

SANT' ANTIN WASTE TREATMENT PLANT

Application for Variation of IPPC permit IP 0005/13/B to introduce a Ferrous Sorting Line and a Glass Sorting Line, to extend operational time of the sorting operation, and to initiate Partial Decommissioning



1. Introduction and Context

1. The Sant' Antnin Waste Treatment Plant consists of a waste management facility designed for the management of pre-treated and unsorted municipal wastes, through the following operation of a Rudimentary Sorting Line intended to recover materials for recycling from the collection of sorted wastes from households.
2. The Mechanical Treatment Plant, previously intended for the processing of Municipal Solid Waste (black bag) and Organic Waste (white bag), has been decommissioned in-line with the method statement penned by Messrs. @econsulting and approved by ERA. Furthermore, the Organic Processing Plant, projected to replace the decommissioned Mechanical Treatment Plant, shall not be utilised. This means that there shall be no processing of black bags and white bags at the plant. This development is also reflected in the Improvement Programme (refer to Annex 04).
3. The Anaerobic Digestion plant shall be decommissioned in the coming months (refer to Annex 17).
4. Various ancillary facilities are required to allow the proper functioning of the plant, including weighbridge, abatement equipment, quarantine area and storage/ yard and emergency generator.
5. From a planning perspective, the plant was first approved (as an outline permit – PA 2838/03) in September 2005, allowing for the part demolition of existing plant and upgrading of the existing facility to accommodate a material recovery facility, a mechanical treatment plant, a digestion plant and a composting plant. Full development permission (PA 4607/06) was issued in February 2007). The development permit process followed assessment through submission of an Environmental Impact Statement.
6. The operations of the plant were first permitted by EP 0021/09, as per the requirements of the Waste Framework Directive. However, this permit was superseded by the issue of IP 0005/13/A, given that this plant fell within the scope of the Industrial Emissions Directive (IED) 2010/75/EU. The latter permit was issued in December 2015.
7. In early 2017, the Government of Malta declared its intention to relocate the Sant' Antnin plant from its current location in Marsaskala, within a time span of 7 years. Planning for this relocation is currently under way.
8. Linked to the previous point, a decommissioning plan for the site is being drafted and shall be submitted to ERA in line within the timeframe stipulated

in Improvement Programme Item 26 of permit IP 0005/13/B. It is envisaged that the actual decommissioning will happen in phases; thus making the endeavour more manageable.

9. Despite the planned decommissioning, in the interim, Wasteserv is actively seeking ways to improve the nation's recovery efforts both in terms of quantity and quality of the material intended for recycling.
10. A review of the Improvement Programme indicates that various deliverables have not been implemented on the date stipulated within the permit, and work on these deliverables is still under way given the following constraints:
 - Budgetary limitations;
 - Procurement processes which limit timely action and hamper effective delivery of parts / equipment / services;
 - Decision to start decommissioning and to relocate operations.

In view of the above, WasteServ shall be logging a request to extend certain target dates so that improvements can still be worked on and completed. As necessary, the target dates can be set through discussions with WasteServ and ERA.

2. Scope of Application & Non-Technical Summary

11. This application is a request for variation to the current permit to:
 - introduce the operation of a Ferrous Sorting Line (FSL);
 - introduce the operation of a Glass Sorting Line (GSL);
 - extend operational hours of Rudimentary Sorting Line (RSL);
 - decommission part (Phase 1) of the plant.
12. The Glass Crusher, which was in a mothball condition, was repurposed and transformed into a FSL which enables the selection of ferrous metal from unsorted ferrous waste. Rejects are diverted to rejects containers.
13. The concept of the GSL is the same as that of the FSL, namely removing foreign material, namely: ferrous material, non-ferrous material, ceramic, stones, porcelain, plastic, cardboard, from the waste.
14. The setup of the RSL is unchanged save one improvement; the installation of a magnet at the end of the line aimed at recovering metallic material which would otherwise end up as reject.
15. Using these lines, higher quality outputs shall be secured, thus making the waste more attractive to the market and therefore more sellable.
16. As previously pointed out, recovery of recyclable material is achieved via the Rudimentary Sorting Line. To maximise this line, WasteServ is planning to operate the RSL an additional shift, thus covering 24-hour operation.
17. The application includes the following documentation as annexes:

