

Ashton Keynes Green Energy

Locational justification

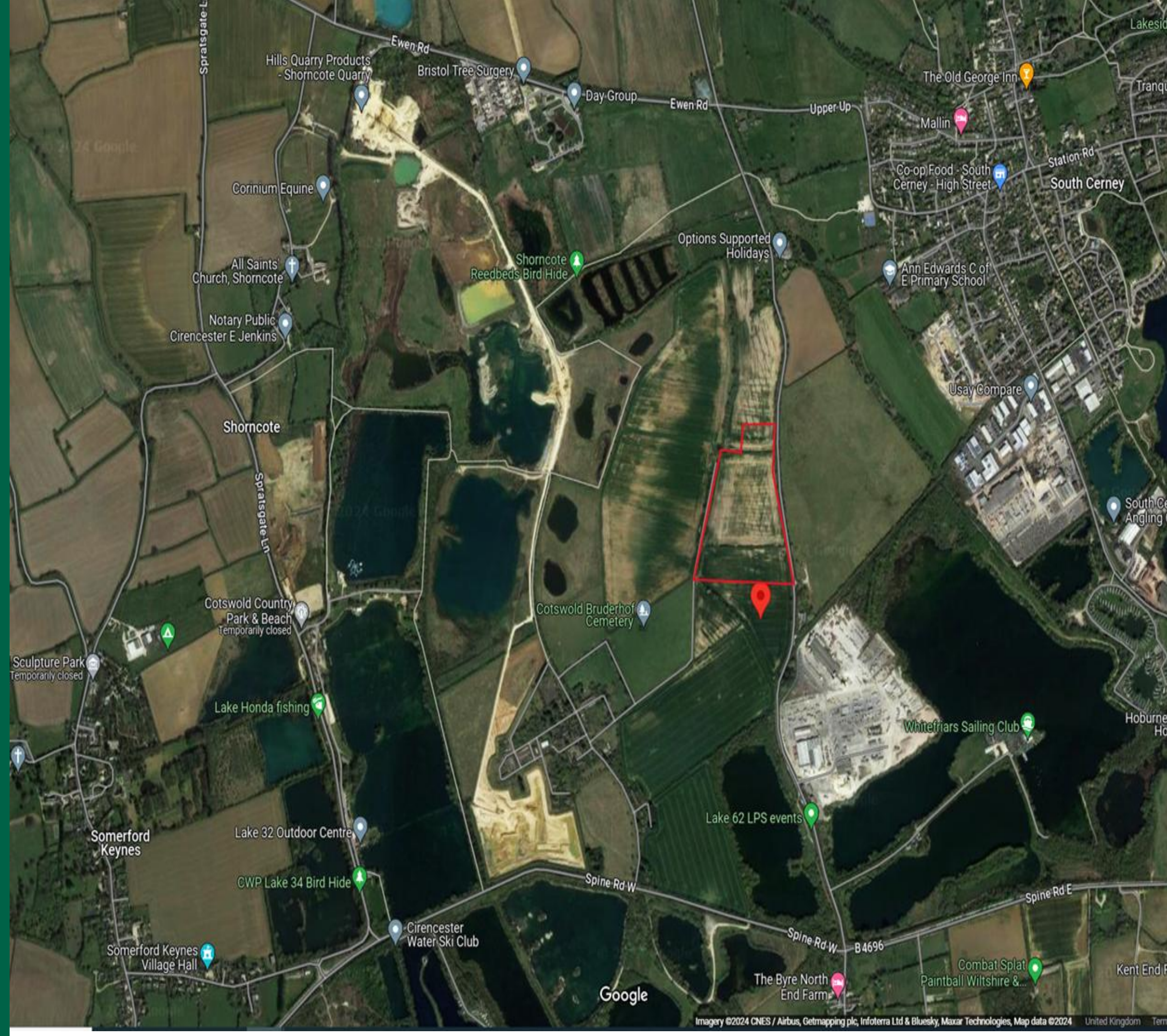


Context

- Acorn Bioenergy submitted application in 2023 for a renewable bioenergy facility near Ashton Keynes and South Cerney.
- It would generate enough carbon negative and renewable gas to heat all the homes in Cirencester (9,300 homes every year).
- The plant needs agricultural feedstock (only) to operate, together with agricultural markets for natural digestate fertiliser byproduct.
- This requires a rural location, within an arable farmed landscape .
- We help create a sustainable circular economy, where rotational break crops, straw residue and agricultural waste are recycled and recovered to create green gas, natural field fertiliser and zero waste.
- The plant supports sustainable farm diversification at a time when British farming viability is under serious threat, and protects traditional arable field landscapes.

