This Report has been cleared for submission to the Board by the Programme Manager F Clinton
Signed: N. Kearey **Date:** 7/5/09

epa Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

OFFICE OF CLIMATE, LICENSING & RESOURCE USE

INSPECTORS REPORT ON A LICENCE APPLICATION

TO:	DIRECTORS	
FROM:	Dr Tom McLoughlin	- Licensing Unit
DATE:	7th May 2009	
RE:	Application for a waste Licence from Acorn Recycling Ltd., Ballybeg, Littleton, Co. Tipperary - Licence Register No. W0249-01	

Application Details	
Type of facility:	Non-Hazardous Materials Recovery Facility
Class(es) of Activity (**P** = principal activity):	4th Schedule: Class 2 **P** & 13 3rd Schedule 6 & 13
Quantity of waste managed per annum:	45,000 tonnes
Classes of Waste:	Non-hazardous biosolids which include industrial and sewage sludges and other non-hazardous biodegradable materials. Mixed municipal fines, in which case the stable product produced is known as stabilised biowaste-up to 25,00 tpa (of the total 45,000 tpa).
Location of facility:	Ballybeg Composting Facility, Ballybeg, Littleton, Co. Tipperary
Licence application received:	17/10/2008
Third Party submissions:	One
EIS Required:	Yes
Article 14 Notices sent:	14th January 2009
Article 14 compliance date:	29th January 2009
Site Inspection:	2nd December 2008

1. Facility

Acorn Recycling Ltd., proposes to build and operate a composting facility at Ballybeg, Littleton, Co. Tipperary, and plans to treat up to 45,000 tonnes per year of non-hazardous biodegradable municipal waste (BMW) for the production of a Class 1 compost (good quality compost). The company also proposes to use Mechanical Biological Treatment (MBT)[1] procedures at this facility to treat up to 25,000 tonnes (of the 45,000 t) of non-segregated waste to produce bio-stabilised biowaste[2]. Planning Permission has been granted for this facility by the Local Authority. This composting facility is expected to be completed by the end of 2009 and operational by 2010.

According to the applicant, there are two main options (A & B) by which this biodegradable municipal waste (BMW) can be diverted from landfill at this proposed facility:

A. The waste is segregated at source and collected as a separate waste stream in the '3 bin system or the brown bin'. This waste can then be composted to create high quality compost (Class 1 compost) that can be managed without restriction as a valuable product with many uses, subject to the composting process complying with the Department of Agriculture, Fisheries and Food requirements under Animal By-Product Regulations (ABR).
From an environmental perspective the use of the 'brown bin' system is the most favourable method for the diversion of BMW although there are significant logistic and economic challenges for the industry to meet as the use of the 'brown bin' system is not currently in widespread use in Ireland. However, this is expected to change in the near future in order to meet national targets that are set out in the Landfill Directive pertaining to the treatment of BMW. The applicant also sees this system as the most beneficial option for the management of BMW.

B. The biological fraction of biodegradable municipal waste can also be extracted from 'black bins' (mixed municipal waste) using a system of mechanical treatments. The applicant has stated that approximately 66% of this fine material from 'black' bags is high in biodegradable matter and suitable for biological treatment. The product from this is biologically stable material and must continue to be managed as a waste because of the levels of organic fines (bio-stabilised residual waste). It should be noted that the use of this material after going through the composting process is also regulated by the DAFF under the aforementioned ABP regulations.

[1] Means the treatment of residual municipal waste through a combination of manual & mechanical processing and biological stabilisation, in order to stabilise and reduce the volume of waste which requires disposal.

[2] Means residual BMW that has been treated to achieve an EPA approved biodegradability stability standard (to be published) prior to landfilling or alternative use agreed. (Not a compost product standard as understood by EU 1774/2002.)

According to the applicant, one of the main attributes of the proposed facility that will enable it to be economically viable is the ability of the facility to be flexible in terms of the varying types of wastes that it accepts. This includes, once off deliveries of e.g. food production waste (brown bin collections), ongoing contract waste streams from industry and mixed 'black' bin collections.

