

ATTACHMENT A

Non-Technical Summary

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WASTE LICENCE APPLICATION
NON-TECHNICAL SUMMARY
GREEN WASTE COMPOSTING FACILITY AT
COOLBEG
CO. WICKLOW

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Prepared For: -

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1 NON-TECHNICAL SUMMARY

Kings Tree Services Ltd (KTS) is applying to the Environmental Protection Agency (EPA) for a Waste Licence to operate a Green Waste Composting Facility at Coolbeg, Co. Wicklow.

The application for a Waste Licence is in accordance with the requirements of the Waste Management Acts, 1996 to 2003. This non-technical summary contains the information specified in Article 12 (1) (u) of the Waste Management (Licensing) Regulations, 2004 (S.I. No. 395 of 2004).

Compliance with Requirements of the Waste Management Act 1996 to 2003

It is the objective of KTS to manage the site to ensure that all waste composting operations are carried out in a safe and environmentally sound manner, such that: -

Emissions from on-site composting activities will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under the Waste Licence and any other enactment.

Best Available Techniques (BAT) will be used to prevent/eliminate or, where this may be deemed not practicable, limit/abate/reduce emissions of environmental concern resulting from on-site recovery activities.

The baseline environmental assessment and monitoring programme conducted by KTS has confirmed that the site is of generally good environmental quality. KTS will operate the facility so that emissions from the facility will not contravene any waste licence conditions or any relevant standard or emission limit value prescribed under any other enactment. KTS is committed to implementing BAT in the on-going operation of the facility. The facility operations, when carried out in a proper manner and in accordance with license conditions, will not cause environmental pollution.

KTS will employ technically competent staff to operate the facility and has the financial resources to meet any financial commitments arising from carrying on the activity. KTS has not been prosecuted for, or convicted of any breach of the Waste Management Acts 1996 to 2004.

Nature of the Facility

The proposed development involves the construction of a green waste composting facility at a worked out sand and gravel quarry in the townland of Coolbeg, County Wicklow. The green waste will comprise wood wastes generated by the KTS tree surgery business, garden and park waste produced during improvement and maintenance works by landscape gardeners, grass and shrub trimmings produced by individual householders and timber and wood waste recovered during construction and demolition works.

The composting operation will involve pre-treatment to shred and mix the green waste, composting in open windrows, maturation and post treatment to remove impurities. The finished product will be suitable for horticultural and agricultural use. When fully operational the facility will accept approximately 40,000 tonnes of green waste annually and produce approximately 25,000 tonnes of compost. In the start-up phase it is envisaged that there will be an annual throughput of 4,500 tonnes of green waste.

The proposed normal operational hours are 06.00 to 20.00 Monday to Friday and 06.00 to 18.00 on Saturday. The facility will not normally open on Sundays. However, due to the nature of the tree surgery business it may, on occasion, be necessary to operate outside these hours for example to accommodate call outs to remove storm damaged trees and timber debris. Waste will normally be accepted at the facility between the hours of 08.00 and 18.00.

Classes of Activity

The relevant activities as per the Third and Fourth Schedules of the Waste Management Acts 1996 – 2003 will be as follows: -

Fourth Schedule – Waste Recovery Activities

Principal Activity:

- 2: ‘Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological processes)’.

Green waste (wood, timber, hedge trimmings and grass) will be composted on-site using a windrow system.

Other Activities:

- 13: ‘Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced’.

Storage of wastes prior to submission to off-site treatment or final disposal facilities will be necessary at the site.

Quantity and Nature of the Waste to be Recovered or Disposed

The facility will accept only the waste types set out in Table H.1 of the application form. A maximum of 40,000 tonnes per annum will be handled on-site. It is not possible at this time to predict the volumes of waste that will be accepted annually between Year 1 and 5 but it is anticipated that by Year 5 the waste inputs will have grown to a maximum of 40,000 tonnes of waste per annum and the facility will produce approximately 25,000 tonnes of compost annually.

The projected 5 year growth rate is based on the KTS experience of the volumes of green waste generated in its catchment area in recent years, but actual growth rates will depend on market conditions. Total waste inputs for Year 1 and Year 5 are shown on Table 1.1.