Location

- Outside of setting of Cotswold National Landscape
- Lies near northern boundary of Cotswold Water Park – designated as SSSI not for landscape value
- Well separated from the 177 lakes
- Can't be seen from the lakes or paths around the lakes
- Landscape is dynamic, changing through mineral extraction and contains industrial activity (including HGVs on Ashton Road) and is semi-rural with modern farming practices



Locational requirements

The five key operational requirements that drive the plant's location are:

- **Proximate and central to the farms that supply us** locally sourced agricultural feedstock and receive natural digestate fertiliser.
- **Minimising transport distances** for sustainability and commercial viability purposes, with c. 50% of delivery vehicles not “new movements” but a redistribution of existing agricultural traffic already in the area.
- A **minimum site size of 6ha** to accommodate the gas generating infrastructure, a size which is more typically available on farm holdings.
- **Accessibility to a gas pipeline injection point.** We own and operate a proximate gas injection point where two biomethane fueled tankers would transport gas every 24 hours.
- **Good access to the strategic road network.** Via Ashton Road and Spine Road East the plant connects to national road network designed for HGVs. Route does not go through villages.

Benefits to the Ashton Keynes Farming Community

Key Conclusions from our Agricultural Economy Report, Savills:

- **Feedstock Viability:** Local farms provide consistent access to silage, straw residue and agricultural waste streams serving an agricultural community and located in an agricultural community.
- **Livestock Trends:** declining dairy and beef cattle numbers signal the need to diversify farm income and embrace new methods to enrich soil health.
- **Fertiliser Transition:** Digestate fertiliser offers economically and environmentally beneficial alternative to manufactured fertilisers, especially given 2027 carbon tax on synthetic inputs.
- **Local Farm Benefits:** by providing outlet for feedstock and digestate fertiliser, plant strengthens circular farming practices and supports long-term farming viability.

Feedstock Farming Benefits

Feedstock Type	Tonnage per Annum	Land Needed Ha	Available in Local Area	Local Benefits
Rye Silage	15,000	545	Yes	Provides reliable new income to local farmers
Maize Silage	12,000	300	Yes	Historically grown to feed dairy cows. Forecast decline in local cow numbers means Plant creates an alternative demand for this already grown crop, making use of local farming skills
Grass Silage	14,000	350	Yes	Predominant crop in local area. Supplied by ex livestock farmers whose production can be increased through application of digestate fertiliser; also, from use in arable rotation to control problem weeds such as blackgrass which has been historically incentivised by Govt support schemes which are discontinuing so Plant provides commercial case for maintaining grass arable rotation
Straw	20,000	8,000	Yes	Locally declining livestock numbers creates opportunity for sale to Plant to create renewable and carbon negative energy. Beneficial to established network of farm contractors, straw merchants and specialist hauliers. Local proximity of plant to straw market allows farms to improve carbon footprint
Poultry Litter	15,000	N/A	Wye Valley	Avara Foods, largest poultry supplier in Wye Valley, halted sale of poultry litter as fertiliser within River Wye catchment area in 2023 to combat phosphate pollution. 160,000 tonnes exported each year. Spreading digestate from Plant will enhance nitrogen and phosphate supply to arable soils
Farmyard Manures	10,000	N/A	Yes	Provides reliable new income to local farmers and allows decarbonisation of farm businesses
Slurry	5,000	N/A	Yes	Provided to the Plant in return for digestate, which is more nutrient dense product coming back. Helps farming businesses as they continue to look for financial savings and decarbonisation strategies

Digestate Farming Benefits



- Plant would produce:

Digestate Type	Tonnes Per Annum
Fibre Digestate	63,882
Liquid Digestate	56,784
Total Digestate Output	120,666

- Plant digestate contains essential crop nutrients (nitrogen, phosphorous and potassium) that offset need for often imported synthetic fertilisers such as ammonium nitrate.
- Based on commercial fertiliser process and nutrient concentrations, the estimated economic benefit of digestate replacement is over £1.4 million per year, a significant saving to local farmers.
- These savings support farm business resilience and incentivise adoption of digestate in place of manufactured fertilisers, especially considering upcoming January 2027 carbon taxation (Carbon Border Adjustment Mechanism) on synthetic fertilisers.
- Digestate improves soil health as it contains organic matter, reduces greenhouse gas emissions and supports circular agricultural systems including nutrient cycling.
- The production of natural digestate reinforces strategic value of the Plant to the local farming network.