Annex 01:	IPPC Application Forms
Annex 02:	Company Registration Certificate
Annex 03:	Existing Permits
Annex 04:	Improvement Programme Update
Annex 05:	Site Plan
Annex 06:	Photos
Annex 07:	Flow and Emissions Inventory
Annex 08:	Line Diagram & Process Flow Diagram
Annex 09:	Power Consumption
Annex 10:	Preventive Maintenance Schedule
Annex 11:	BAT Comparison
Annex 12:	Fire, Safety Report
Annex 13:	EMP
Annex 14:	ERP
Annex 15:	Fire, Safety Report

Annex 16:	Odour Management Plan
Annex 17:	Partial Decommissioning – Phase 1
Annex 18:	Decommissioning Plan of 9000 Litre Tank
Annex 19:	CV of TCPs

3. Technical Details

18. The FSL consists of the following features:

- A hopper via which the system is fed;
- A series of conveyor belts to transport the waste;
- A magnetic separator to select the ferrous objects from other non-target material;
- A sorting room which is manned by operatives whose task is to further remove rejects;
- 3 containers, one for the sorted waste, and two for the rejects;
- A control panel makes it possible to control / switch on various elements of the system.

Refer to Annex 06 for photos of the FSL.

19. The GSL shall consists of the following machinery:

- An inclined conveyor belt to disperse and to transport the waste;
- A subsequent horizontal conveyor manned with a number of operatives on each side to remove rejects;
- Small scale containers for foreign material and clean glass;

20. The decommissioning of the Sant' Antnin Waste Treatment Plant shall start from the Anaerobic Digestion plant and associated ancillary equipment. The Method Statement presented in Annex 17 provides further info on which equipment shall be decommissioned, the decommissioning method and the waste fractions that are envisaged to emerge from the decommissioning operation.

21. The following table provides responses to the various requests for information included within the IPPC Permit Application (Form C).

Section	Relevant Information
C1.4.1 Site Report A site report, describing the condition of the site of that part of the installation in respect of which you are applying for a variation, and, in particular, identifying any substance in, on or under the land which may constitute a pollution risk. A baseline report assessing the state of the groundwater and land may also be required by the Authority.	A site report shall be drawn up following extraction and analysis of the coring (as per methodology agreed to with the Authority) and sampling and analysis of ground water. As per update to the Improvement Programme (refer to Annex 04), baseline report shall be completed by July 2022. Consequently, site report shall be submitted by July 2022.
C2.1 Environmental Management System Provide details of any changes to environmental management techniques resulting from your proposals.	The in-house system is in the process of being updated to reflect the introduction of the FSL and GSL. A Risk Assessment – Method Statement (RAMS) was developed for the FSL. A similar RAMS shall be developed for the GSL. Refer to Annex 15 – EMS.
C2.2.2 Describe the proposed techniques and measures to prevent and reduce waste and emissions of substances and heat (including during periods of start-up or shut-down, momentary stoppage, leak or malfunction) as a result of your proposals.	Techniques used to prevent and reduce waste and emissions of substances are given in Annex 10 – BAT Comparison.
C2.2.3 Submit a flow diagram summarising the proposed installation activities and indicating the changes.	Line Diagram & Process Flow Diagram are detailed in Annex 08. Maximum throughput (of cleaned product) for the FSL is 8t per 12 hours shift. Maximum throughput (of cleaned product) for the GSL is still to be determined following trial runs.
C2.2.5 Include an outline of the main alternatives considered to the proposed technology, techniques and measures.	Given the simplicity of the operation involved, sorting lines (or variations of them) are the natural selection/s for such processes. Additional investment to attain more sophisticated lines do not make sense in line of the eventual decommissioning of the plant.

<p>C2.3 Raw materials Identify any changes to the raw and auxiliary materials, and any other substances (including fuels) proposed to be used as a result of your proposals.</p>	<p>No changes are being proposed.</p>
<p>C2.4 Ozone depleting substances and fluorinated greenhouse gases Identify any changes to the equipment using ozone depleting substances and fluorinated greenhouse gases, with a fluid charge of 3 kg or more.</p>	<p>Not applicable. AC unit in sorting room of the FSL and AC unit in the control room are of a domestic capacity.</p>
<p>C2.6.1 Describe any changes to the annual energy consumption, highlighting the main energy consuming equipment, and generation by source and end-use (including information on energy generated on site, if applicable).</p>	<p>Energy consumption of the lines is as follows:</p> <ul style="list-style-type: none"> • FSL: ≈ 92.085 kWhr • GSL: ≈ 52.50 kWhr • RSL: ≈ 2052 kWhr (previously ≈ 1026 kWhr for 1 shift) <p>Workings are presented in Annex 09.</p> <p>The equipment used is low-tech. Where possible, conveyor motors are connected to variable drive to adjust speed and consequently regulate electrical needs. Since the SAWTP will be decommissioned in the coming years, any further energy efficient measures are not planned.</p>
<p>C2.7 Water Provide a breakdown of any changes to the proposed annual water consumption by source and end-use.</p>	<p>The proposed changes are not expected to introduce any significant change in terms of water consumption. Unsorted Ferrous Waste shall be sprinkled manually prior to insertion in hopper. Unsorted Glass Waste shall be loaded on the conveyor belt as is.</p>

