DECOMMISSIONING MANAGEMENT PLAN

AES TULLAMORE

MATERIAL RECOVERY FACILITY

CAPPANCUR,
TULLAMORE,
COUNTY OFFALY

MAY 2017

TABLE OF CONTENTS

PAGE

1. INTRODUCTION

Advanced Environmental Solutions (Ireland) Ltd. (AES) are one of Ireland's largest waste management and recycling companies. It is part of the Bord na Móna group and operates waste management facilities at Lusk, Navan, Tullamore, Portlaoise, Nenagh and Rosslare.

The facility is located in the west of the Cappancur Industrial Estate approximately 2 km east of Tullamore Town. It covers 1.16 hectares (ha) and is occupied by a Weighbridge, Process Building, Office, Welfare Building, Wheel Wash and paved open yards. The Tullamore-Daingean Road runs along the northern site boundary and the County Council Dog Pound is directly south. The lands to the north and south are in agricultural use. To the west is the N52 National Secondary Route. The closest private house is approximately 125m to the north-west.

The operational hours are 6am to midnight Monday to Saturday and 7am to 11pm on Sundays. The facility accepts residual household (black bin) waste, construction and demolition waste and mixed dry recyclable materials (paper, cardboard, plastic etc.). All the wastes are handled inside the Process Building and baled dry recyclables are stored in the open yard before being sent to recycling facilities. The annual waste acceptance rate for the facility is 60,000 tonnes and the current Waste Licence (W0104-03) was issued in February 2014. In December 2015, the EPA amended the Licence to bring it into conformity with the requirements of the EU Industrial Emissions Directive.

1.1 Closure and Restoration/Aftercare Plan

The overall purpose of a closure and restoration/aftercare plan is to ensure that measures are implemented to avoid any risk of environmental pollution and, where pollution has been caused, to return the site to a satisfactory state.

There are three steps to completing closure and restoration/aftercare plans:

- Step 1: Scoping
- Step 2: Closure
- Step 3: Restoration/aftercare

The requirements for closure and restoration/aftercare vary between sites and hence it is necessary to scope each closure plan. In addition, it is necessary to decide if restoration/aftercare is required and, if so, to scope the restoration/aftercare requirements.

A costed plan for the decommissioning/closure of the site and a scope statement for implementation are included in this report. In the unlikely event of the activation of this plan a final validation report including a certificate of completion will be furnished to the Agency no less than 3 months from the date of execution of the closure plan.

Condition 10.1 of the waste licence W0104-03 addresses closure, restoration and aftercare. The condition states that:

> "*Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.*

Based on the activities on site and Condition 10.1 of the facility waste licence, the scope of the facility closure plan relates to the relatively short-term measures necessary to close the site satisfactorily including decommissioning and residuals management. It is not envisaged that there will be any environmental liabilities once closure, decommissioning and residuals management are completed. In the event of any residual contamination being identified during closure, its management is likely to be relatively minor in scale and duration and will not require complex or long term measures.

Thus, it is considered that a closure plan only is required.

1.2 Closure Scenarios

The facility has no defined lifetime and the risk of closure is low. The commercial viability of the facility will be kept under review and, if market conditions dictate the need to close the facility, the Agency will be notified and the DMP will be implemented. Following a planned closure AES may, depending on the future plans for the facility, apply to surrender the Licence.

Contained within this closure plan are details on how AES plan to decommission, render safe, remove or dispose of any soil, subsoil, building, plant and equipment, waste materials, waste substances or other matter contained therein, or thereon, that has the potential for environmental degradation.

The aim of this Report is to assign the correct decommissioning category applicable to the facility, and allocate correct financial provisions so the site can be decommissioned correctly in the event of unforeseen site closure.

In the unlikely event of closure the facility closure plan will be implemented. This closure plan will be reviewed and updated as per the requirements of the Agency. The updated plan will take into account any site process changes, technology changes and/or costing changes. Updates will be included as part of the relevant AER and submitted to the EPA for approval.

For the purpose of costing the DMP, it has been assumed, in accordance with the Agency's Guidance, that the plant will close unexpectedly and that the DMP will be implemented by third parties contracted by the Agency.

1.3 Site History

The Tullamore MRF is located in the Cappancur Industrial Estate approximately 2 km east of Tullamore Town. It covers 1.16 hectares (ha) and is occupied by a Weighbridge, Process Building, Office, Welfare Building, Wheel Wash and paved open yards.