Table 1.1 Total Waste Inputs*

Waste Type	EW Code	Year 1	Year 5
Waste from agriculture, horticulture, forestry... (plant tissue waste, waste from forestry)	02-01-03 02-01-07	3,600	32,000
Garden & Park Waste (biodegradable waste)	20-02-01	630	5,600
Waste from Wood Processing (waste bark)	03-01-01	45	400
Construction and Demolition Waste (Wood)	17-02-01	225	2,000
Total		4,500	40,000

*Subject to market conditions

Raw and Ancillary Materials, Substances, Preparations, Fuels & Energy used on the Site

Raw materials and energy to be used on-site include: -

- Diesel for on-site plant equipment,
- Hydraulic oil and engine oil for use in on-site equipment,
- Electricity,
- Water.

The proposed composting process is not considered energy intensive.

Plant, Methods, Processes, Abatement, Recovery, Treatment and Operating Procedures

The plant that will be used at the facility on a regular basis includes: - 1 No. Front Loading Shovel, 1 No. Mobile Wood Chipper/Shredder, 1 No. Hydraulic Excavator and 1 No. Mobile Trommel.

Green wastes delivered to the facility will be subject to waste acceptance procedures to ensure that only suitable wastes are accepted. Initially, the majority of the waste will be generated by KTS and delivered to the facility either by KTS employees, or hauliers employed by KTS. This will minimise the risk of the delivery of unsuitable material. KTS has received Waste Collection Permits from Wicklow County Council and Dublin City Council.

Where green wastes are delivered by third party commercial entities (e.g. landscape gardeners, waste contractors) the producer/holder/collector of the waste must, if requested, provide documentation that the waste meets KTS specifications. Waste not conforming to the specification will not be accepted at the site. KTS will also prepare and advertise details of wastes that will be accepted from individual householders.

Composting Process

Waste Reception

Green waste accepted at the facility may contain a small percentage of contaminants, e.g. glass, metal and plastic. Large items will be removed from the waste manually and placed in a container for subsequent removal to a licensed landfill or if the material is suitable for recovery to a permitted recovery/recycling facility.

Proper mixing of the material is important to allow for both a proper composting process and the production of compost with a consistent quality. As a rule of thumb the mixture should have a dry solids content of at least 30 - 40%. In addition some green waste streams may contain relatively high or low concentrations of certain elements, e.g. nitrogen, sulphur. To prevent process disturbances (e.g. high C/N ratio), excessive emissions (e.g. ammonia, H₂S) and bad quality compost, proper mixing is essential. To achieve proper mixing certain waste streams (e.g. branches, timber, stumps) will be chipped/shredded.

Windrow

The green waste will be placed on the ground at the front of the windrow using an industrial front-end loader. In the early stages of the process the windrow will be turned two to three times a week using a hydraulic excavator. Subsequently, the turning frequency will be reduced. The excavator will work through the composting section from the back-end to the front-end: it starts by removing the mature compost (at the back-end) to the compost refinement area, and subsequently move (turn) the material along the windrow. Once it has turned the whole composting section, the area at the front-end will be empty and ready for the intake of fresh green waste. It is envisaged that the composting cycle will be 8 - 12 weeks.

The mechanical turning loosens and homogenises the composting material, while at the same time water can be added (if necessary) to further enhance the process. As the waste inputs increase over time the excavator may be replaced by a specialised windrow turner.

Initially approximately 400 tonnes of material will be present in the windrow in any given week, which will increase to a maximum capacity of approximately 7700 tonnes. The industrial front end loader and the hydraulic excavator will both be capable of operating at a rate of 75 - 100 tonnes/hr which equates to approximately 5 operational hours/week for each item of plant in the initial phase.

During the composting process, the material will be dried to approximately 60 - 70% dry solids and the quantity of finished product compost will be approximately 60% of the green waste input (approximately 25,000 tonnes at full capacity). The height of each windrow will be kept constant over the total composting period, so that the area occupied by a charge of green waste decreases as the composting period advances.

Screening & Maturation

Following the composting process, the material will be transferred to the maturation area using the front loading shovel, where it will be screened to remove impurities. The equipment used will comprise a mobile hopper/trommel system, with adjustable sieving plates in the trommel.

The compost will initially be screened over a diameter between 15 and 25 mm. The material retained in the trommel will be conveyed to a container and either returned to the composting cycle, or if it contains mainly non-biodegradable impurities, transported off-site to an appropriately licensed landfill. The compost will remain in the maturation area for a period of approximately 8 weeks to allow for proper maturation, following which it will be moved to the finished product storage area.

