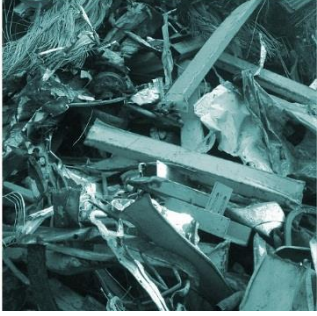
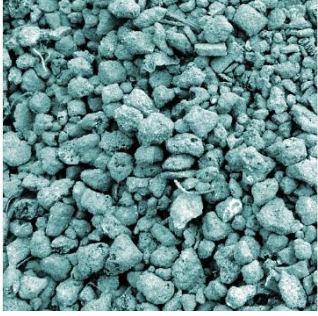
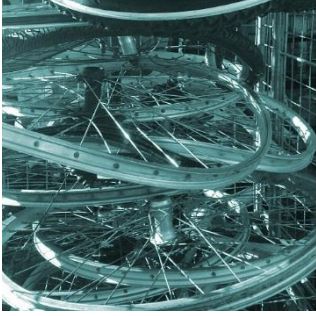
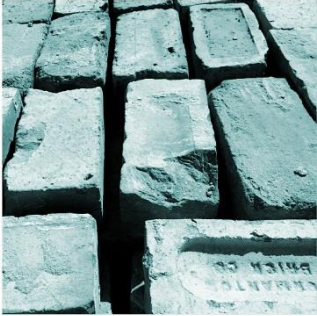
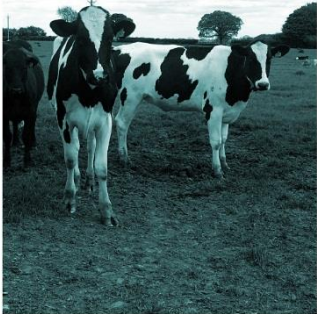
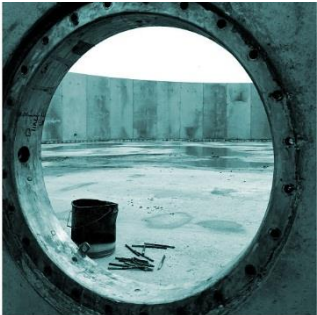


# BIO DYNAMIC UK LIMITED PERMIT VARIATION APPLICATION

Summary of Changes

April 2022



biodynamic

Bio Dynamic UK limited

Client: Bio Dynamic UK Limited  
Document Reference: HC1677-02

## REPORT SCHEDULE

**Operator:** Bio Dynamic UK Limited

**Client:** Bio Dynamic UK Limited

**Project Title:** Bio Dynamic UK Limited Permit Variation Application

**Document Title:** Summary of Changes

**Document Reference:** HC1677-02

**Report Status:** Final V1.2

**Project Director:** Joanna Holland

**Project Team:** Jo Chapman

AUTHOR	DATE		
Jo Chapman	5 <sup>th</sup> April 2022		
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APPROVED			
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Final Version 1.0	19 <sup>th</sup> August 2022	For submission to EA	Maxwell Bagnall
Final Version 1.1	24 <sup>th</sup> April 2023	Update site configuration	Maxwell Bagnall
Final Version 1.2	6 <sup>th</sup> June 2023	Update to reference phase 1 and phase 2 changes and add waste codes for transfer activity	Maxwell Bagnall