Because of the uncertainty in the market place on how BMW is handled at source, it is important that the proposed facility be in a position to service both of these biological treatment procedures. It is most likely that both source segregation and MBT procedures will run in parallel within different local authority areas. It is envisaged however that no more than 25,000 t capacity of the facility would be used for this 'black bin' material as there will continue to be a need for the composting of clean biological wastes such as food industry and sewage sludges even if MBT becomes the favoured procedure for the diversion of biodegradable waste from landfill. The environmental impacts on the surrounding environs of treating MBT 'organic fines' material in this way are no different to the composting of 'clean' biological wastes.

It should be noted that the facility is purposely designed to ensure compliance with the Animal By-Product Regulations (ABP) [3]. It should be noted that the aim of the ABP Regulation is to ensure that all meat and other products of animal origin which are processed by composting must meet the treatment standards[4] required, to ensure sufficient pathogen removal so that the treated compost may be safely applied to land in order to prevent animal diseases such as Foot and Mouth and Swine Fever that might arise from animal by-products (e.g., catering waste).

This industrial composting business plans to produce a Class 1 compost product (good quality compost - up to 20,000 t of compost produced) using waste material from a number of industries including sewage treatment, food and drink industry as well as source segregated food and garden waste. Additionally, municipal waste (up to 25,000 t treated) that has undergone mechanical treatment (MBT) may be biological treated to bio-stabilise the product to produce a bio-stabilized residual waste. This activity will be kept separate from the production of the Class 1 compost product by using separate composting bays, etc.

It should be noted that the licensee must meet the required standard for bio-stabilised residual waste as outlined in Schedule E of the RD, in particular, if they plan to dispose the material to a landfill. They also must have regard to any future guidance the Agency may issue in relation to compost and bio-stabilised standards-Condition 6.10.3.

[3] Animal By product Regulations ie Article 15 states that "biogas plants and composting plants shall be subject to approval by the competent authority", (the DAFF), the minimum requirements are specified in Annex VI, Chapter II Part A (and as outlined in greater detail in the DAFF 'draft' guidelines document- Conditions for approval and operation of composting plants treating animal by-products in Ireland

[4] Minimum temperature of 60^{o}C for 48 hours with a maximum particle size of 400mm-parameters must be met twice.

The 3.2 hectare site is divided into a large field area bordered by an existing willow plantation, naturally occurring hedgerows and boundary ditches. There are no buildings on the site, currently. The nearest resident lives over 300m away.

This recommended decision (RD) allows waste acceptance and handling between 8 a.m. and 7 p.m. Monday to Friday and between 8 am to 2 pm on Saturday.
The applicant applied for opening hours to be 8 am to 7 pm Monday to Friday and 8am to 2 pm on Saturday with the hours of acceptance to be between 8 am and 6 pm Monday to Friday and 8 am to 1 pm on Saturday. The hours of operation as proposed are reasonable even considering any potential nuisance that might be caused to the nearest receptor sites (dwelling houses).
There will be 3 full time operators at the facility. Management of the facility will be provided by an Environmental Technical Manager and an Operations Plant Manger and administrative support who will report back to the Managing Director who has a strong background in managing composting facilities in Ireland.

2. Operational Description

The Acorn Recycling facility is divided into two main sections, the primary processing (where composting takes place) and secondary processing area (material is composted until it is mature). These are further sub-divided into materials handling areas (waste intake area and where recycled material is stored) and composting areas. Operations are carried out in designated areas-see attached drawing No WL-03.

The composting section is essentially a separate building which will have roller shutter doors at the entrance of each compost bay. Twelve bays (12) will form the entire composting area in both primary and secondary areas. Air is pumped in to the composting bays (blown up through the bays) and is then drawn out from the composting bays and from the waste intake area to create a negative pressure in the building. The extracted air is then subjected to the biofiltration system in order to purify air emissions from the enclosed facility to ensure that odours that might arise are minimised.

Waste will enter the facility via a weigh bridge into a waste acceptance area within the enclosed building. Here waste can be tipped off without any risk of contaminating the final product or the environment. The materials handling section is where dry amendments, finished compost, wood chip and waste is mixed and where the front end loaders operate. A specialised waste acceptance area is located in the primary processing building. This allows high tipping trucks, tankers and other vehicles enter the building and tip off without disturbing the work happening in the processing area.