The site was initially developed as a waste management facility in 1994. In 2002 AES acquired the site following which improvement works were carried out. In 2004, the first Waste Licence was granted by the Environmental Protection Agency (EPA). In 2009 a revised Waste Licence was granted for changes

to the boundary and the upgrade of the drainage and wastewater treatment system, and these works were carried out in 2012.

In 2013 planning permission was granted for an increase in the annual waste acceptance rate to 60,000 tonnes and the current Waste Licence (W0104-03) was issued in February 2014. In December 2015, the EPA amended the Licence to bring it into conformity with the requirements of the EU Industrial Emissions Directive.

2. SITE EVALUATION

2.1 Operator Performance

2.1.1 Facility Management

The Licensee holds a NSAI accredited Integrated Management System incorporating Environmental (ISO 14001:2004), Health & Safety (OHSAS 18001:2007) and Quality (ISO9001:2008). These management systems are maintained by the environmental officers and dedicated systems coordinators. They are audited on a bi-annual basis internally and externally on an annual basis.

The key elements of the EMS comprise identifying environmental aspects associated with site activities; the determination of suitable operational controls (engineering and administrative); the identification of pertinent legal requirements; definition and implementation of objectives and targets; ongoing monitoring of performance and compliance; and management review of performance on a periodic basis. Emergency planning and good internal stakeholder structures are also features of the system.

The General Manager has overall responsibility for environmental management at the facility, with designated responsibilities for performance and compliance support assigned to the Environmental Officer.

2.2 Environmental Pathways & Sensitivities

2.2.1 Surface Water

The facility is in the catchment of the Tullamore River, which is a tributary of the River Brosna. Rain water from the site passes through an oil interceptor and discharges to a man-made drain at the southern site boundary that joins the Tullamore River approximately 750 m to the south of the site.

2.2.2 Geology & Hydrogeology

The site is entirely covered by buildings and concrete paving which effectively prevents groundwater recharge. The direction of groundwater flow is to the south-west, towards the Tullamore River. The subsoils in the locality are glacial tills that are more than 9m thick. The underlying bedrock is a dark limestone and shale.

The bedrock beneath the site is classified as a Locally Important Aquifer (Lm), being generally moderately productive. The aquifer vulnerability to pollution from sources at the ground surface is Moderate.

2.2.3 Surrounding Land Use

County Offaly predominantly comprises a flat landscape, typified by extensive peatlands. The Slieve Bloom Mountains in the south-west of the county is the only substantial upland area.

The Shannon River in the west forms a landscape of local, national and international importance. The Grand Canal forms the 'Grand Canal Corridor' which has the potential to increase tourism in the area and to add to the aesthetic value and recreational appeal of the landscape.

The facility is in an area classed as being of Low Sensitivity, which largely encompasses the county's main urban and farming areas. The 'Grand Canal Corridor', which is classed as being of High Sensitivity, is approximately 350m to the north.

The site is a relatively moderately scaled waste management facility and has an industrial appearance. It is visible from the Tullamore-Daingean Road frontage, but the other buildings in the Cappancur Estate screen it from view from further east along the road. It is visible from approaches to the Cappancur Roundabout and from the access road to the Dog Pound.

There are no habitats of ecological importance within the site boundary and the site is not in or close to a Special Area of Conservation (SAC), Special Protected Areas (SPA) or National Heritage Areas (NHA). The closest protected area is the Charleville Wood SAC, which is 3 km south-west of the site. The Tullamore River is a tributary of the River Brosna that flows through Charleville Wood.

2.3 Site Processes & Activities

2.3.1 Waste Types & Volumes

The facility accepts 60,000 tonnes per annum of residual household (black bin) waste, construction and demolition waste and mixed dry recyclable materials (paper, cardboard, plastic etc). All the wastes are handled inside the Process Building and baled dry recyclables are stored in the open yard before being sent to recycling facilities.

Table 2-1 shows the annual quantity of waste material received at the facility between 2012 and 2016.

Year	Waste Intake (tonnes)
2016	58,518.81
2015	58,941.84
2014	59,163.39
2013	57,814.06
2012	59,923.66

Table 2-1 – Waste Intake (tonnes) 2012-2016

2.3.2 Waste Processes

Waste vehicles access the facility through the access gate off the local Daingean Road via the N52 bypass. After entering through the access gate, waste delivery vehicles travel along the internal northern boundary and turn south onto the facility weighbridge, prior to travelling to the southern side of the waste reception and processing building where the entrance doors are located. 2 doors on the southern side of the waste reception and processing building allow for vehicle entry. A third entrance door, located on the northern side of the building, facilitates entry of skip trucks & RCVs, primarily for the deposit and collection of C&D and residual MSW.