<p>C2.8 Risk Assessment</p> <p>Describe any changes to the documented system used to identify, assess and minimise the environmental risks and hazards of accidents and their consequences.</p> <p>Include any changes to emergency plans in case of fire, actions to be taken in case of failure of abatement equipment and other environmentally relevant incidents (e.g. spillages, gas leakage).</p>	<p>Annex 13 includes the Emergency Response Plan applicable to the whole plant. The sorting room of the FSL is equipped with two fire extinguishers. Furthermore, a fire hydrant is close by. The GSL shall be equipped with equipped with two fire extinguishers as well.</p>
<p>C2.9 Training</p> <p>Please indicate whether any changes to the staff training programme will be required. Please submit the name of the technically competent person on site who will be responsible for such training.</p>	<p>Personnel have been trained on their role in the process.</p>
<p>C2.10 Cessation</p> <p>Describe any changes to the outline decommissioning plan describing the draft proposed measures upon definitive cessation of activities, to avoid any pollution risk and return the site of the installation to a satisfactory state (including relevant measures for the design and construction of the installation).</p> <p>This plan shall include a draft waste management strategy, and a qualitative assessment of the potential for contamination of land and groundwater pollution which might arise from the historical and current processes carried out at the installation.</p>	<p>The introduction of the FSL and GSL do not introduce any significant features that would impact the outline decommissioning plan. On eventual decommissioning, the lines introduced would largely result in generation of scrap metal, the belts of the actual conveyors and some WEEE. These waste streams can easily be diverted to authorised waste management facilities in Malta or abroad.</p> <p>For details pertaining to decommissioning of Phase 1, refer to Annex 17.</p>
<p>C3.1.1</p> <p>Characterise (using the European Waste Catalogue code, in accordance with LN 184 of 2011 as amended) and quantify any changes to each waste stream from the installation.</p>	<p>Current IPPC permit already permits the acceptance of ferrous waste (15 01 04 & 20 01 40) and glass waste (15 01 07 & 20 01 02). This variation is intended to permit two lines aimed at producing waste outputs of a higher quality. Resulting output (ferrous material & glass) and rejects are already outputs of the plant.</p>

<p>C3.1.2 Describe any changes to the proposed measures for waste management, storage and handling. If any are identified, also indicate the storage location of wastes on a site layout plan and give details on:</p> <ul style="list-style-type: none"> • Maximum storage capacity; • Containment measures (including bunding capacity, where applicable); • Protective measures (including security). 	<p>Unsorted ferrous waste and unsorted glass waste are stored in the yard on impermeable flooring. A limited storage of unsorted ferrous waste is kept on site adjacent to the line; this ensures a constant input. Unsorted ferrous waste and unsorted glass waste are handled using a wheel shovel. Given the nature of the waste, no containment measure is deemed necessary. The FSL and GSL are within SAWTP and thus security provisions already in place apply.</p>
<p>C3.3.1 Is a new sewer connection envisaged as a result of your proposal? If yes, please submit a block plan of the site, showing the proposed layout of sewer connections and any other drains (colour-coded), as well as the proposed discharge point(s).</p>	<p>No new sewer connection required.</p>
<p>C3.6 Emissions to Air Identify if there may be any changes in emissions of substances to air. If any are identified, submit details of each emission point, the nature and the proposed quantities of substances emitted from each point and treatment/abatement measures. A block plan of the site showing each emission point should be submitted. For each new boiler/generator, submit the following details: rated thermal input, energy output, date of manufacture, stack height, fuel type and annual fuel consumption.</p>	<p>Unsorted ferrous waste shall be sprinkled with water prior to insertion into hopper to mitigate any dust dispersion. Unsorted glass waste shall be loaded on the conveyor belt as is.</p>