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# 1. SUMMARY OF CHANGES

## 1.1. Summary of Changes

- 1.1.1. The operator is in the process of undertaking significant refurbishment at the site to uplift infrastructure in line with current Best Available Techniques (BAT) and to make changes to overall operations at the site.
- 1.1.2. An assessment of BAT compliance has been submitted with this application (reference HC1677-11) which provides further details of the site changes that have been made to achieve BAT.
- 1.1.3. The operational changes at the site are as follows.
- 1.1.4. There will be a change in use of the former 'Cat 1' digestate storage tank to be used as a secondary digester fitted with a gas storage roof. This will mean that the site will have an increased processing capacity and increased total digestate and gas storage capacity. At the time of duly making of this application this infrastructure change has been made (phase 1).
- 1.1.5. The operator wishes to include the facility to accept, store and treat incoming waste materials at the site to then be exported from the site for use as a feedstock material at other AD plants. This is to include both liquid and solid feedstock materials. Methods of processing will include current processes of de-packaging/shredding/bulking and screening. At the time of duly making of this application, the infrastructure is in place to allow this activity to commence once the permit is varied (phase 1).
- 1.1.6. The increased AD processing capacity and additional treatment and export activity will result in a proposed increase in total waste processing capacity at the site to c. 150,000tpa.
- 1.1.7. 20,000tpa of wastes will be accepted for the storage, treatment, and transfer activity and the remaining 130,000tpa will be processed for use in the AD facility. The operator wishes to list the same wastes for the storage treatment and transfer activity as appear on the AD activity permit. These are listed in appendix 1.
- 1.1.8. There will be a change in the layout of pre-existing tanks and other infrastructure at the site, and addition of new tankage. The site bunding and secondary containment arrangements will be uplifted to accommodate these changes and additions. At the time of duly making of this permit application, uplift of the bunding/secondary containment has been undertaken (phase 1). The internal organisation of the waste reception shed has been re-organised, and refurbishment and replacement of some equipment has taken place. There has been a general uplift to the infrastructure, surfacing and drainage in the reception shed. At the time of duly making this application the refurbishment of the waste reception shed has been undertaken and approved by the Animal and Plant Health Agency for both processing of feedstocks for AD and for waste storage and transfer (phase 1). One Tiger de-packaging machine line is installed and operational and a second line will be installed when waste tonnages accepted can increase following issue of the varied permit. The staff office and welfare facilities will be re-located to a different area of the site. Domestic sewage will be collected in a sealed chamber which is integral to the welfare offices facility and removed from site by tanker on a regular basis. At the time of duly making of this application, the welfare offices have yet to be moved but are scheduled to be moved in the short to medium term under the phase 1 development of the site.
- 1.1.9. The refurbishment of the shed and existing tankage and addition of new tankage at the site will result in an increase in waste storage capacity for wastes prior to treatment in the AD

process/export from site. A

summary of the status of installation of new tankage at the site at the point of duly making is shown in the table below.

**Table 1 – New Site Tankage and Status**

Tank and Status	Capacity in m <sup>3</sup>	Tank Construction Material
Liquid Feeds Intake Tank (installed)	400	Glass coated steel tank in concrete bunded area
Solids Feed Intake Tank (installed)	150	Glass coated steel tank in concrete bunded area
Phase 2 liquid tank 1 (To be installed short to medium term)	400	Glass coated steel tank in concrete bunded area
Phase 2 liquid tank 2 (To be installed short to medium term)	400	Glass coated steel tank in concrete bunded area
Phase 2 buffer tank (To be installed short to medium term)	1000	Glass coated steel tank in concrete bunded area
Pasteuriser 1 (Installed)	68	Stainless steel tank in concrete bunded area
Pasteuriser 2 (Installed)	50	Stainless steel tank in concrete bunded area
Buffer tank (Installed)	188	Stainless steel tank in concrete bunded area
Water harvesting tank (Installed)	30	Polyethylene tank inside main reception building
Water harvesting tank (Installed)	30	Polyethylene tank inside main reception building
Digestate Store (phase 2 yet to be installed medium to long term)	TBC	Concrete tank in main process area concrete bund – with gas storage roof and associated bund extension
Post Digester (phase 2 yet to be installed medium to long term)	TBC	Concrete tank in main process area concrete bund – with gas storage roof and associated bund extension

- 1.1.10. Biogas production at the site will increase as a result of increased onsite processing capacity. There will be two new 1.25Mw output CHP engines installed at the site which will be in addition to the two pre-existing engines. The two new engines will each have thermal inputs of is 2.955kW. At the time of duly making of this application the two new engines have not yet been installed at the site. These are scheduled to be installed in the short to medium term under the phase 1 development of the site.
- 1.1.11. A new biogas upgrading facility which is a directly associated activity (DAA) to the main AD activity has been developed within the current footprint of the site. This site has been issued a separate permit reference EPR/KP3707LX and the permit holder for this permit is BD Gas Permits Limited. The site plans have been updated to reflect this change. The AD operation will export biogas to the BD Gas permits upgrading facility and will receive off spec or unburnt gas, and condensate returns from the site for further processing, storage, or burning to flare.
- 1.1.12. There will be addition of a second emergency backup flare to manage the now greater volumes of gas in the event of downtime of gas consumers. At the time of duly making of this application the second flare has been installed at the site under the phase 1 development.
- 1.1.13. There will be addition of a dual fuel boiler which can operate on biogas or diesel as a backup boiler to provide heat for pasteurisation at the site as a contingency measure. The boiler has thermal outputs of 2600kW and thermal inputs of 2731kW. The dual fuel boiler has yet to be installed at the site and will be installed in the short to medium term under the phase 1 development.
- 1.1.14. There will be no change to the overall site footprint or permit boundary.
- 1.1.15. There will be no change to the wastes accepted at the site, unless arising from the outcome of the ongoing Digestate QP review.
- 1.1.16. Subject to planning approval/final confirmation, there will be an extension to operational hours at the site to 6am-10pm Mon-Fri and 6-7am - 1pm on Saturday. It is anticipated that waste deliveries will be accepted at the site during the hours of 6am-8pm Mo-Fri and 6-7am to 12noon on a Saturday. Security staff will be present at the site out of operational hours so either operations or security staff will be present on the site 24 hours a day 7 days a week.
- 1.1.17. There will be a change/upgrade of the current odour abatement system that treats extracted air from the reception shed, and addition of further odour abatement measures the site to manage risk arising from emissions from other activities at the site (displaced air from storage tanks and digestate offtake activities). At the time of duly making of this application new abatement systems have been installed at the site under the phase 1 development serving the shed and tank farm and are undergoing commissioning. Installation of measures to serve the tanker offtake point are yet to take place and are scheduled for installation in the short term under the phase 1 development.
- 1.1.18. The main site containment bund surrounding the pre-existing digesters and former 'Cat 1' storage tank will be refurbished and uplifted to bring it in line with current BAT. At the time of duly making of this application this change has been made under the phase 1 development.
- 1.1.19. The digester tanks and gas roofs will be refurbished to bring them in line with current BAT. At the time of duly making of this application this change has been made under the phase 1 development.