Car parking is provided adjacent to the administration building and is cordoned off with individual car parking spaces identified. A skip storage area is located directly adjacent to the car parking area which is separated from the access road by a locked palisade fence. Access to the skip storage area is via the eastern side of the waste building.

A bunded road diesel tank is located along the southern side of the processing building to facilitate vehicle refuelling and further outdoor skip storage is provided in this location. Storage of baled recyclable materials, prior to transportation offsite, is facilitated to the rear of the waste reception and processing building and in the south-eastern corner of the facility.

A covered loading bay at the south-western corner of the waste reception and processing building allows for the loading of trailers with baled recyclable material.

Effluent generated from the office accommodation flows via foul line, running from the site offices and canteens to an onsite MBBR tank situated in the north-eastern corner of the site. Partially treated foul water is pumped to a twin chamber effluent storage tank located along the eastern flank of the processing building, prior to transportation offsite for appropriate treatment.

Similarly, trade effluent within the processing building is collected in an effluent sump and pumped to the trade effluent collection side of the twin chambered effluent storage tank. Both waste water streams are pumped out as required and tankered by road to an appropriately licenced waste water treatment facility.

Surface waters generated on hardstanding areas and building roofs are collected via gullies before passing through an oil interceptor prior to discharge to a stream located at the south-eastern boundary of the site. The stream joins the Tullamore River, which is approximately 750m south of the site.

The unit processes undertaken within the facility building are described as follows:

Waste is unloaded in one of two locations, depending on its nature. Dry Mixed Recyclable waste (DMR) is unloaded in the south-western corner of the Processing Building where it is spread out using a grab machine. The waste is visually inspected and any non-acceptable waste materials are removed and placed in the Quarantine Area before being taken off site. Bulky wastes, construction and demolition waste and mixed municipal waste is unloaded in the north-eastern section of the Processing Building, spread out using an excavator and visually inspected. Recoverable/recyclable material is segregated out and the residual non-recyclable material is sent off site for further treatment at an appropriately licenced waste processing facility (within the AES group).

Kerbside collected dry recyclable material, including newspapers, aluminium cans, plastics, magazines, steel cans, cardboard packaging and Tetra-paks are deposited on the floor of the Processing Building and loaded onto a conveyor that feeds a manual picking line installed at an elevated height. Operatives remove recoverable/recyclable material from the waste stream as it passes along a horizontal belt and puts them into individual chutes so that paper, card and plastics are segregated.

After passing through the picking line, the remaining materials pass through a magnetic separator and eddy current separator to recover both ferrous and non-ferrous metals.

Recyclable materials such as paper, cardboard, plastics and metals are baled and temporarily stored pending consignment from the facility.

The non-recyclable processed waste goes for final disposal at approved facilities, the recyclables go for further processing through approved intermediates. Records are maintained of all wastes transferred from the facility.

2.3.3 Emissions

Emissions to Air
The potential emissions to air from the operation of the facility are dust and odour.

Dust
Dust monitoring has been carried out three times annually since the licence was issued. The results show that the facility is not a significant source of dust and in general the dust deposition limit is not exceeded. There have been exceedances of the dust deposition limits, but off site sources, including bird faeces depositing into the dust jars, were probable contributing sources.

Odour
The occurrence of odour nuisances have not been observed at the facility. This will be maintained by ensuring that biodegradable waste is transferred off site within 48 of arriving on site and that good housekeeping practices are ongoing. The effectiveness of the odour control techniques applied at the facility is demonstrated by the lack of odour complaints, which is the yardstick against which odour nuisance at a waste management facility is measured. In the past five years the facility has not received any complaints from neighbours concerning odours. Furthermore, compliance inspections conducted by the EPA have never identified any concerns that odours could give rise to any nuisance or impairment outside the facility boundaries. The EPA has not required the installation of an odour control system. The current activities are not a source of odour nuisance and the proposed development does not involve taking in any new potentially odorous waste types.

