- A 182sqm digestate off-take and workshop building measuring 26m x 7m x 6.5m high to ridge. The fully enclosed off-take and workshop building will provide a connection and venting point for tankers.
- Up to three CHP bio-gas engines and transformers.
- A 26m high multi-core exhaust stack.
- An emergency gas flare.
- Up to three CHP gas engines with a single 13m high multi-core exhaust stack.
- Bio-filter.
- Emergency gas flare.

The proposed ACT facility comprises:

- An 320sqm feedstock building and workshop measuring 40m x 8m x 7m high to ridge. The fully enclosed feedstock building would accommodate a buffer store and feed mechanism to the NEAT units.
- Three NEAT units and associated pyro gas clean up systems.
- A pyro gas buffer tank.
- Three CHP pyro gas engines and transformers.
- A flue gas treatment system to treat exhaust gasses from the syn gas combusters.
- A 28m high multi-core exhaust stack.
- An emergency gas flare.

The proposed associated shared plant and infrastructure includes:

- Two weighbridges 'in and out' (replacing the existing single weighbridge).
- A 155sqm two storey office and welfare block measuring 15.5m x 5m x 6m high (replacing the existing single storey cabin).
- A 24sqm voltage switch gear building measuring 4m x 6m x 3m high.
- 19 car parking spaces.
- New hard surfaced yard and circulation areas.
- An aqueous scrubber and 541sqm bio-filter serving the new food waste reception building, offtake / workshop building and the two existing reception buildings forming part of the established enclosed composting facility.
- An extension to the existing surface water balancing pond.

5.3 Proposed processes

In order to understand the integrated nature of the proposed development it is important to first understand the enclosed composting process. A brief description of the enclosed composting process is therefore given below, followed by a detailed description of the AD and ATC processes.

5.3.1 Established enclosed composting

New Earth operates a dynamic housed window composting process at Blaise. The process is essentially the same as you would find in any home composting bin, with four notable exceptions;

(i) scale – the existing facility currently treats 50,000tpa;

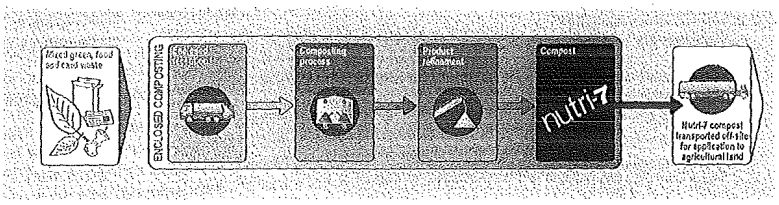
(ii) speed – the existing facility creates the ideal host conditions for the naturally occurring microbes that break down organic matter to get started and do their work;

(iii) type of waste – the existing facility is able to accept food waste (preferably as part of a mix), but on condition that temperatures are carefully controlled to ensure that any pathogens that may be present

(often associated with meat scraps) are killed off during the process in accordance with the Animal By Products Regulations (ABPR).

(iv) regulatory requirements and continuous monitoring – the facility not only required planning permission, but also an Environmental Permit to operate. The operation of the facility is regulated by the Environment Agency who regularly inspect the facility. Other regulatory requirements include compliance with ABPR (described above) and PAS100 accreditation which determines that the resultant compost is of a certain standard. New Earth continuously monitor and record conditions within the composting process, providing a full audit trail.

The process flow diagram below provides a simple overview of the stages that incoming waste will go through on its way to becoming a compost!



Mixed green, card and food waste will be delivered to the proposed facility direct from kerbside collection in Refuse Collection Vehicles (RCVs) with a payload of circa 8t or from waste transfer stations in bulkers (HGVs) with a payload of circa 20-25t.

Vehicles pass over the weighbridge. In addition to being weighed-in, site staff check the Waste Transfer Notices (which include a description of the waste) and drivers Waste Carrier License. It is important to stress that New Earth only accept waste held under contract and that individuals and companies cannot simply turn up on site to drop off waste. Vehicles then proceed to the reception building. The roller shutter doors are opened to allow access and then closed. The incoming waste is tipped onto the sealed floor of the fully enclosed reception building where it is inspected, to ensure that it is as described.

Air within the headspace of the reception building is continuously ventilated creating a slight negative pressure within the buildings reducing the propensity for fugitive emissions. Extracted air passes through a bio-filter before being released to the atmosphere.

The waste material is moved using a low loading shovel. It is fed through a shredder and then moved into one of a number of composting halls. It is piled into a windrow (a long heap) until the hall is full. Once full the material within the hall is referred to as a batch. The composting halls re-create the ideal conditions in which naturally occurring microbes can break down biodegradable waste. This is achieved by means of aeration and irrigation. Aeration takes two forms; firstly the drawing of air through the windrow via under floor ducts, which also creates a slight negative pressure within the building, and secondly, through regular turning using a specialist vehicle. Air ventilated from the building headspace passes through a biofilter before being released to the atmosphere, whilst the air extracted via the underfloor ducts also passes through an aqueous scrubber. Water is also applied as required using an overhead sprinkler system.

Throughout the process, New Earth carefully monitor the temperature of the windrows to:

(i) Gauge the level of microbial activity (as no artificial heat is used) – this acts as a trigger for the aeration and irrigation systems; and

(ii) Ensure that the temperature profiles required under the ABPR are met.

After approximately 28 days a batch will be removed from the halls. The material is transferred to the maturation building, where the material is allowed to stabilise and is screened to remove oversize material. After a further 2 months a 'compost' has been produced. Blaise produces compost to a PAS100 standard which means that it is no longer classified as a waste and can be applied straight to agricultural land.

5.3.2 What is anaerobic digestion?

In its crudest sense anaerobic digestion is a form of composting. The difference between 'traditional' composting and anaerobic digestion processes comes down to the availability of oxygen and the set of micro organisms breaking down the