- 1.1.20. The operator will continue to store raw materials at the site. The inventory of materials, annual quantities used and locations and methods for storage will be reviewed and updated to reflect onsite changes.
- 1.1.21. Rainwater from roofs and from the concrete bunded areas of the site will be collected and used within the process. At the time of duly making of this application the two new water harvesting tanks have been installed at the site (see Table 1).
- 1.1.22. A borehole will provide additional water for use in the process. This is subject to a separate application for an abstraction licence and at the time of duly making is still under review.
- 1.1.23. The site EMS will be reviewed and updated to accommodate the changes.
- 1.1.24. A number of improvement conditions were listed on the site permit when the permit was varied in 2021 as a result of the national biowaste review, intended to bring all biowaste operations in line with current Best Available Techniques (BAT). The operator intends that this application will satisfy the requirements of IC1 – IC5 and wishes these to be considered/assessed as complete as part of this application. Information to satisfy the requirements is included with the application.

**Appendix 1 – List of Wastes for Storage, Treatment and Transfer Activity**

The list of waste to appear on the storage treatment and transfer activity are to mirror those listed for the AD activity which are currently as follows.

<b>List of wastes for Colwick AD Site Waste Storage, Treatment and Transfer Activity</b>	
<b>Total annual processing capacity of 20,000tpa</b>	
02 01 01	sludges from washing and cleaning – vegetables, fruit and other crops
02 01 02	animal tissue waste
02 01 03	plant tissue waste
02 01 06	animal faeces, urine and manure (including spoiled straw) only
02 01 07	wastes from forestry
02 01 99	residues from commercial mushroom cultivation
02 01 01	sludges from washing and cleaning – vegetables, fruit and other crops
02 02 01	sludges from washing and cleaning 02 02 02 animal tissue waste 02 02 03 materials unsuitable for consumption or processing 02 02 04 sludges from on-site effluent treatment
02 02 02	animal tissue waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 04 03	sludges from on-site effluent treatment
02 05 01	materials unsuitable for consumption or processing
02 05 02	sludges from on-site effluent treatment
02 06 01	materials unsuitable for consumption or processing
02 06 03	sludges from on-site effluent treatment
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
16 10 02	liquor/leachate from a composting process that accepts waste input types listed in this table only



19 02 03	waste types listed within this table, Table S2.2, that have been mixed together only
19 02 10	glycerol not designated as hazardous i.e. excludes EWC code 19 02 08
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 06 03	liquor from anaerobic treatment of municipal waste (from a process that treats wastes which are listed in this table only)
19 06 04	digestate from anaerobic treatment of source segregated biodegradable waste (from a process that treats wastes which are listed in this table only)
19 06 05	liquor from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (from a process
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water (from a process that treats wastes which are listed in this table only)
19 12 12	waste types listed in this table, Table S2.2, that have been subjected to mechanical treatment only (from a process that treats wastes which are listed in this table only)
20 01 08	biodegradable kitchen and canteen waste
20 01 25	edible oil and fat
20 02 01	biodegradable waste
20 03 01	mixed municipal waste – only separately collected biodegradable wastes of types listed within this table
20 03 02	waste from markets – allowed only if source segregated biodegradable fractions e.g., plant material, fruit and vegetables



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