

MALTA NORTH WASTE TREATMENT PLANT

Application for Variation of IPPC permit IP 0003/19 to introduce a small-scale Material Recovery Facility (MRF) within the Malta North Waste Treatment Plant for the sorting, baling and temporary storage of recovered material



Source: Google Maps (2021).

1. Introduction and Context

1. The Malta North Waste Treatment Plant (Malta North) consists of a waste management facility designed for the treatment of municipal wastes. The facility currently includes the following specified activities (or directly associated activities) as specified under IP 0003/19:
 - Mechanical Treatment Plant (MTP) receiving a range of municipal and bulky wastes for sorting, baling and temporary storage;
 - Anaerobic Digester Plant (AD) receiving sorted biodegradable wastes from the MTP and biological hydrolysis and digestion to produce digestate;
 - Pipework between the two plants for the transfer of substrate;
 - Biogas management through collection of biogas and production of energy using a Combine Heat & Power (CHP);
 - Mitigation equipment including biofilters and fast roller shutters;
 - Emergency Generators to generate electric power in case of electricity failure.

The above facilities are described in detail in the original IPPC Application and the Environmental Impact Statement.

2. The plant was first approved through approval of the following development permits:
 - PA/01293/12 Construction of a mechanical waste treatment plant including weighbridge station, administration building, car-parking spaces, external storage spaces, sub-station, wheel wash facility and circulation roads. Approved in November 2013.
 - PA/01294/12 Construction of biological treatment plant and manure (animal husbandry) treatment plant, including site offices / control rooms and circulation roads. Approved in April 2013.

The above applications were supported by an Environmental Impact Assessment Update on the Master Plan for the Maghtab Environmental Complex.

3. The first IPPC permit, IP 0007/13/A, was issued on 16.11.2015 for four years. The permit was renewed (IP 0003/19) on 21.10.2020 and is valid for four years.
4. Through this variation, Wasteserv is planning to introduce a small-scale MRF and a waste reception area which services the said facility.

5. Linked to the previous point, two (2) applications have been raised with the Planning Authority for the following interventions:
 - Application Ref. WSM17-20: Proposed retrofitting of existing shed with cladding and change of use to include sorting operations for recyclable material. Submitted on 24.06.2021.
 - Application Ref. WSM18-20: Alterations to the roof and surroundings of an existing stormwater reservoir to serve as waste reception area for recyclable material. Submitted on 28.05.2021.
6. 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.
7. 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

8. This application is a request for variation to the current permit to:
 - establish a reception area for recyclable waste originating mainly from domestic sources;
 - set up a small-scale Material Recovery Facility (MRF);
 - introduce a baling operation for the sorted material.
9. The reception area shall be located on the Zwejra reservoir immediately off the south gate of the ECOHIVE Complex. To this end, the Malta North boundary is being extended and amended as per drawing in Annex 06.
10. The MRF shall be located within the space, or rather volume, previously designated Compost Shed within the AD Plant at Malta North. The existing infrastructure will be cladded. A small portion of the shed, the left corner, remain dedicated to the storage of digestate (as produced by the AD process). That said, the two areas (MRF and Digestate Storage) shall be separated by means of an erected wall; therefore, this digestate storage shall not be affected by this variation.
11. The baled material from the sorting operation shall be stored in the same yard utilised by the Malta North plant.
12. The fractions that MRF shall recover are the following: Paper and Cardboard, Plastic Film, Pet Clear, PET Colour, HDPE, Ferrous and Non-Ferrous metal.
13. Sorting shall take place via a combination of manual sorting and Near-Infrared Machines. Sorted material shall be baled and temporary stored pending collection for recovery.
14. Non-target material ends up as rejects; this waste type is also baled, stored, and then exported for recovery.
15. This investment shall help WasteServ increase the rate and quality of the recovered recyclables. The latter shall ensure that the material is attractive to the market, thus making it sellable.
16. The application includes the following documentation as annexes:

Annex 01:	IPPC Application Forms
Annex 02:	Company Registration Certificate
Annex 03:	Existing Permits
Annex 04:	PA Applications
Annex 05:	Improvement Programme Update

Annex 06:	Site Plans
Annex 07:	Engineering Drawing
Annex 08:	Specifications
Annex 09:	Process Flow and Emissions Inventory
Annex 10:	Power Consumption
Annex 11:	Maintenance Manuals
Annex 12:	BAT Comparison
Annex 13:	EMS
Annex 14:	EMP
Annex 15:	ERP
Annex 16:	TCP
Annex 17:	Outline Decommissioning Plan

3. Technical Details

17. The MRF Facility shall consists of the following machinery:

- Bag Opener 1700 + buffer
- Presorting – air classifier with light-fraction separator and dedusting unit
- Ballistic Separator
- Magnetic Separator
- Eddy Current Separator
- Optical Separator 3D 2800
- Optical Separator ternary 3D 2800
- Sorting Platform
- Temporary storage boxes with conveyors
- Chain conveyor leading to baler 27000 x 1500mm
- Belt conveyors
- Belt conveyors long
- Air compressor
- Horizontal Baler
- Mobile equipment such as: material handler, telehandler, fork-lifter, hook-loader trucks, and wheel shovel
- Open top containers

Refer to Annex 08 for Specifications and Annex 07 for Engineering Drawing.

18. A Dedusting Unit shall be in place to extract dust. Also, air extracted from the inside of the shed shall pass through HEPA Filters.

