Renewable Heat Incentive and the Green Gas Support Scheme.

With 15 sites currently under development, the company is a strong player in the sector. By the end of 2023, the company hopes to have commenced construction of six large-scale AD sites.

“We take full responsibility for the entire scope of each project from development to construction and operations,”

said Veitch. “We are primarily focused on developing large-scale agriculturally based plants, and are actively looking for more sites to add to the development pipeline.”

A greener future

According to the World Biogas Association, AD and biogas have the potential to deliver 50% of the Global Methane Pledge, which was launched at COP 26 in Glasgow, Scotland in 2021. Participants joining the Pledge agree to take voluntary actions to reduce global methane emissions by at least 30% from 2020 levels by 2030. Over 150 countries have signed the Pledge.

AD will play a strong role in accelerating the energy

transition, according to Veitch. “Our carbon-negative biomethane will replace sources of natural gas in the grid, whilst our biogenic CO₂ can contribute to the decarbonisation of industries such as construction,” he added. AD therefore comprises a unique solution, because it not only provides a renewable source of fuel, but it also creates exciting opportunities for many other sectors, according to Veitch.

Feedstocks and versatility

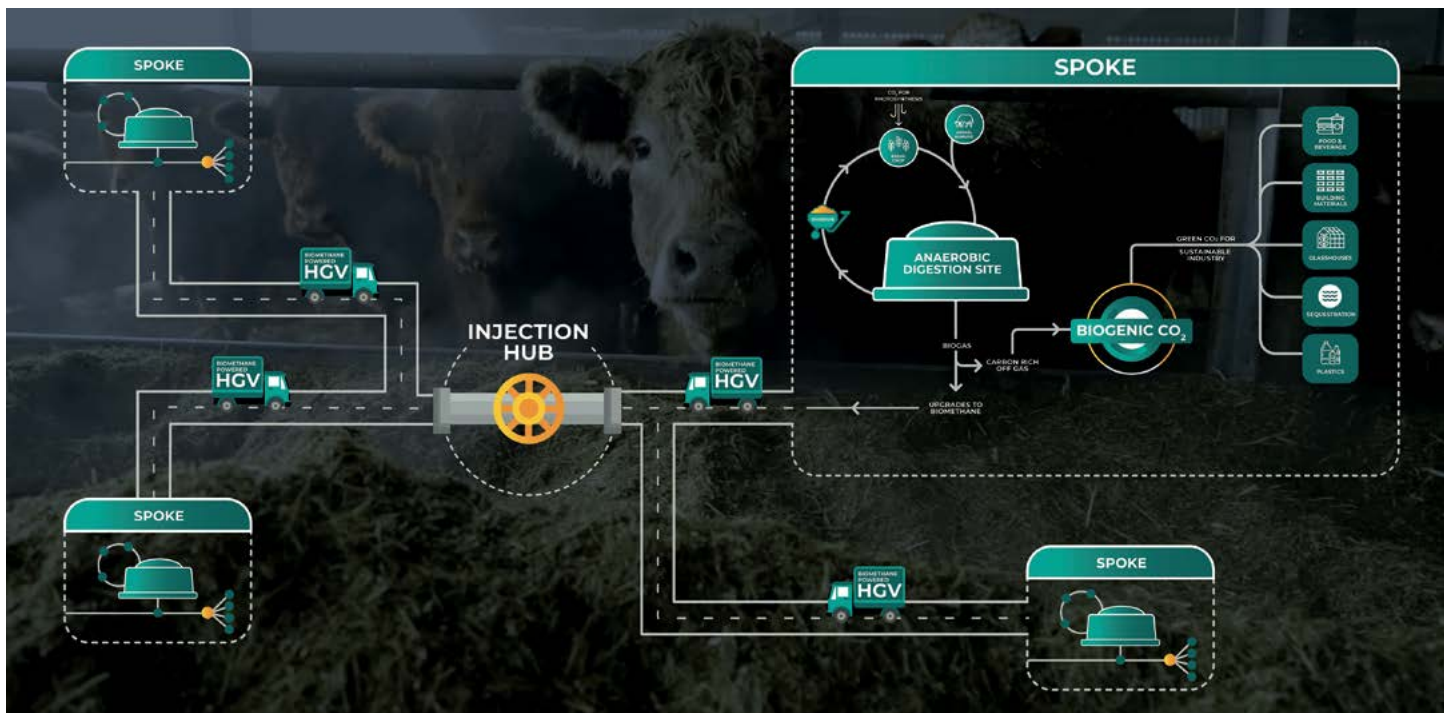
The company’s feedstocks will also help sustain agriculture in the UK by providing farmers with a wider choice of effective break crops such as grass, rye and maize. This

provides certainty in farmers’ rotations in an era of new farm subsidy regimes, noted Veitch.

