

ATTACHMENT D

INFRASTRUCTURE & OPERATION

- D.1. Operational information requirements
- D.2.1 Wastes to be accepted
- D.2.2 Waste acceptance procedure
- D.2.3 Waste & material outputs from waste activities
- D.2.4 Principles of self-sufficiency & proximity

*For inspection purposes only.
Consent of copyright owner required for any other use.*

D.1. Operational information requirements

Site History

HLMC opened their plant in Ringaskiddy in 1991. The plant was set up to provide a single process, Primary Metal Fragmentation. In 1991 Irish Steel Ltd operated a steel smelting works at Haulbowline which was the consumer for 100% of the output from HLMC's plant. The existence of this perfect consumer made the HLMC site location ideal. The arrangement continued when Irish Steel was bought out and traded as Irish Ispat Ltd. In 2001 the Irish Ispat business closed and steel production in Ireland ended. For HLMC the loss of the ready market was significant but the proximity of the deep-water berth at Ringaskiddy left the HLMC operation in a position to adjust their operation accordingly. From that point onwards HLMC shipped all of their product out of Ringaskiddy to Clearway Belfast where the further processing capabilities add value to the product making it suitable for onward sale to customers principally in China and the Far East. The site at Ringaskiddy was leased from Irish Steel who owned this strip of land south of the N28 roadway and used it partly as a borrow area in conjunction with the steel smelting works and also as sports facility for plant workers. Subsequently the site was bought by HLMC and all of the land surrounding the HLMC site was purchased by Indaver Ireland with a view to establishing a waste incinerator.

Hammond Lane's recycling business provides essential services in Ferrous Metal Recycling, Non-Ferrous Metal Recycling and End-of-Life Vehicle De-pollution. Up to 80% of all the metals which pass from their original function into the category of scrap at the end of their primary use go through recycling to be used again in the production of new materials. There is an absolute and indispensable need for a healthy metal recycling industry and HLMC is the leading provider of this service in Ireland.



Ferrous Metal Recycling.

Ferrous Metal Recycling uses two processes:

(1) Fragmentation is the process whereby metals derived principally from the de-pollution of vehicles (often involving crushing for presentation at recycling facilities) pass through a fragmentation shredding mill which reduces the material to an essentially homogeneous mixture of metal particles and the other materials such as plastics and rubbers making up the constituents of the raw scrap. Other ferrous metal scrap of light structure capable of passing through the fragmentation will form a small percentage of the material treated in this way.

(2) Ferrous metal presented in larger sizes and heavier sections. The site has planning permission to process this material through a metal shears which effectively chops the product into manageable sized for stockpiling, loading and transport. However, it currently only proposed to stockpile this material on site as per the photo below.



Post Fragmentation Processing in the Cork plant.

The material deriving from the primary fragmentation process is shipped to the Belfast plant of Clearway where the company has invested in the most advanced technology for the further treatment of material which has been processed in the primary fragmentation stage. Here the shredded material is segregated into graded product to a range of specifications meeting precise customer requirements within the metal industry. Much of this product is shipped to China and the Far East.

Material deriving from the shearing process does not contain any non-metallic component and is suitable for direct shipping to steel smelting mills. Currently this product is shipped direct to Spain as feedstock for the steel industry.

Non-Ferrous Metal Recycling.

Non-ferrous metal scrap including aluminium, brass, bronze, copper, lead, nickel, nickel alloys, titanium and zinc make up the bulk of the non-ferrous metals categories handled by Clearway/Hammond Lane. Scrap is purchased from metal merchants and from the public. Hammond Lane use state of the art processes in the segregation and processing of this scrap to meet the requirements of their customers. This work is generally carried out within a building designed for the purpose, where recycling, unloading segregation, shearing and compaction required and packaging for onward dispatch take place. Most of these products are sold to the metal industry of the British Midlands, but new markets in China are also opening up.

End of Life Vehicle De-Pollution.

The process of De-pollution of Vehicles is now firmly established as an end of life process. Before the de-pollution process commences, tyres are removed, and alloy wheels and batteries. These products are sold on to specialist recycling companies who deal in recycling of these particular materials. Modern de-pollution rigs are used to remove all fluids from the vehicles and direct them to individual bunded tanks. These fluids are further recycled or disposed by licensed specialist companies in the waste business. De-polluted vehicles go directly to the metal fragmentation stage once the depollution stage is fully signed off.