Noise
The sources of noise emissions are the staff vehicles, waste transport vehicles, the mobile plant (forklifts, grabs), the sorting line, the generator for the compressors, the baler, and the wheel wash unit. Noise emissions only occur during the waste acceptance and operational periods. At other times the site is not a source of noise.

The EPA Licence sets daytime (55 dB L_{ArT}), evening (50 dB L_{ArT}) and night time (45dBL_{ArT}) emission limits and requires an annual noise survey to be carried out at five (5) locations.

N1 is the north-west corner of the facility, beside the main entrance and main road; N2 is in the north-east corner, also beside the main road; N3 is in the south-east of the site at the rear of the Process Building and N4 is in the south west of the facility, beside skip storage area. Monitoring is also carried out at one noise sensitive location (NSL) which is a private dwelling attached to a petrol station on the opposite side of the main road approximately 300m north-west of the site.

In 2016 the day-time site boundary LAeq levels ranged between 59 dB (A) to 67 dB (A), all of which exceeded the daytime ELV (55 dB (A); however the exceedance was due to the heavy off-site road traffic and not site operations. The day-time LAeq levels at the NSL were 63-67dB (A) and were also attributed to road traffic. Tonal noise was not detected at any of the site boundary monitoring locations.

Complaints about noise from waste recovery facilities are not uncommon. AES has a documented complaints procedure to ensure that all complaints received from neighbours and the general public are fully investigated and addressed. In 2016, no complaints were received.

The current operations are not a source of noise nuisance at off-site noise sensitive locations. The proposed development will not require the provision of any new plant and equipment and will not result in any new or additional noise emission sources.

Process Wastewater
Process wastewater generated at the facility consists small amounts of liquid present in the incoming wastes. Some of the incoming wastes (for example mixed municipal solid wastes) can contain small quantities of liquid. Process wastewater within the processing building is collected in an effluent sump and pumped to the trade effluent collection side of the twin chambered effluent storage tank. This waste water stream is pumped out as required and tankered by road to an appropriately licenced waste water treatment facility.

Sanitary Wastewater
Effluent generated from the office accommodation flows via foul line, running from the site offices and canteens to an onsite MBBR tank situated in the north-eastern corner of the site. Partially treated foul water is pumped to a twin chamber effluent storage tank located along the eastern flank of the processing building, prior to transportation offsite for appropriate treatment.

2.4 Buildings, Plant and Equipment

Plant infrastructure remaining on site will be dependent on the future use.

It is envisaged that the main sheds and administration buildings will be decontaminated and retained for use by future ventures at the site. Due to the nature of materials stored in the waste sheds a specialist contractor will conduct the decontamination process. The open yard area of the site will be left empty prior to closure. All materials stored in this area will be removed and the area will be power washed by AES staff.

All remaining infrastructure will be validated as clean and posing no risk of environmental contamination before decommissioning of the site is complete and the waste licence surrendered to the Agency.

The infrastructure onsite includes:

- 1 no. weighbridge
- 1 no. cherry picker
- 1 no. road sweeper
- 2 no. bobcats
- 3 no. fork trucks
- 1 no. baler
- 1 no. shredder (Paper)
- 1 no. shunter
- 1 no. grab excavator
- 1 no. processing line comprising conveyors, manual picking line, magnets and eddy current separators
- Portacabin office and welfare facilities

Diesel oil and electricity are the two forms of energy used on site. These fuels are used to power machinery such as the baler and to fuel vehicles. Electricity also powers office support systems.

The power and oil usage at the facility in 2016 were:

- electricity - 413.38 MWh per annum
- Diesel oil - 386,265 litres

2.5 Inventory of Raw Materials

Operations involve the storage and handling of diesel, hydraulic and lubricating oils. Diesel for the waste collection vehicles is stored in a 44,000 litre above ground double skinned steel tank. The associated dispensing unit is fitted with a spill collection tray. Diesel for the site plant is stored in a double skinned above ground plastic tank (2,500 litres) located beside the 44,000 litre tank.

Diesel for the on-site generator, which is located to the rear of the offices at the western side of the Process Building, is stored in an integral 1000 litre tank. Ad Blu for the road vehicles is stored in a double skinned above ground plastic tank (2,500 litres) located beside the site plant diesel tank.

The storage tanks were installed in 2012 are subject to regular integrity assessments and the most recent, which were completed in 2016, confirmed they are fit for purposes.