<p>C3.7 Odour emissions Identify if there may be changes in emissions of odour. If any are identified, submit details of the main sources of odour, and the proposed techniques and measures for control of odour.</p>	<p>Given the nature of waste/s, no odour emissions are envisaged.</p>
<p>C3.9 Noise Describe: C3.9.1: The main sources of noise and vibration (including infrequent sources) of the new proposal; C3.9.2: The proposed techniques and measures for control of noise; C3.9.3: The nearest noise sensitive locations and distance away from the site (a site map may be submitted for this purpose); and C3.9.4: Relevant environmental noise measurement surveys which have been undertaken (monitoring shall be according to the latest revisions of ISO1996 and the rating of industrial noise affecting residential areas shall be according to BS 4142; monitoring shall be carried out exclusively using type 1 sound level meter).</p>	<p>With respect to the FSL, a marginal increase in noise is expected given that the line comprises various moving parts. An enclosure was erected around the (first) inclined conveyor belt (immediately after the hopper) and the magnetic separator to limit sound propagation.</p> <p>The GSL comprises only two in-series conveyor belts, thus potential for noise is limited.</p> <p>For both lines, drop heights shall be kept to a minimum and operations shall stop at 19:00.</p> <p>Reference to the RSL, operations are enclosed indoors in the shed with the building fabric and doors / shutters limiting noise propagation. With proper planning, vehicle movement in the yard at night shall be limited to the bare minimum.</p> <p>Through proper maintenance, the lines shall be kept in good working condition thus avoiding noise generated through unnecessary vibration.</p> <p>The current EMP (refer to Annex 12) is considered to be adequate in capturing noise monitoring requirements.</p>

<p>C3.10 Monitoring Describe the proposed measures for monitoring emissions arising from the proposal, including any environmental monitoring. The following must be specified:</p> <p>C3.10.1: The location of each proposed monitoring point (plotted on a suitably-labelled block plan of the site);</p> <p>C3.10.2: The substances (in each environmental medium) which are proposed to be monitored;</p> <p>C3.10.3: The frequency with which monitoring is proposed to take place;</p> <p>C3.10.4: The proposed measurement methodology, which should be a standard methodology, such as EN or ISO standard, or equivalent;</p> <p>C3.10.5: The proposed procedure for evaluation of the results.</p>	<p>The existing EMP is deemed to be adequate with respect to the monitoring requirements emanating from this variation. Refer to Annex 12 for details.</p>
<p>C4.1 Environmental effects Provide an assessment of the potential significant environmental effects (including transboundary effects) of the foreseeable emissions from the proposal.</p>	<p>Given the limited scale of the variation proposed, any emissions to air, water or land are not expected to cause an impact more significant from that originally contemplated in the Environmental Impact Assessment originally carried out for this project.</p>
<p>C4.2 Effects on other sites Provide an assessment of whether the proposal is likely to have a significant effect on another site in Malta and, if it is, provide an assessment of the implications of the installation for that site.</p>	<p>No effects on other sites are foreseen. The FSL complements the recovery process which takes place at Malta North. Output from MN is further treated in the FSL to produce a better-quality output. Glass collected from households and Bring in Sites shall be further cleaned using the GSL. With the additional operating hours (shift) of the RSL, more recyclables are processed, thus alleviating load from MN.</p>

<p>C9.1</p> <p>Expenditure plan</p> <p>Please provide a plan of the estimated expenditure for each phase of the following specified activities arising from your proposal.</p> <p>The plan should include the likely costs of:</p> <ul style="list-style-type: none"> ✦ monitoring (emission / discharge and ambient monitoring); ✦ clearing the installation (including drainage systems) of all wastes; ✦ remedial action in the event of the failure of pollution control systems. 	<p>Monitoring → € 90,000 per annum*.</p> <p>Clearing Sorting Lines of all wastes → € 1,000</p> <p>Dismantling of Lines → difficult to quantify given that process (service) would be subject to public procurement, but in anyway, it is envisaged that sales of ferrous components (of the lines) will greatly offset any negatives incurred.</p> <p>* figure submitted in previous application.</p>
---	---

Annex 01: IPPC Application Forms

Annex 02: Company Registration Certificate

Annex 03: Existing Permits

Annex 04: Improvement Programme Update

Annex 05: Site Plan

Annex 06: Photos

Annex 07: Flow & Emissions Inventory

Annex 08: Line Diagram & Process Flow Diagram

Annex 09: Power Consumption

Annex 10: Preventive Maintenance Schedule

Annex 11: BAT Comparison

Annex 12: EMP

Annex 13: ERP

Annex 14: Fire, Safety Report

Annex 15: EMS

Annex 16: Odour Management Plan

Annex 17: Partial Decommissioning – Phase 1

Annex 18: Decommissioning Plan of 9000 Litre Tank

Annex 19: CV of TCP/s