The shredded material (photo below) is transported by ship, in cargoes of 2500 to 3500 tonnes, from Ringaskiddy to Belfast where it is unloaded and stockpiled awaiting processing. It is processed at a rate of 500-800 tonnes per day through the main separation plant at Clearway Belfast.



The material is loaded into a hopper-feeder which controls the feed-rate of material onto Conveyor 1. This conveyor transfers the material into a “zig-zag” air classifier which separates the lighter material from the heavier materials. The shredder light fraction (SLF) contains, dust, seat foam and textiles, plastics and a small amount of metals. The shredder heavy fraction (SHF) contains most of the metals, rubber, plastic, glass, wood, stones etc.

SLF is deposited onto Conveyor 6 where an over-band magnet (OBM) removes residual ferrous metals before it is fed into an eddy current separator (ECS Light) which removes residual non-ferrous metals. The recovered ferrous metal is transferred back onto the main ferrous metal Conveyor 2. The recovered non-ferrous metal drops from the ECS into a collection hopper. The light fraction residue falls from the ECS onto Conveyor 7 which transfers it to a stockpile from which it is taken to a non-hazardous landfill.

The SHF is transferred by Conveyor 2 onto a drum magnet which recovers the ferrous metals. The metals drop onto Conveyor 3, which has a “Picking Station” where alternator rotors and any contamination is removed manually. The ferrous metals are transferred onto Conveyor 5 which is a radial stockpiling conveyor. The recovered ferrous metals remain in a stockpile until they are transported to the nearby quay for shipping to steel mills mainly in Spain and Portugal.

The handpicked alternator rotors are sold as a separate commodity, normally in mainland UK, and they are transported by road. The hand-picked contamination is normally pieces of rubber that contain small ferrous metal inserts. This is transferred into the waste stock which goes to landfill.

The SHF with ferrous metals removed is now a mixture of non-ferrous metals, rubber, plastic, glass, wood, stones etc. falls onto Conveyor 8. An over-band magnet (OBM) removes any residual ferrous metals before it is fed into the main eddy current separators (ECS Heavy) which removes residual conductive non-ferrous metals. The non-ferrous metals are collected in a lorry body and when it is full it is transported to storage bay before it is loaded into 40-ft containers for shipment overseas.

When the magnets and ECSs have removed as much metal as possible the residue still has a metallic content of 10% to 15% which is mainly stainless steel, copper wire and some other metals. This material is processed off-line on a separation plant that uses powerful rare earth magnets, a high strength eddy current separator (ECS), induction separators (ISS) and a laser scanner (KSS).

The material is loaded into a feeder which feeds the material onto Conveyor 1 at a controlled rate of about 10-tonnes per hour. The magnets remove mainly rubber material that contains very small pieces of steel and this material is transferred to a stockpile by Conveyor 7. The remaining material is transferred to the ECS using Conveyor 2. The ECS removes any residual conductive non-ferrous metals which are transferred to a stockpile using Conveyor 8. After these first two stages of the process the residue contains stainless steel, copper wire and non-metals.

The material is transferred to the first ISS where all metallic material is recovered and the non-metal residue falls onto Conveyor 9 which transfers it to a stockpile before it is sent to landfill. The second ISS recovers stainless steel which falls onto Conveyor 10 which is transferred to a stockpile. The stainless steel is a high grade material which is shipped to the UK by truck. It represents about 10% to 12% of the input material to the plant.

Hammond Lane Metal Company Ltd – Ringaskiddy, Co. Cork

The residue from the second ISS is transferred to the KSS using Conveyor 5. The KSS uses laser scanners to identify the shape of copper wire and recover it. The copper wire represents about 2% to 4% of the input material. The residue from the KSS represents about 10% of the input material and this still contains about 10% metals. This material is stockpiled and later it is processed through this same plant but with different detection settings which can recover the remaining metals from the residue.