2.6 Inventory of Waste

It is assumed that there will be no more than 886 tonnes of waste on-site at the time of the closure. This is based on current operations and covers the maximum amount of waste on site at any one time.

The quantities are based on the maximum wastes on site at any one time, but in the event of a planned closure, the actual quantities should be considerably smaller, as the shutdown would be preceded by a reduction in the on-site inventory.

The waste will comprise a mix of the waste types that are authorised by the licence.

The wastes generated by site activities include process wastewater and small amounts of waste oils/ filters and batteries from emergency on-site plant and vehicle maintenance, and office and canteen waste.

Sanitary wastewater and process water management is described in Section 2.3.3. Waste oils and batteries are removed off-site for disposal/recovery at licensed treatment/recovery facilities. Office and canteen waste are sent to off-site treatment/disposal facilities.

3. CLOSURE TASKS & PROGRAMMES

3.1 Closure Tasks

3.1.1 Materials Management

A planned shutdown of operations would be carried out after the last batches of waste received at the site had been processed and consigned. It would be preceded by a scaling down of activities, thereby reducing the quantities of materials, particularly fuel and wastes, to be dealt with when implementing the DMP.

3.1.2 Buildings

It is not proposed to demolish any of the buildings, but they will be cleaned out and left in situ for future use. Given the nature of the waste handled at the facility, specialist decontamination of the Main Processing Buildings will not be required in and the cleaning will primarily involve the use of a road sweeper to clean the floor. Decontamination will not be required in the office area.

3.1.3 Plant & Equipment

In the event of a planned closure, the plant and equipment will be either be sent other AES facilities, sold for use, or scrapped at an approved waste recycling/recovery facility. At the time of the preparation of this DMP it is not possible to accurately quantify every item of plant that would be suitable for resale, as this depends on their future condition. Those items of plant that cannot be sold will be scrapped. All the metal items have a scrap value and therefore the removal of the plant and equipment should be cost neutral.

Given the nature of the waste handled at the facility, none of the plant items will require specialist decontamination before being scrapped. The cleaning will be carried out on-site, which will primarily involve power washing inside the Main Recycling Buildings, with the wash water collected in the storage tanks and subsequently removed from the site.

3.1.4 Soil, Surface Water & Groundwater Assessment

In the event that the Agency requires an assessment to be carried out, the scope of the assessment will be agreed in advance with the Agency.

3.1.5 Environmental Monitoring

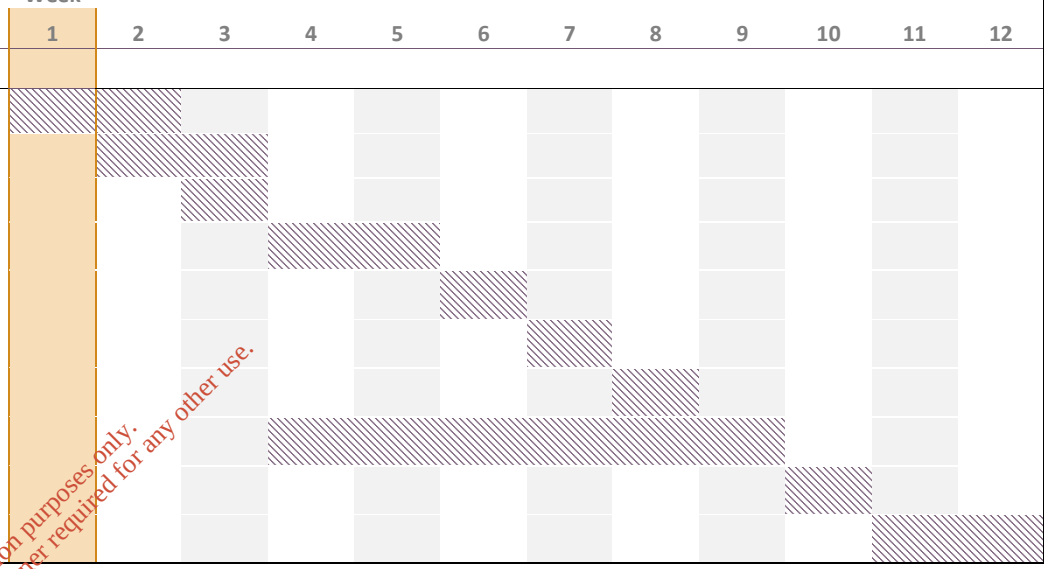
Monitoring will continue following the closure of the facility and pending the surrender of the Licence. The extent of the monitoring and the frequency may be amended, subject to the Agency's approval, to reflect the fact that the facility is closed.

