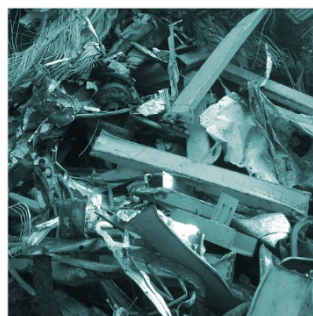
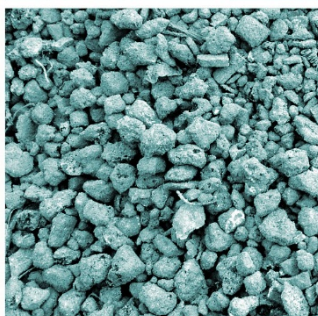
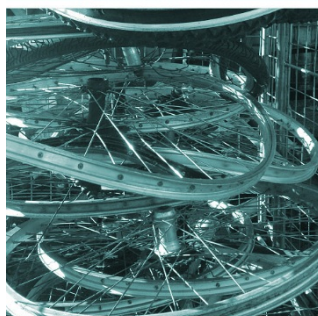
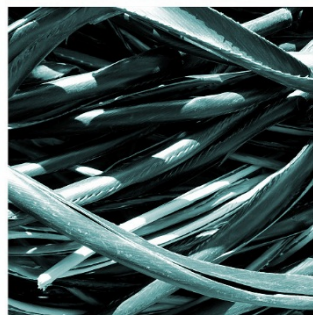
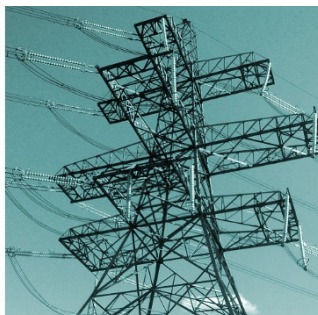


EVERCREECH RENEWABLE ENERGY LIMITED AD FACILITY

Non-Technical Summary

October 2021



Client: BioConstruct GmbH
Document Reference: HC1683-04



REPORT SCHEDULE

Operator: BioConstruct NewEnergy Limited

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1. NON-TECHNICAL SUMMARY

1.1. Non-Technical Summary

- 1.1.1. The proposed Evercreech Renewable Energy AD Facility is a wet mesophilic anaerobic digestion facility that will produce biogas to be upgraded to biomethane for injection into the gas grid network. The site will also produce enough gas to power a combined heat and power engine with outputs of 1.067 MW el. and thermal inputs of 2.608MW. The site will also operate a 1.100 MW output (1.196MW thermal inputs) dual fuel boiler that will operate on biogas and be capable of operating on diesel if required. The site is located at Evercreech Renewable Energy Limited AD Site, Unit 22, Evercreech Junction, Shepton Mallet, Somerset, BA4 6NA, NGR ST 63542 37112 and will be operated by BioConstruct NewEnergy Limited.
- 1.1.2. In addition to the main Schedule 1 anaerobic digestion activity at the site, there will be several other directly associated activities (DAA's) associated with the site as follows; emergency flare operations, biogas combustion in a CHP and biogas boiler, biogas upgrading to biomethane, waste pasteurisation, raw material storage, biogas treatment (desulphurisation), digestate separation, digestate storage, incoming waste storage and treatment (de-packaging and pre-mixing) and collection and storage of uncontaminated water.
- 1.1.3. An application for an Environmental Permit is being made to operate the facility that will be regulated by the Environment Agency.
- 1.1.4. The operation is designed to process up to 90,000 tonnes of waste per year received as either packaged or unpackaged solid wastes, or pumpable liquid wastes, equating to approximately 246 tons per calendar day of waste feedstock. The operator plans to operate the site in line with the PAS110 standard to achieve certification with the Biofertiliser Certification Scheme, and hence claim end of waste status on final digestate arising from the process that will go to agricultural use. All incoming wastes will therefore be in accordance with those that can be accepted as listed in the digestate Quality Protocol Appendix B.
- 1.1.5. Storage facilities for solid wastes will be situated inside the waste reception building. All solid and liquid wastes will be offloaded inside. Packaging will be removed from wastes via a de-packaging machine located inside the building and the de-packaged waste will be blended in a mixing pit and/or feeder unit to form a pumpable substrate that can be pumped via an enclosed pumping line into the process. The building will be fitted with an extraction system and air will be extracted and

passed through an odour abatement system prior to being released to atmosphere from a single release point.