From the main plant the recovery rates are 70% to 75% ferrous metals and 3% to 4% non-ferrous metals including hand-picked metals. About 15% of the residue is further processed off-line using the ISS KSS plant where 12%-16% of this residue is recovered which represents 2% to 2.5% of the original shredded material.

*For inspection purposes only.
Consent of copyright owner required for any other use.*

Hammond Lane Metal Company Ltd – Ringaskiddy, Co. Cork

D.2.1 Wastes to be accepted

The overall amount of waste accepted will be a maximum of 73,500 tonnes annually. The wastes will be both hazardous and non-hazardous and will be generated by households, commercial and industrial operations and construction & demolition sites.

General waste tonnages to be accepted are as follows:

ELV	50,000 tonnes
Ferrous	12,890 tonnes
Non ferrous	10,000 tonnes
Batteries	100 tonnes
WEEE	510 tonnes

The site will accept the waste types listed below.

EWC Code (6 digits)	Waste Type	Quantity (Tonnes)
02 01 10	Waste Metal	
11 05 01	Hard Zinc	
11 05 02	Zinc Ash	
12 01 01	Ferrous Metal Filings & Turnings	
12 01 03	Non-Ferrous Metal Filings & Turnings	
12 01 21	Spent Grinding Bodies	
12 01 99	Waste not otherwise specified	
15 01 04	Metallic Packaging	
15 01 05	Composite Packaging	
16 01 04*	End-of-Life Vehicles	
16 01 06	End-of-Life Vehicles (De-polluted)	
16 01 17	Ferrous Metal	
16 01 18	Non-ferrous Metal	
16 02 14	Discarded Equipment	
16 06 01*	Lead batteries	
17 04 01	Copper, Bronze, Brass	
17 04 02	Aluminium	
17 04 03	Lead	
17 04 04	Zinc	
17 04 05	Iron & Steel	
17 04 06	Tin	
17 04 07	Mixed Metals	
17 04 11	Cables	
19 12 02	Ferrous Metal	

Hammond Lane Metal Company Ltd – Ringaskiddy, Co. Cork

EWC Code (6 digits)	Waste Type	Quantity (Tonnes)
19 12 03	Non-ferrous Metal	
19 12 12	Other Wastes	
20 01 36	WEEE	
20 01 40	Metals	
	TOTAL	73,500

D.2.2 Waste acceptance procedure

Please see attached Appendix 2 of the attached EMS – C2.

D.2.3 Waste & material outputs from waste activities

Hammond Lane's recycling business provides essential services in Ferrous Metal Recycling, Non-Ferrous Metal Recycling and End-of-Life Vehicle De-pollution. Up to 80% of all the metals which pass from their original function into the category of scrap at the end of their primary use, go through recycling to be used again in the production of new materials. There is an absolute and indispensable need for a healthy metal recycling industry and HLMC is the leading provider of this service in Ireland.

The Two Recycling Processes

Ferrous Metal Recycling uses two processes:

(1) Fragmentation is the process whereby metals derived principally from the de-pollution of vehicles (often involving crushing for presentation at recycling facilities) pass through a fragmentation shredding mill which reduces the material to an essentially homogeneous mixture of metal particles and the other materials such as plastics and rubbers making up the constituents of the raw scrap. Other ferrous metal scrap of light structure capable of passing through the fragmentation will form a small percentage of the material treated in this way.

(2) Metal Shearing is the second process used in the preparation of ferrous metal for onward disposal. This process is reserved for ferrous metal presented in larger sizes and heavier sections. These are processed through a metal shears which effectively chops the product into manageable sized for stockpiling, loading and transport.

Post Fragmentation Processing in the Cork plant

The material deriving from the primary fragmentation process (EWC Code 19 10 06) is shipped to the Belfast plant of Clearway where the company has invested in the most advanced technology for the further treatment of material which has been processed in the primary fragmentation stage. Here the shredded material is segregated into graded product to a range of specifications meeting precise customer requirements within the metal industry. Much of this product is shipped to China and the Far East.

The residual non-metallic material deriving from the segregation process is largely comprised fragmented and powdered, rubbers and plastics are categorised as non-hazardous waste.

Onward Recovery of Sheared Metal Product

Material deriving from the shearing process does not contain any non-metallic component and is suitable for direct shipping to steel smelting mills. Currently this product is shipped direct to Spain as feedstock for the steel industry.