The waste acceptance area is self contained, has roller shutter doors, preventing any fugitive emissions and has its own air extraction system. An operator allows the unit to enter the building, closes the doors and directs the driver to tip off the material. Once that is completed, the operator ensures the wheels and axle are washed of any heavy debris prior to signalling the driver to move off. The design of the tipping area is such that waste is contained within a bunded area which is called a tipping trough which is a sloped area which controls and manages all of the water that comes from the waste in this area. All of this water is re-used in the composting process. The sloping floors are such that a loader can remove and mix the entire quantity from

different angles. The position of the waste acceptance area is beside the screening area in the adjacent secondary processing area, which means that finished compost or indeed recycled wood chip, can be conveyed into the area for mixing.

The closeness of these facilities and the isolation of the waste acceptance area ensures that all incoming waste is mixed and processed the same day. This ensures that minimum downtime is assured from the loader drivers perspective and that an efficient materials handling system is in place for finished compost and amendment.

The waste is converted into compost using a controlled static pile, forced aeration system. The mixing and composting takes place entirely within the sealed building.

The 12 composting bays (approximately 30m long) contain aeration channels that allow air to blow evenly through the compost pile. When the waste is mixed according to standard operating procedures the resulting admixture is at approximately 60% moisture. This is sufficient for high rate composting, creating relatively high temperatures within 12 hours of blending. The mixture is brought by the loader into the composting bays behind the primary processing area. It is loaded into the bays until the bay is full. Temperature probes are placed in the middle of the bay. These relay the temperature of the pile to a control panel located at the front of the building in the control room. When sufficient temperatures are reached for controlling pathogens, speed regulators on the fans adjust the air volume entering the bay according to the temperature within the bay. If the bay is getting very hot, for example, more air is added which cools the bay to the ideal temperature inputted. Once this is reached the air volume reduces again to prevent further cooling. This controls the process and allows the composting process to meet the required standards under the ABP regulations. It also allows the complete breakdown of material in the bay under highly controlled aerobic conditions. After the composting process is completed, the material is then transferred into another bay within the building for curing (i.e. the compost is left for at least 21 days) where it undergoes further but less intensive microbial break down. The 'mature' compost is then screened to remove any large material, e.g., woodchip which is added at the start of the process as a bulking agent. The composting process takes approximately 10 weeks to produce a Class 1 compost.

Once the compost is assessed for maturity indicators it is screened, the following occurs:

- Some compost is sent back over to the primary processing area
- Some compost is stockpiled in the recycled material storage area (within the building) to await transit from site
- The heavy "bulking agents" from the screening process are sent back to the primary processing area for mixing with incoming waste materials.

According to the applicant, significant progress in developing markets for the products abroad have been made and they have committed to key customers who require specific product blends for use in commercial horticulture and as a soil amendment.

3. Use of Resources

The facility has included details on raw material and energy consumption as follows: diesel fuel oil 21tonnes;

- ⇨ electricity usage: 657,000 KW per annum for aeration, extraction and electrical appliances for the proper functioning of the building.
- ⇨ water usage, approx 50 gallons will be used daily which will be taken from an existing well on the site.

4. Emissions

4.1 Air

Odour

The overall proposed odour mitigation techniques are based on sound engineering principles and proven design that were designed on foot of an odour impact assessment which the applicant commissioned. All such technologies are in operation for the management of odours at a number of facilities in Ireland. The overall incorporation of robust preventative maintenance procedures, containment measures, focused extraction, zoned ventilation, and treatment will ensure that odours will not cause impact on the surrounding area and that the odour control system will operate at optimal capacity. The implementation of odour management, minimisation and mitigation techniques and technologies will achieve the odour impact criterion when operating at optimal capacity.

Dust

The applicant has stated that once the facility is completed all air will be put through the biofiltration system which will ensure a low impact on the environment. Dust monitoring will be required as per Schedule C of the RD.

Bioaerosols

The composting of biodegradable waste involves a microbiological process where microbes (for example, bacteria and fungi) proliferate and grow by using the nutrients in the compost for food. High total viable cell counts (TVCC) are reached during the process and the microbial cells can be aerosolised (i.e. become airborne), particularly, during mechanical agitation of the composting material. This gives rise to the term 'bioaerosol'.

I wish to point out that at this facility the composting will be carried out indoors, also the air that will be extracted from the composting building will be biofiltered. Therefore, the risk to human health from bioaerosols is very low for persons outside the building.

The applicant carried out a comprehensive bioaerosols risk assessment and concluded that the proposed facility will not cause any bioaerosol impact (Aspergillus *fumigatus*, total fungi and total Mesophillic bacteria) as determined using worst-case bioaerosols emission rates and dispersion assessment.