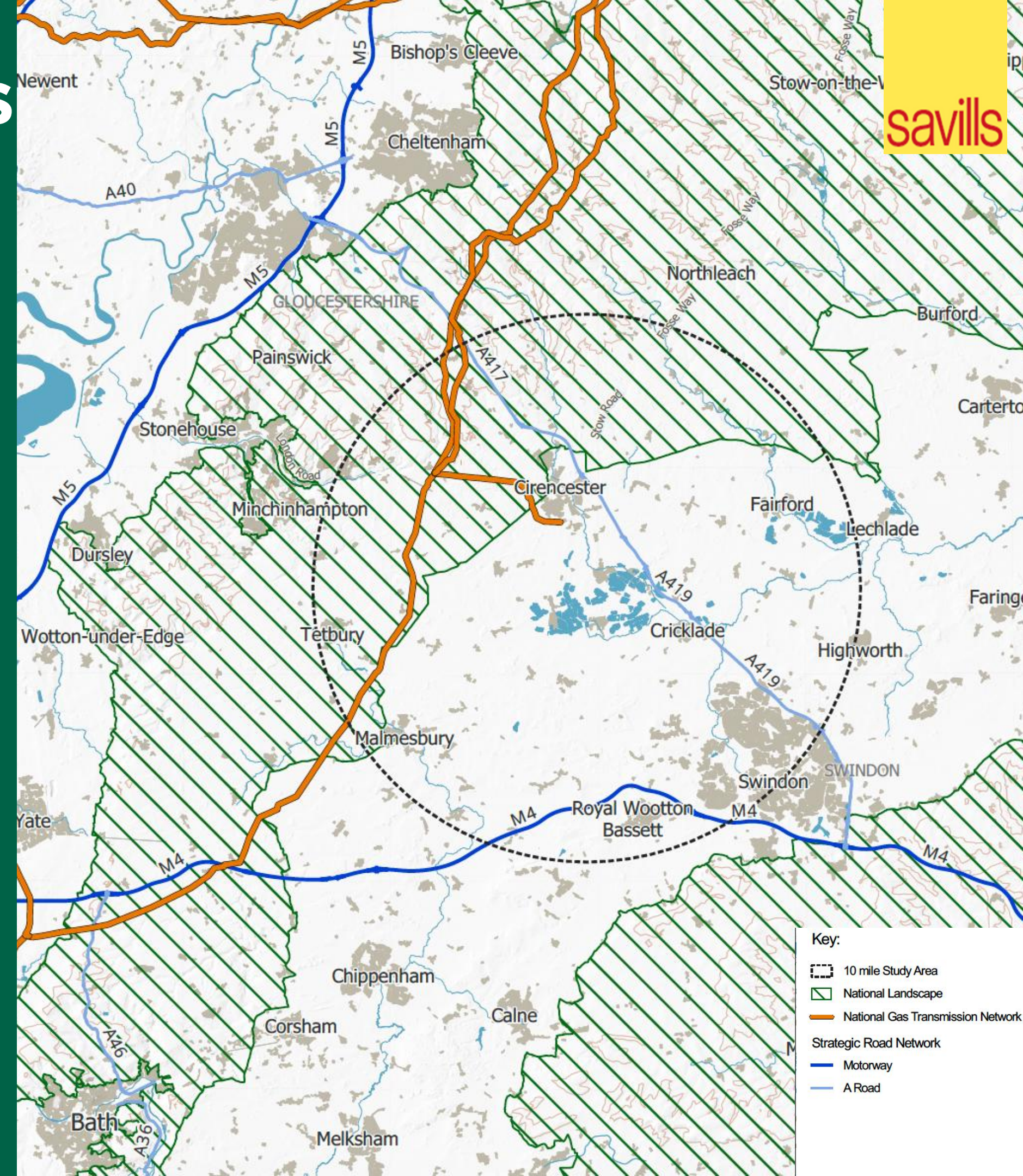
Preserving the Farmed Landscape



- Farming has shaped landscape character for hundreds of years.
- The current pressures on farming, including decline of dairy and beef cattle farming in the local area, creates real landscape risks.
- Field boundaries are noted to be declining in the Cotswolds and Clay Vales.
- The emerging farming changes would tend to increase decline, or stall recovery, of field boundaries and traditional stone walls.
- Without a means of diversified income, farms will be under greater pressure to reduce landscape management budgets.
- We can help arrest this decline, providing certainty of income and in turn protect landscape character of the local area.

Environmental Constraints and Opportunities

- Brownfield and industrial land tend to be in non-agricultural areas and are too small and not suitable.
- Cotswold National Landscape is not a suitable location.
- A small gas pipeline spur runs to the south of Cirencester, but is co-incident with the planned urban extension to the town, so is not suitable.
- There are no alternative site locations with better road access within the feedstock area.
- Location on minerals allocation sites is not possible, as this would contravene planning policy on minerals safeguarding.
- Avoid adverse effects on heritage and ecological assets.
- Avoid Flood Zones 2 and 3.
- Avoid prime agricultural land.



Summary

- The plant serves an agricultural community and needs to be located within an agricultural area.
- It supports the delivery of a diversified rural and circular economies.
- It helps farmers protect the local landscape character.
- It minimises landscape impacts and avoids impacting other sensitive wildlife and heritage assets.
- It has excellent strategic road access, and 50% of the plant's traffic is a simple redistribution of existing agricultural traffic already on road.