Finished Product Storage

The finished product will be stored on-site in the dedicated product storage area. This is designed to accommodate seasonal fluctuations in demand. The product will be loaded onto trucks for removal off-site to its final destination/end market. In the initial phase it is estimated that approximately 10 tonnes of finished product will be produced daily and one truck will be loaded with compost on average every 2 days. At the projected maximum annual production of 25,000 tonnes of finished product at a maximum of 100 tonnes/day, 5 trucks will be loaded with compost every day.

Process Control

Primary process control will be achieved by temperature sensors placed at different locations and depths in each windrow. These will be monitored on a daily basis by KTS personnel to ensure that optimum temperatures are maintained.

The windrows will also be visually inspected on a daily basis to confirm the moisture level is in the optimum range. Leachate/contaminated run-off from the on-site leachate storage lagoon will be added to the windrow as required to maintain optimum moisture conditions.

Information Related to Section 40(4) (a) to (d) of the Waste Management Act

Details of the emissions from the proposed extension are presented in Section 6 of the Project Description which accompanies this application. The emissions will not result in the contravention of any relevant standard or emission limit prescribed under enactment. The proposed development is consistent with the County Wicklow Waste Management Plan 2000-2004.

The proposed site activities are based on best management practice and take into consideration the BAT Guidance Note for the Waste Sector: Waste Transfer Activities published by the EPA. The facility operations when carried out in accordance with licence conditions, will not cause environmental pollution.

The facility manager and deputy will complete the FAS Waste Management Training Programme, or equivalent agreed with the Agency, prior to the start of waste acceptance.

Energy will be used efficiently in the carrying out of proposed activities although the proposed composting process is not energy intensive. Necessary measures will be taken to ensure limited consequences for the environment from accidents or the permanent cessation of activities at the site.

Source, Location, Nature, Composition, Quantity, Level and Rate of Emissions

Surface Water / Groundwater

Clean surface water from roofs, non-process areas and the access road will be collected and directed to soakaways. Run-off from paved areas of the site used for vehicle parking will be directed to an oil-water separator, with the outfall connected to a separate soakaway.

The facility is designed to ensure the separation of areas which have the potential to generate contaminated run-off/leachate and areas where this will not occur. An external perimeter kerb will be provided around the process and materials storage areas to prevent the entry of run-off from off-site upgradient areas and to contain contaminated run-off/leachate within the process/storage areas.

Leachate

To avoid the contamination of surface water, soil and groundwater leachate and contaminated surface run-off from all areas where green waste will be handled and processed and the finished product storage areas will be collected and stored in an on-site lined leachate storage lagoon. Some of the liquid stored in the lagoon will be added to the windrows to maintain the optimum moisture content. Surplus liquid will be removed off-site and treated in an off-site local authority municipal wastewater treatment plant.

The leachate storage lagoon has a capacity of 1250 m³ and is designed to accommodate leachate/contaminated run-off when the facility is operating at maximum capacity.

Dust & Bioaerosols

The moisture content of the material during all stages of the composting process including maturation and post composting screening will prevent the generation of dusts however there is the potential for dusts generation during the pre-treatment (shredding) stage.

The finished product will have a relatively high moisture content that will minimise the potential for dust emissions during the screening process and wind blow from the finished product stockpiles. The site access road will initially be constructed of hardcore fill, vehicle manoeuvring and parking areas will all be paved.

Bioaerosols (airborne microorganisms typically <5 um in diameter) present a potential health impact at composting facilities. A recent study conducted by Cre (the Composting Association of Ireland) concluded that, based on a review of international literature that the general population is not at risk and that there is no clear cut evidence that either the public or workers at composting facilities have been affected by bioaerosols.

The production of bioaerosols can effectively be minimised by managing the windrows to attain higher temperatures and reduce temperature gradients. KTS will as a matter of course in the production of a Class 1 or Class II compost manage the windrows to ensure optimum operating conditions which will minimise the potential for bioaerosols generation.

Odours

The waste that will be accepted and processed at the site will comprise 'fresh' green waste and timber only, which is not malodorous. Food bearing waste or sludges will not be accepted at the facility. The proposed waste acceptance procedures (Ref. Section 5.6) will ensure that any malodorous or unsuitable waste delivered to the facility will not be processed, but removed off-site as soon as practical.