3.2 Closure Programme

In the event that the entire facility is closed, all the operational areas will be decommissioned. The decommissioning of the operational area will take approximately 12 weeks (Figure 3-1) and will be carried out in a number of tasks, some of which will happen concurrently. The timeframe is based on AES direct experience of the clean-out of the Green Clean Waste Management Ltd (in Liquidation) waste management facility at Blake's Cross (W0222-01).

Figure 3-1 Decommissioning Plan Schedule

Tasks	START	DURATION
Task 1 Removal of Wastes and Consumables	1	2
Task 2 Cleaning and Removal of Plant and Equipment	2	2
Task 3 Cleaning of Storage Tanks	3	1
Task 4 Clean-out of Buildings	4	2
Task 5 Empty and Clean Wastewater Storage Tanks	6	1
Task 6 Decommission MBBR Tank	7	1
Task 7 Soil and Groundwater Assessment	8	1
Task 8 Surface water Assessment	4	6
Task 9 Disconnecting Services	10	1
Task 10 Closure Audit	11	2



4. CRITERIA FOR SUCCESSFUL CLOSURE

Successful decommissioning will only be complete when all buildings, equipment, materials, wastes or any other materials that could result in environmental pollution, are removed from the site and recycled, recovered or disposed in accordance with all regulations in force at the time and there is no soil or groundwater contamination at the site. An assessment of the achievement of the closure criteria will be included in the Validation Report described in Section 5.

5. CLOSURE PLAN VALIDATION

5.1 Closure Audit & Validation Report

Following the completion of the site clean out, AES will appoint an experienced independent environmental auditor, who will be approved by the Agency, to carry out a Closure Audit and produce a Validation Report that demonstrates the successful implementation of the Plan. The Closure Audit will address: -

1. Disposal of raw materials;

2. Disposal of wastes;

3. Decommissioning of plant and equipment;

4. Disposal of obsolete equipment;

5. Results of monitoring and testing during the decommissioning period;

6 Soil & Groundwater

7 The need for on-going monitoring, remedial actions or aftercare management.

The Validation Report will describe all of the activities carried out during the Closure Audit of the Operational Area and will contain records of the destinations of all wastes and materials consigned from the site during decommissioning. The Report will be submitted to the Agency within three months of execution of the Plan.

6. CLOSURE PLAN COSTING

The costs of a planned closure will be met in full by AES. The costs of implementing the DMP in an unplanned closure scenario, where AES is not in a position to meet the cost are presented in Tables 6-1 and 6-2. The costs are based on the following assumptions:

- The closure will be unforeseen and unexpected with no advance warning that would allow an orderly wind down of activities.
- The entire facility will be decommissioned and cleaned, with all wastes and consumables removed from the site.
- The decommissioning and building and plant cleaning will be carried out by third parties.
- A temporary site manager and operatives will be appointed to manage the operational area decommissioning and clean out.
- It is assumed that there will be c.886 tonnes of waste on-site at the time of the closure. This is based on current operations.
- The cleaning of the plant and equipment and off-site removal will be cost neutral given their resale/scrap value. This is a conservative approach given the type of plant and equipment on-site.
- None of the buildings will be demolished and the process water tank and MBBR will remain in situ and will not be decommissioned.
- Given the environmental sensitivity of the surrounding area a contingency of 10% is made.

Table 6-1
Waste costs

Waste description	EWC Code	Quantity (tonnes)	Unit rate (load and transport)	Cost (load and transport)	Unit rate (recovery /disposal gate fee)	Cost (recovery /disposal gate fee)	Total cost	Source of unit rates	Comment
Mixed Recycling Waste	20 03 01	45	23	1035	25	1125	2160	MRF charge rate - Thorntons Recycling	Waste sent for processing
Paper and cardboard packaging (baled)	15 01 01	220	23	5060	0	0	4830	Transport Charge only	Final destination buys this material from AES.
Plastic packaging	15 01 02	50	0	0	0	0	0	No charge *	Final destination buys this material from AES. This arrangement includes free haulage.
Wooden packaging	15 01 03	22	0	0	0	0	0	No charge *	Final destination buys this material from AES. This arrangement includes free haulage.
Glass packaging	15 01 07	22	0	0	0	0	0	No charge *	Final destination buys this material from AES. This arrangement includes free haulage.
Wood from C&D sources	17 02 01	11	12	132	20	220	352	Waste sent for processing - AES Lusk	Waste sent for processing
Mixed C&D Metals	17 04 07	6	0	0	0	0	0	No charge *	Final destination buys this material from AES. This arrangement includes free haulage.