Non-Ferrous Metal Recycling

Non-ferrous metal scrap including aluminium, brass, bronze, copper, lead, nickel, nickel alloys, titanium and zinc make up the bulk of the non-ferrous metals categories handled by Clearway/Hammond Lane. Scrap is purchased from metal merchants and from the public.

Hammond Lane use state of the art processes in the segregation and processing of this scrap to meet the requirements of their customers.

Processing and Onward Sale

This work is generally carried out within a building designed for the purpose, where recycling, unloading segregation, shearing and compaction required and packaging for onward dispatch take place. Most of these products are sold to the metal industry of the British Midlands, but new markets in China are also opening up.

End of Life Vehicle De-Pollution

The process of De-pollution of Vehicles is now firmly established as an end of life process.

Recovery of Components and Fluids

Before the de-pollution process commences, tyres are removed, and alloy wheels and batteries. These products are sold on to specialist recycling companies who deal in recycling of these particular materials. Modern de-pollution rigs are used to remove all fluids from the vehicles and direct them to individual bunded tanks. These fluids are further recycled or disposed by licensed specialist companies in the waste business. De-polluted vehicles go directly to the metal fragmentation stage once the depollution stage is fully signed off.

The shredded material is transported by ship, in cargoes of 2500 to 3500 tonnes, from Ringaskiddy to Belfast where it is unloaded and stockpiled awaiting processing. It is processed at a rate of 500-800 tonnes per day through the main separation plant at Clearway Belfast.

The material is loaded into a hopper-feeder which controls the feed-rate of material onto Conveyor 1. This conveyor transfers the material into a “zig-zag” air classifier which separates the lighter material from the heavier materials. The shredder light fraction (SLF) contains, dust, seat foam and textiles, plastics and a small amount of metals. The shredder heavy fraction (SHF) contains most of the metals, rubber, plastic, glass, wood, stones etc.

SLF is deposited onto Conveyor 6 where an over-band magnet (OBM) removes residual ferrous metals before it is fed into an eddy current separator (ECS Light)) which removes residual non-ferrous metals. The recovered ferrous metal is transferred back onto the main ferrous metal Conveyor 2. The recovered non-ferrous metal drops from the ECS into a collection hopper. The light fraction residue falls from the ECS onto Conveyor 7 which transfers it to a stockpile from which it is taken to a non-hazardous landfill.

The SHF is transferred by Conveyor 2 onto a drum magnet which recovers the ferrous metals. The metals drop onto Conveyor 3, which has a “Picking Station” where alternator rotors and any contamination is removed manually. The ferrous metals are transferred onto Conveyor 5 which is a radial stockpiling conveyor. The recovered ferrous metals remain in a stockpile until they are transported to the nearby quay for shipping to steel mills mainly in Spain and Portugal.

The handpicked alternator rotors are sold as a separate commodity, normally in mainland UK, and they are transported by road. The hand-picked contamination is normally pieces of rubber that contain small ferrous metal inserts. This is transferred into the waste stock which goes to landfill.

The SHF with ferrous metals removed is now a mixture of non-ferrous metals, rubber, plastic, glass, wood, stones etc. falls onto Conveyor 8. An over-band magnet (OBM) removes any residual ferrous metals before it is fed into the main eddy current separators (ECS Heavy) which removes residual conductive non-ferrous metals. The non-ferrous metals are collected in a lorry body and when it is full it is transported to storage bay before it is loaded into 40-ft containers for shipment overseas.

When the magnets and ECSs have removed as much metal as possible the residue still has a metallic content of 10% to 15% which is mainly stainless steel, copper wire and some other metals. This material is processed off-line on a separation plant that uses powerful rare earth magnets, a high strength eddy current separator (ECS), induction separators (ISS) and a laser scanner (KSS).

The material is loaded into a feeder which feeds the material onto Conveyor 1 at a controlled rate of about 10-tonnes per hour. The magnets remove mainly rubber material that contains very small pieces of steel and this material is transferred to a stockpile by Conveyor 7. The remaining material is transferred to the ECS using Conveyor 2. The ECS removes any residual conductive non-ferrous metals which are transferred to a stockpile using Conveyor 8. After these first two stages of the process the residue contains stainless steel, copper wire and non-metals.