While the finished product has a characteristic odour, this is not offensive and odours from the maturation and finished product storage typically do not cause odour problems. Leachate can cause odours if it becomes anaerobic. During the summer surplus leachate will generally not be generated, as it will be applied to the windrows to maintain optimum moisture content. In periods when surplus leachate is generated this will be removed at regular intervals in fully enclosed road vacuum tankers.

The location of the composting area and leachate storage lagoon is remote (>200 m) from any sensitive receptors such as the nearest occupied residences. Facility personnel will conduct daily odour surveys along the site perimeter. In the unlikely event that odours from the operations present a nuisance abatement measures will be applied. Such measures may include covering the windrows with a layer of finished product and the use of odour neutralising or masking agents.

Noise

The pre-treatment and post treatment screening stages are potential significant sources of noise. To minimise impacts pre-treatment shredding and post treatment screening will be carried out on average 1 to 2 days a week.

The waste reception area is designed to accommodate up to 5 days storage of fresh green waste at maximum capacity and the shredder will be of sufficient capacity to ensure that all of the stored material will be shredded in the 1-2 day period. Similarly, the screening plant will be of adequate size to ensure that the treatment is limited to 1 to 2 days a week.

Assessment of the Effects of Emissions on the Environment

Groundwater / Surface water

The development and operation of the facility will not result in any emission to surface waters, but will result in a reduction in the volume of rainfall infiltrating to the ground and flowing through the shallow subsurface. However, it is considered in the context of the site hydrogeological conditions that the impact will be imperceptible.

Fuel and lubricating oils will be stored in appropriately sized and constructed contained storage areas. Adequate spill containment and clean-up materials will be maintained on-site and facility personnel will receive instruction in its proper use and disposal.

Leachate

The facility design incorporates measures to ensure that the risk of the uncontrolled release of leachate is minimised. Facility personnel will be provided with the appropriate equipment and training to respond rapidly and effectively to any incidents that have the potential to impact on groundwater quality. It is therefore considered that further mitigation measures are required.

Dust & Bioaerosols

Dust control measures that may be employed include the provision of dust suppression systems on the shredder, controlling the moisture content of the composting materials to prevent them from drying out and regular cleaning of the site.

The production of bioaerosols can effectively be minimised by managing the windrows to attain higher temperatures and reduce temperature gradients. KTS will as a matter of course in the production of a Class 1 or Class II compost manage the windrows to ensure optimum operating conditions which will minimise the potential for bioaerosols generation.

Odours

The location of the composting area and leachate storage lagoon is remote (>200 m) from any sensitive receptors such as the nearest occupied residences.

Noise

The loading and screening equipment will not be operated at night time. The predicted levels at the noise sensitive locations are all significantly below the Daytime and Night time criteria set in Waste Licences and will not result in any adverse impact at the noise sensitive locations.

Monitoring and Sampling Points

Dust

Dust will be monitored at three locations on the property boundary biannually. The measurements will be carried out using Bergerhoff gauges specified in the German Engineering Institute VDI 2119 document entitled "Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method).

Noise

Noise will be monitored at three locations on the site boundary and at one noise sensitive location annually. The monitoring will be representative of daytime 30-minute L(A)eq and will be carried out in accordance with the ISO1996: Acoustics - Description and Measurement of Environmental Noise.

Odour

KTS will conduct and record the findings of daily odour patrols around the site perimeter to identify any nuisance odours.

Surface Water

KTS will conduct monitoring of the discharges from the oil interceptor to soakways.

Prevention and Recovery of Waste

Waste oils generated during plant and vehicle maintenance will be collected and sent off-site for recycling.

Off-site Treatment or Disposal of Solid or Liquid Wastes

Surplus leachate and contaminated run-off will be removed off-site for treatment at a local authority municipal wastewater treatment plant. It is not proposed to provide any on-site treatment.

Emergency Procedures to Prevent Unexpected Emissions

KTS will prepare an Emergency Response Procedure for the facility that addresses all contingencies that might arise including fire, uncontrolled release of leachate and/or oil, facility closure failure and major injury. The procedure will ensure a rapid response to any incident by trained staff and minimise the impact on the environment of any associated emissions.

Closure, Restoration and Aftercare of the Site

The majority of the site will be either paved or occupied by buildings with minor landscape works at the site boundary. It is not anticipated that the waste processing activities will cease in the medium to long term. In the unlikely event that the facility shuts down it will be decommissioned in accordance with the Decommissioning Plan in Attachment K. Post closure measures for the monitoring and maintenance of the building and the restored areas will be agreed with the Agency.