The results of this monitoring will give an indication of the background levels of Aspergillus *fumigatus* which can then be compared to the results of the annual monitoring requirements of this fungus in accordance with Schedule C of the RD.

The Health and Safety Authority as a statutory body have been copied with the waste licence application and will be informed of the proposed decision and final decision. The HSA are the competent body for Biological Agents at Work legislation will be notified of the final decision in due course having regard to functions with regard to safety at work legislation, in particular in relation to bioaerosols that might have an impact on workers in the facility.

4.2 Emissions to Sewer

There are no emissions to sewer. Chemical toilets will be provided and waste will be collected for removal off site on a weekly basis.

4.3 Emissions to Surface Waters

Leachate from the composting process will be contained and re-used on site and therefore will have no impact on surface water. Rain and storm water falling on the hardstanding area and the facility roof will constitute clean runoff which will be discharged from the site directly to the local Ballyley River. It is proposed to install both an oil interceptor and silt trap as part of the storm water management system for the site. This will ensure that there is no contamination of either the river or the groundwater from mud carried in with vehicles or in the unlikely event of an oil leak.

Surface water quality will be analysed on a bi-annual basis.

4.4 Emissions to ground/groundwater

No direct emission to groundwater is allowed (Condition 5.2).

The site will be covered in impermeable hardstanding (Condition 3.4).

It is not envisaged that any run-off will enter the local groundwaters, however, groundwater monitoring will be carried out annually for specific indicator parameters as per Schedule C of the RD.

4.5 Wastes Generated

The applicant proposes to accept a total of 45,000 tonnes per annum to produce 20,000 t of compost and the remainder as bio-stabilized residual waste. The input material will be collected from the Midlands region and surrounding counties. The incoming materials accepted on site are non-hazardous industrial and sewage, biosolids, separated household and catering waste and other non-hazardous biodegradable materials and Municipal Solid Waste organic fines. No hazardous materials will be accepted on site.

Arrangements for off-site disposal or recovery

According to the applicant, the final product produced at this facility will be a compost of Class 1 quality that is stable, high in organic matter, pathogen free, and suitable for use as a soil improver. Alternatively the facility may accept mixed

municipal fines, in which case the stable product produced is known as bio-stabilised residual waste. This material is more biologically inert than untreated waste and therefore much of the problems associated with landfilling biodegradable waste are eliminated.

It should be noted that Condition 8.2 of the RD precludes the use of bio-stabilized residual waste on land. It must be disposed of by incineration or by landfilling in accordance with the DAFF 'draft' conditions for approval and operation of composting plants treating animal by-products (ABP) in Ireland. The land spreading of Class 1 and 2 compost must also be done in accordance with the aforementioned 'draft' ABP conditions and the Nitrates regulations (S.I. 378 of 2006).

4.6 Noise

According to the applicant, the proposed development will result in daytime average noise levels increasing. This increase will be caused by increased traffic volumes and general noise from the facility itself. Because the nearest sensitive noise location is over 250m from the facility and the fact that all the on-site activities will be carried out within the facility building, however, it is not envisaged that noise levels will exceed recommended WHO values where they do not already.

The RD sets noise limits of 55/45 dB(A) during daytime/night-time as per Schedule B, measured at the noise sensitive locations in accordance with Figure WL-05 of the licence application. Condition 6.25 requires an annual noise survey to be undertaken.

4.7 Nuisance

Litter
Litter is not an issue on site as the waste is delivered on site in enclosed or covered refuse trucks. As a completely enclosed facility, the proposed development is unlikely to experience a significant Litter problem around the site. The collecting of litter will be carried out as deemed necessary as part of regular site maintenance duties.

Dust
All activities take place indoors at the facility. There is no loading or unloading of materials outdoors. In my opinion dust will not be a problem at this facility.

Vermin
As an enclosed facility, the proposed development is unlikely to have a significant vermin problem. However, pest control will be carried out at the facility to ensure there are no issues with vermin.

Flies, birds, pests
As waste is unloaded and mixed in the materials reception building the facility is not likely to result in an increase in birds and flies.
Potential nuisances from the facility are controlled by Condition 5.6 of the RD.

5. Restoration

The decommissioning and restoration of the site is not expected to occur in the near future. Standard conditions regarding closure of the facility have been included in Condition 10 of the RD.