Waste description	EWC Code	Quantity (tonnes)	Unit rate (load and transport)	Cost (load and transport)	Unit rate (recovery /disposal gate fee)	Cost (recovery /disposal gate fee)	Total cost	Source of unit rates	Comment
Soil and stones other than those mentioned in 17 05 03	17 05 04	11	12	132	25	275	407	Drehid Landfill Rate	
Mixed Construction & Demolition Waste	17 09 04	22	12	264	43	946	1210	Waste sent for processing - AES Lusk	Waste sent for processing
ferrous metal	19 12 02	21	0	0	0	0	0	No charge *	Final destination buys this material from AES. This arrangement includes free haulage.
non-ferrous metal	19 12 03	21	0	0	0	0	0	No charge *	Final destination buys this material from AES. This arrangement includes free haulage.
DMR Fines	19 12 12	33	8	264	113	3729	3993	Drehid Landfill Rate	
other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	19 12 12	220	8	1760	87	19140	20900	SRF Production - Thorntons Kileen Road	
Biodegradable kitchen and canteen waste	20 01 08	28	11.5	322	65	1820	2142	Compost Plant Rate - Thorntons Kilmainhamwood	
Street cleaning residues	20 03 03	11	8	88	38	418	506	Drehid Landfill Rate	

Waste description	EWC Code	Quantity (tonnes)	Unit rate (load and transport)	Cost (load and transport)	Unit rate (recovery /disposal gate fee)	Cost (recovery /disposal gate fee)	Total cost	Source of unit rates	Comment
Biodegradable wastes (from garden and park wastes)	20 02 01	6	12	72	27.5	165	237	Compost Plant Rate - Bord na Mona Kilberry	
Bulky waste	20 03 07	55	8	440	113	6215	6655	Drehid Landfill Rate	
Mixed municipal waste	20 03 01	82	8	656	113	9266	9922	Drehid Landfill Rate	
Removal and offsite disposal of foul water from tank	N/A	25	25	625		400	1025	Enva	
Removal and offsite disposal of wastewater	N/A			400			400	Enva	
Total							54739		
Contingency (10%)							5473.9		
Total including contingency							**€60,212.9**		

* It should be noted that these waste streams attract revenue but for the purpose of this document these have been inserted as cost neutral.

Table 6-2:
Other Costs

Task	Description	Quantity	Measurement unit	Unit rate	Cost	Source of unit rates
Plant and equipment decontamination	Decommissioning of operational connection to foul sewer	0	Day rate	500	0	Not connected to foul sewer
	Engineering costs for reconfiguring bin wash area to surface water	0	Day rate	1000	0	No bin wash area in place
	Removal and disposal of office equipment	5	Day rate	500	2500	AES
	Cleaning of silt trap, mobile bunds and oil interceptor and power washing	3	Day rate	1500	4500	Specialist contractor
	Cleaning oil storage tanks (1 No. White Diesel 2,500 l, 1 No. Green Diesel 40,000 l, Generator Diesel 2,000 l, Ad Blue 2,500 l, waste oil 2,500 l)	5	Unit	2000	10000	EPA Guidance
	Disconnect electricity, telecoms and foul sewer	1	Day rate	500	500	Estimate
Management and utility costs	1 No. Site Manager, 3 No. Operatives (5 days/week for 4 weeks)	20	Day rate	760	15200	AES rates
	Cleaning open yard	1	Day rate	400	400	Site has own road sweeper
	Insurance	1	Item	3000	3000	AES Rate
	Utility Bills (electricity, water, foul water)	1	Monthly	2000	2000	EPA Guidance
Environmental monitoring	Dust deposition, Groundwater and storm water monitoring including labour, analysis & report	2	Monitoring event	550	1100	Bord na Mona Environmental
Site security		4	Week	500	2000	EPA Guidance
Validation data	Validation report (consultant)	1	NA	3,000	3000	Consultancy Rate
License Surrender		1	Item	6000	6000	EPA Guidance
Total					50200	
Contingency (10%)					5020	
Total including contingency					**€55,220**	