

## Response to Natural England's Information Request – 23<sup>rd</sup> May 2025

Planning consultation: PL/2023/03359 Construction and operation of anaerobic digestion facility, ancillary infrastructure, and construction of new access from Ashton Road.

**Location: Land West of Ashton Road, Ashton Keynes, Wilts, SN6 6QT**

This document responds to a request for further information from Natural England (NE) ref. 493709 dated 21st January 2025, regarding the proposed construction and operation of an anaerobic digestion (AD) plant on land west of Ashton Road, Ashton Keynes, hereafter referred to as 'the site'. The

following additional information was requested by NE:

- Information / clarification on surface water (quality and quantity) and potential impacts on the Cotswold Water Park SSSI.

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### NE Question

*As submitted, the application could have potential significant effects on the Cotswold Water Park SSSI. Natural England requires further information in order to determine the significance of the impacts and the scope of mitigation.*

### Acorn Bioenergy Limited Response:

The annual water requirement for the plant will be 42,000m<sup>3</sup>. The site will consist of around 3.80ha of impermeable hardstanding and lagoons that do not allow water infiltration and runoff from these areas will contribute to the AD plant's process water demand.

Runoff from designated 'dirty areas' of the site will be used to meet the AD plant's water requirement in the first instance; these are areas where rainwater falling on hard surfaces may be contaminated with surface runoff from materials such as silage. Dirty water runoff generated from areas such as the silage clamps, lagoons, and the bund, will be collected within below ground containment tanks via drainage channels, pipes, and chambers.

A below ground containment volume of 53.0m<sup>3</sup> will be available for the temporary storage of dirty water which will be pumped into above ground storage tanks located within the containment bund. These tanks shall have a combined capacity of 3,253m<sup>3</sup>, which will be continuously fed back into the process. Site areas designated as 'dirty' amount to 27,941m<sup>2</sup>.



The anticipated average annual rainfall at the Site means that it is predicted that 30,238 m<sup>3</sup> of dirty water will be captured for reuse within the facility. Clean water will also be harvested from clean areas of the site such as roofs and clean hardstanding. This will be conveyed by gravity to an underground crate system installed under the hardstanding at the west of the site. The crate system has a storage capacity of approximately 1744.6m<sup>3</sup> and is connected to a surface water storage lagoon with a capacity of 160m<sup>3</sup>. The lagoon is located at the lowest point to the southeast corner of the Site, north of the access gate and allows for additional contingency storage during peak rainfall events.

The facility anticipates that it will harvest and reuse as much clean water as possible to limit the use of mains potable water and will do so in preference to the controlled release of surface water runoff to the highways ditch from the surface water storage lagoon during an exceptional rainfall event. This is in line with Best Available Techniques (BAT)<sup>1</sup> for preventing and minimising emissions and impacts to the environment from the operation of the AD plant.

Flood Risk Assessment and Surface Water Drainage Strategy, ground levels slope from west to east from maximum elevation of 102.25m Above Ordnance Datum (AOD) to 89.75m AOD in the southeastern corner of the site. The reports identify that the site will be situated on the east side of an isolated hill known as Ashton Downs, with the SSSI (Cotswold Water Park SSSI) located approximately 500m away, further downhill to the southeast.

The site design incorporates hardstanding and secondary containment constructed in accordance with CIRIA C736F<sup>2</sup>. This requires that the secondary containment system will be suitably sized to accommodate either 25% of the combined volume of the digester tanks or 110% of the volume of the largest tank; whichever is the greater volume. Consequently, the containment will be designed to capture a minimum 25% of the combined volume of the tanks as this represents the slightly larger volume.

An additional 100mm freeboard will be provided to allow for firefighting foam as required by the CIRIA736F, to accommodate the combined volume of firewater and digestate materials in the rare event of a catastrophic tank failure and a fire happening together.

In addition, all roads and other areas of the site will be designed with a kerb to assist containment and levels across the site will be set so as to contain surface water runoff within the site.

The Drainage Strategy for the site includes the following features:

- 53m<sup>3</sup> volume below ground containment tanks for 'dirty' contaminated water collected through drainage, channels, pipes, and chambers.
- 3,200m<sup>3</sup> volume Above ground tanks for 'dirty' contaminated water pumped from the below ground tank.
- 744.6m<sup>3</sup> Storage crates below ground to attenuate 'clean' surface water and pump to the rainwater storage lagoon.
- 160m<sup>3</sup> volume rainwater storage lagoon that collects water from underground pipes, channel drains and pumped water from the storage crates.
- Full retention petrol interceptor, to reduce the presence of hydrocarbons discharged from the clean water system.

<sup>1</sup> Guidance: Best Available Techniques: environmental permits, Environment Agency, February 2016

<sup>2</sup> Containment systems for the prevention of pollution (C736F), CIRIA, June



In the event of a fire or explosion within the secondary containment bund, potentially polluting liquids should be contained, with fire water retained within the bund and/or the below ground containment tanks. This would contain and prevent the discharge of any materials that might otherwise cause harm to the SSSI and allow the site operators to contain polluting liquids prior to pumping into tankers for removal from the site.

The proposed access gate to the site is positioned at the southeastern corner of the site; the SSSI is located further downhill to the south east. In the event of an incident on site, sandbags would be deployed across the access gate to block any potential pathway of polluting materials, including fire water, preventing it reaching the highway ditch and thence potentially impacting the SSSI 500m away. Any fire water collected will be transferred via pumps to the surface water storage lagoon in the first instance.

As previously described, the site will temporarily retain fire water on site within the designed secondary containment, dirty and clean water attenuation systems outlined below:

- Secondary containment constructed in accordance with CIRIA C736, to accommodate either 25% of the combined volume of the digester tanks or 110% of the volume of the largest tank; whichever is the greater volume. An additional 100mm freeboard will be provided to allow for firefighting foam.
- 53m<sup>3</sup> volume below ground containment tanks for 'dirty' contaminated water collected through drainage, channels, pipes, and chambers.
- 3,200m<sup>3</sup> volume Above ground tanks for 'dirty' contaminated water pumped from the below ground tank.
- The below ground 'crate' system as outlined in the Surface Water Drainage Strategy, which provides 744.6m<sup>3</sup> of attenuation storage volume.
- 160m<sup>3</sup> volume attenuation lagoon.

To build upon these existing features, during an incident, sandbags will be deployed to create a temporary barrier at the access gate at the south east of the site. Discharge to the highways ditch will be stopped. This will remove the potential overland pathway, downhill to the SSSI in the unlikely event that any potentially polluting liquids escape the containment and attenuation systems.

Furthermore, in the event of an environmental incident, site staff will undertake walk arounds in the locality to ensure nearby sensitive receptors, including the SSSI are closely monitored so that it can be confirmed they remain unaffected. If staff observe polluting materials may escape the site, sandbags will be used to for a barrier to polluting materials which will then be removed via pump and tanker.

In conclusion, through design, mitigation and operational measures associated with the use and storage of water within the facility there is no significant impact associated with surface water from the application site on the Cotswold Waterpark SSSI.