“Our digestate, an organic, nutrient-rich fertiliser, will be returned locally to improve crop yields and food production. Digestate will also improve stores of carbon and replenish UK soils.

“Acorn’s developments will directly reduce the need for artificial, fossil-derived fertilisers and pesticides on local farms.”

All of Acorn’s sites will capture biogenic CO₂, which the company will be able to sell to a wide array of mature industries (such as horticulture), as well as emerging industries such as low-carbon building materials, explained Veitch.



“We are also actively exploring options to sequester our CO₂ in geological formations. If successful, we will contribute to the new wave of negative emissions technologies,” he added. Not only that, but biomethane can be used to displace fossil gas in any application. It is being increasingly used as a road transport fuel in heavy goods vehicles where hydrogen and battery solutions are a long way off, Veitch told *Bioenergy Insight*.

Acorn's innovations

Acorn is set to contribute an impressive 25% of the UK's total biomethane supply – with the country's current biomethane production at 4.5TWh, 1.5TWh of that is set to come from Acorn. Such a volume necessitates an innovative approach, and Veitch outlined the company's ambitions.

For example, Acorn will operate via a virtual pipeline, which he said has never been completed at scale before in the UK. Biomethane-powered HGVs will transport biomethane from the respective AD sites to a centralised injection point, which Acorn defines as ‘a hub’.

“This means that Acorn is not restricted by the gas network and can develop in areas where injection capacity is not guaranteed. We can then develop our plants in any location, especially those rich in agricultural feedstocks. Acorn's virtual pipeline is key to growing the biomethane industry at pace,” he said.

“Because of the virtual pipeline we are also exploring the physical supply of biomethane to industry. This is particularly interesting in Scotland, where many industrial facilities such as whisky distilleries do not have access to the gas network and have ambitious commitments to reach net zero by 2040. Acorn will supply biomethane

to the distilleries and use their coproducts for anaerobic digestion.”

Government policy

The UK's Spring Budget, which was delivered by chancellor Jeremy Hunt on 15 March, placed a clear emphasis on nuclear energy from a government perspective.

“Increasing nuclear capacity is vital to meet our net-zero obligations,” Hunt told parliament. “So to encourage private sector investment into our nuclear programme, today I confirm that – subject

much of the focus on electrification,” he replied. “Whilst biomethane was mentioned in the context of national energy security and diversification of gas supply, there are extended benefits in relation to agriculture, the energy transition and food security.

“Industry-wide anaerobic digestion companies need clarity on the role of biogenic CO₂ in carbon markets, grid access and the role of biomethane in hard-to-abate industries, including low-carbon-fuel innovation for aviation and

Renewable Technology and clear guidance on assessing it will aid developments,” added Veitch. “We encourage English planning policy to follow the announcement of Scotland's National Planning Framework 4 in February 2023, which underpinned the climate emergency as a critical lens for assessing applications at a local level.”

He explained that from a feedstock perspective, much of the UK's farmland is tenanted on short-term agreements, which has implications on procurement. Better incentivisation for landowners to enter long-term agreements would allow growers to analyse longer-term feedstock rotations and digestate storage opportunities.

Nevertheless, Veitch told *Bioenergy Insight* that Acorn's biggest achievement to date is securing planning permission at its first AD site near Winchester in southern England.

“This site will provide renewable biomethane to heat over 7,000 homes per year and capture over 14,000 tonnes of biogenic CO₂ annually from mid-2024. We are working hard to ensure that many more sites will be granted planning permission this year,” he concluded. ●

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to consultation – nuclear power will be classed as environmentally sustainable.”

This prompted criticism from Chris Huhne, chairman of the Anaerobic Digestion and Bioresources Association (ADBA), who responded: “For renewables and net zero, this is a never-never budget of far-off promises that fails to deliver on immediate and available home-grown solutions like green gas and onshore wind.” He added that “new biogas plants can be built in two years, cutting emissions and improving energy security.”

In light of this political situation, *Bioenergy Insight* asked Veitch for his thoughts on the government's support for the AD sector.

“The ‘Power Up Britain’ publication of March 2023 had underwhelming emphasis on the role of biomethane in decarbonising gas, with

transport. This will incentivise investment and stability in the markets going forward.”

Veitch also observed that standardised regulation and open communication between policy makers is helpful for growers, enabling better understanding of the future landscape. This would give AD companies the potential to benefit from long-term feedstock agreements.

The challenges of short-term planning

When *Bioenergy Insight* asked what the biggest challenge facing the sector is, Veitch said the national planning system is a major limitation delaying the development of AD infrastructure for biomethane production.

“Reform of the planning system is required to reduce planning delays, and clear definitions of AD as a

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