6. Cultural Heritage, Habitats & Protected Species

According to the applicant, the proposed development is not likely to have any significant impacts on the archaeological, architectural, cultural Heritage, or other material assets at Ballybeg or the surrounding area.

7. Waste Management, Air Quality and Water Quality Management Plans

The National Strategy on Biodegradable Waste sets out measures to progressively divert biodegradable municipal waste from landfill in accordance with the targets in EU Directive 1999/31/EC on the landfill of waste. Article 5 of the Directive specifically requires each Member State to prepare a National Strategy on Biodegradable Waste which will set out measures aimed at the separate collection, recovery and recycling of biodegradable waste. The Directive also sets out targets in relation to the progressive diversion of biodegradable municipal waste from landfill. The Government policy also called for the development of waste recovery facilities employing environmentally beneficial technologies, as an alternative to landfill, including the development of composting and other feasible biological treatment facilities capable of treating up to 300,000 tonnes of biodegradable waste per annum to meet the required targets.

The Waste Management Plan for the Midlands Region 2005 – 2010 sets the policy objective to 'Support the development of biological treatment facilities in the region that can be shown to be consistent with the overall objectives of the plan and have regard to principles of good siting'.

It is for the reason that the applicant is proposing to build this facility to treat 45,000 tpa.

8. Best Available Techniques (BAT)

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Decision comply with the requirements and principles of BAT. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard - as may be relevant - to the way the facility is located, designed, built, managed, maintained, operated and decommissioned.

9. Compliance with Directives/Regulations

The proposed operation is compliant with all relevant EU waste and environmental laws. The facility does not come within the scope of the IPPC Directive. There are no discharges to water so the proposal is not an issue from the perspective of the Water

Framework Directive. The company has stated that it will also require approval from the DAFF under the ABP legislation for the composting of 'brown' and 'black' bin waste.

10. Fit & Proper Person Assessment

The legal, technical and financial standing of the applicant qualifies them to be considered Fit and Proper Persons.

11. Proposed Decision

It is my opinion that the technology proposed for this composting facility is appropriate and the risk to the general public from nuisances like odour will be extremely low due to the fact that the composting process in carried out under controlled conditions, in particular:

- process is carried out indoors
- provision of oxygen to ensure aerobic conditions
- temperature control by aeration
- use of negative pressure in the building
- use of biofiltration.

In my opinion all the information provided above confirm the appropriate measures for the proper control of such composting facilities will be used, in particular to control any potential odours which can be problematic to persons living in the vicinity of such facilities. Good management of this facility is also of paramount importance. Itshould be noted that Condition No 2 of the RD sets the requirements for good management of the facility.

I confirm that I am satisfied that the conditions set out in the RD will adequately address all emissions from the facility and will ensure that the carrying on of the activities in accordance with the conditions will not cause environmental pollution.

12. Submissions

To date one submission was made in relation to this application, from the DEHLG, regarding nature conservation and the following points were made:

This site is located approximately 20km upstream of the Lower River Suir cSAC. The DEHLG note that because of the distance from the cSAC and the fact that the operation will be contained within a building and that it is not proposed to release any effluent from the site the development is considered unlikely to have any impact on the cSAC.

The accompanying EIS contains an incorrect statement, it states that frogs and tadpoles are not protected under the Wildlife Acts. This is incorrect. Statutory Instrument 282 of 1980 brings this species under the protection of the Wildlife Acts. A licence is therefore required to disturb this species or its resting/breeding places.

Response:
I am in agreement with the first part of the DEHLG submission that the risk from this proposed waste facility to this cSAC is very low. I am also in agreement that frogs and

tadpoles are indeed protected by the Wildlife Acts. A copy of this submission was sent to the applicant which pointed out the correction in the EIS.

13. Charges

The RD requires that the applicant shall pay an annual contribution of €7,594 (Condition 12.1.1).

14. Recommendation

I have considered all the documentation including an EIS submitted in relation to this application and recommend that the Agency grant a licence subject to the conditions set out in the attached RD and for the reasons as drafted.

Signed

Dr Thomas McLoughlin

Senior Inspector

Procedural Note

In the event that no objections are received to the Proposed Decision on the application, a licence will be granted in accordance with Section 43(1) of the Waste Management Acts 1996-2007.