The material is transferred to the first ISS where all metallic material is recovered and the non-metal residue falls onto Conveyor 9 which transfers it to a stockpile before it is sent to landfill. The second ISS recovers stainless steel which falls onto Conveyor 10 which transferred to a stockpile. The stainless steel is a high grade material which is shipped to the UK by truck. It represents about 10% to 12% of the input material to the plant.

The residue from the second ISS is transferred to the KSS using Conveyor 5. The KSS uses laser scanners to identify the shape of copper wire and recover it. The copper wire represents about 2% to 4% of the input material. The residue from the KSS represents about 10% of the input material and this still contains about 10% metals. This material is stockpiled and later it is processed through this same plant but with different detection settings which can recover the remaining metals from the residue.

From the main plant the recovery rates are 70% to 75% ferrous metals and 3% to 4% non-ferrous metals including hand-picked metals. About 15% of the residue is further processed off-line using the ISS KSS plant where 12%-16% of this residue is recovered which represents 2% to 2.5% of the original shredded material.

D.2.4 Principles of self-sufficiency & proximity

Relevant EU Targets

The national development and performance of waste recovery, recycling and disposal services is an objective that requires to be encouraged in a positive manner. The EU Revised Waste Framework Directive (2008/98/EC) applies from October 2011 in all member states of the EU. Articles 10 and 11 of this directive, requires member states to take the necessary measures to ensure that waste undergoes recovery and to promote high quality recycling. A target is set for the metal recycling industry to achieve recycling of 50% by weight of all metals occurring as waste, by 2020. Achieving these targets in the national context will require promotion and encouragement within the industry with regard to the provision of adequate facilities and the introduction of best practice and environmentally sustainable procedures.

Recovery and Recycling of Metals

The recovery and recycling of metals, both Ferrous metals and Non-Ferrous metals is a highly effective process from an environmental point of view. Approximately 40% of all worldwide metal production is accounted for by recycled scrap material, equivalent to 400m.Te. of recycled metal annually. Recycling of Ferrous metal is a highly effective and environmentally friendly source of raw material for the metal production industry. Unfortunately Ireland no longer has a production capability for Iron and Steel but the Metal Recycling Industry has an international and worldwide profile and the supply of prepared for re-use material to the production industry is a significant contribution by Ireland to worldwide conservation of natural resources. This principal is firmly embodied in EU policy through Directive 2008/98/EC and other relevant Directives.

In comparison with the provision of source material by ore extraction, Ferrous Metal Recycling shows a 58% reduction in CO² emissions and a 75% reduction in energy use. An 86% reduction in air pollution and 76% reduction in water pollution also applies in comparison with traditional ore extraction. With regard to Non-Ferrous Metal Recycling the position is even more striking and the majority of the recycled metals are between 90% and 100% re-usable when delivered as prepared for re-use material. In taking steps to comply with the intent of EU Directives with regard to waste, and with particular reference in this case to Metal Waste Recycling the development of this industry can most effectively be serviced by operators who have a proven track record of responsible performance. Hammond Lane Metal Company Ltd operate all of their recycling locations in Ireland both under the Clearway Group and directly as Hammond Lane Metal Company Ltd to high environmental standards, in accordance with their licensing permits.

End of Life De-Pollution of Vehicles

EU Directive 2000/53/EC became effective in January 2006 and directs that end of life cars and commercial vehicles must be dispatched to Authorised Treatment Facilities and a Certificate of

Hammond Lane Metal Company Ltd – Ringaskiddy, Co. Cork

Destruction must be issued for each vehicle. This procedure is in place in Ireland but it is reported that as late as 2008, 89% of all ELV's in Ireland were being illegally disposed of. The most up to date National Waste Report confirms that Ireland is not meeting the targets set in Directive. Hammond Lane's core existing activity in Ringaskiddy is the Fragmentation shredding of ELV's. These facilities are critical for Ireland in order to meet this existing target and even more critical with regard to the 95% target coming in to effect in January 2015.

*For inspection purposes only.
Consent of copyright owner required for any other use.*