- 1.1.6. There are three liquid waste reception/pre-storage tanks and an additional waste buffer tank located outdoors in the bunded area. These tanks are sealed, with the head space in continuity with the gas line and so no displaced air emissions are released to atmosphere on tank filling.
- 1.1.7. Wastes will be fed into the process at a maximum rate of 246 tonnes a day, and retention time within the digesters will be an average of 60 days.
- 1.1.8. The main process area will consist of three primary digesters, two secondary digesters, and a final digestate store.
- 1.1.9. Biogas generated in the digesters will be stored in gas storage bags in the roof space above the digesters and final digestate store. This AD infrastructure is contained within a dedicated sealed bund to provide protection and containment in the event of any incident or equipment failure.
- 1.1.10. Biogas will be diverted to the CHP engine, boiler and upgrading unit via the gas line and gas blowers, where it will be burnt to produce electricity or heat or upgraded to produce biomethane that can be injected to the national grid. Gas quality, pressure and production will be monitored on an ongoing basis. The overall process control will have a SCADA operation interface which will send automatic messages to staff 24 hours a day if process parameters exceed given limits. The staff will have remote access to this system 24 hours a day.
- 1.1.11. Condensate arising from the gas line, CHP and upgrading unit will be collected in a dedicated collection system and pumped back through the process.
- 1.1.12. The substrate will be macerated to a minimum of 12mm and the final digestate will be heated to a minimum of 70° C for at least an hour in one of three pasteurisation units before being pumped to the final digestate storage tank.
- 1.1.13. The site will operate an emergency flare for management of excess gas during engine down time, and a dual fuel boiler capable of utilising biogas for heating of process tanks. There will also be an emergency backup generator on site to sustain key functions in the event of a power outage, and the dual fuel boiler can operate on diesel to provide heat as a further contingency measure if required.
- 1.1.14. Heat generated by the CHP engine will be recovered for process heating on the AD site. Electricity generated by the CHP will be used for on-site operations at the AD plant as will heat generated by the biogas boiler.
- 1.1.15. Hydrogen sulphide will be managed via a combination of biological control on sulphur nets in the head of the digesters, and chemical dosing with ferric chloride. Ferric chloride will be stored in a dedicated tank in the bunded area of the site. All waste storage, process and raw material tanks will

be stored within a building with a sealed drainage system or in a suitably sized impermeable concrete bund.

- 1.1.16. Waste storage and process tanks will be fitted with agitators, level alarms, and emergency under/over pressure relief valves in the case of gas tight vessels. The digesters are also fitted with dosing points for other additives such as anti-foaming agents, enzymes, and trace elements.
- 1.1.17. An antifoaming system will be installed in Fermenter 1-3 and Post-Fermenter 1-2 (system to spray/inject antifoaming agent on top of the liquid level inside tanks); additionally, a foam detector is installed in each tank to alert staff at an early stage should foaming occur.
- 1.1.18. Rainwater accumulating within the concrete bund area will be collected in a sump. Water will be used in the process, or if not required for this purpose, water quality testing will be undertaken and if agreed quality benchmarks are not exceeded, water will be discharged to surface water.
- 1.1.19. Final digestate will be passed through a separator which is located inside the waste reception process building. The separated solid digestate will drop into a trailer and be taken off site for storage in field heaps at the site of spreading as use as an agricultural fertilizer. The separated liquid digestate may be re-circulated within the process to assist with pumpability of substrate or stored in the final store pending removal from site via tanker. The tanker removal point will be located inside the main reception/process building. Digestate will either be spread to land under a waste landspreading deployment by a permitted mobile plant landspreading contractor, or by a third-party contractor as PAS110 end of waste status material per the requirements of the quality management system associated with the standard. All digestate will be spread to land in accordance with the Nitrate (Pollution Prevention) Regulations (NVZ's), the Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018 ('Farming Rules for Water'), and animal by-products regulations governing spreading of category 3 animal by-products derived materials.
- 1.1.20. Domestic sewage will be discharged to foul sewer.
- 1.1.21. The whole facility will be operated in accordance with an Environmental Management System (EMS) and technical competence will be achieved by the Company's pending CMS accreditation. The company also has inhouse staff who hold the relevant AD WAMITAB qualification.
- 1.1.22. The site will process category 3 animal by-products and therefore will operate according to an Animal and Plant Health Agency (APHA) approval following full validation of the pasteurisation and AD system.



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