Section	Relevant Information
<p>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.</p>	<p>This project shall be located within an area already earmarked for waste management activity.</p> <p>The waste Reception Area shall be located on top of what is known as Zwejra Reservoir. To protect the surface of the structure from the abrasion exerted by the wheel loaders that will be operated on it, an impermeable concrete sacrificial layer shall be laid on top of it. Surface runoff shall be directed to the reservoir underneath the reception area.</p> <p>The MRF shall be located within the boundary of the Malta North Plant, specifically within the area previously known as the Compost Shed. The flooring is made of concrete which is impermeable. Surface runoff shall be directed to underground reservoirs and used as process water. Any spill shall be contained within the premises. Spill kits shall be made available to be used in case of spill.</p>
<p>C2.1 Environmental Management System Provide details of any changes to environmental management techniques resulting from your proposals.</p>	<p>EMS shall be updated to include new procedures related to this new MRF (refer to Annex 13).</p> <p>The ERP is in the process of being updated to capture this new operation.</p>
<p>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.</p>	<p>Techniques used to prevent and reduce waste and emissions are described in Annex 12 – BAT Comparison.</p>
<p>C2.2.3 Submit a flow diagram summarising the proposed installation activities and indicating the changes.</p>	<p>Process Flow Diagram is detailed in Annex 09. Maximum throughput of the MRF is 100 t/day.</p>

C2.2.4 Include a comparison of the proposed changes to the activities with relevant BAT conclusions published by the European Commission, where these have been published	Refer to Annex 12 – BAT Comparison.
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.
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.	Wasteserv shall be sourcing a towable fuel container equipped with a nozzle to be used for the re-fuelling of vehicles. The tank itself shall be of the double skin type with an integrated bounding of 110%.
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.	Only heating / cooling units of a domestic capacity shall be used in the MRF.
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).	Total power consumption for the MRF is approximately 439.35 kWh. Refer to Annex 10 for details.

<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 change is not expected to introduce any significant change in terms of water consumption.</p>
<p>C2.8 Risk Assessment Describe any changes to the documented system used to identify, assess, and minimise the environmental risks and hazards of accidents and their consequences. 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 15 includes Fire Safety Report for this new project. ERP is in the process of being updated to capture this new operation.</p>
<p>C2.9 Training 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>Training on operations shall be provided to all of the personnel involved in the MRF project.</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 MRF does not introduce any significant features that would impact the outline decommissioning plan. On eventual decommissioning, the MRF introduced would largely result in generation of scrap metal, the belts of the actual conveyors, WEEE and minimal oils and/or greased. These waste streams can easily be diverted to authorised waste management facilities in Malta or abroad.</p> <p>For details pertaining to the Outline Decommissioning, kindly 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 permit IP 0003/19 already permits the acceptance of plastic film (15 01 02), mixed paper and cardboard (15 01 01 & 20 01 01), ferrous and non-ferrous metal (15 01 04 & 20 01 40) and Plastics (20 01 39) including Pet Clear, PET Colour, and HDPE.</p>
<p>C3.1.2</p> <p>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>Received grey/green bag shall be stored in the Reception Area on the Zwejra Reservoir. The concrete sacrificial layer, which shall be laid on top of the reservoir, shall be impermeable. Surface runoff shall be directed to the reservoir underneath the reception area.</p> <p>The storage capacity of the reception area is 360 tonnes at normal operations. During breakdown this amount may be surpassed.</p> <p>Waste is loaded into open top containers by means of a wheel shovel and transferred to the MRF. At the MRF, there shall only be a sufficient buffer (only) to ensure a constant waste input. The flooring of the MRF is made of concrete which is impermeable. Surface runoff shall be directed to the reservoir underneath the shed. Any spill shall be contained within the premises. Spill kits shall be made available to be used in case of spill.</p>

	<p>With regards the storage capacity at Malta North's yard will be allocated as follows:</p> <table border="1"> <thead> <tr> <th>Material</th><th>Storage capacity (t)</th></tr> </thead> <tbody> <tr> <td>Cardboard</td><td>520</td></tr> <tr> <td>Mixed Paper</td><td>430.4</td></tr> <tr> <td>Pet Clear</td><td>130.5</td></tr> <tr> <td>PET Colour</td><td>49.5</td></tr> <tr> <td>HDPE</td><td>43.2</td></tr> <tr> <td>Ferrous metal</td><td>159.6</td></tr> <tr> <td>Aluminium</td><td>15</td></tr> <tr> <td>RDF</td><td>975.8</td></tr> <tr> <td>Total</td><td>2324</td></tr> </tbody> </table> <p>As regards security, the provisions currently in place at ECOHIVE shall apply. The area shall be covered by security personnel. Patrols shall include the new areas introduced.</p>	Material	Storage capacity (t)	Cardboard	520	Mixed Paper	430.4	Pet Clear	130.5	PET Colour	49.5	HDPE	43.2	Ferrous metal	159.6	Aluminium	15	RDF	975.8	Total	2324
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<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 is 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>The MRF will be equipped with a dedusting unit, the emission level following filtration is $\leq 5 \text{ mg/Nm}^3$.</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>The EMP shall be amended to capture odour monitoring.</p>

<p>C3.9 Noise Describe:</p> <p>C3.9.1: The main sources of noise and vibration (including infrequent sources) of the new proposal.</p> <p>C3.9.2: The proposed techniques and measures for control of noise.</p> <p>C3.9.3: The nearest noise sensitive locations and distance away from the site (a site map may be submitted for this purpose); and</p> <p>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 MRF, a marginal increase in noise is expected given that the line comprises various moving parts. That said, operations are enclosed indoors in the shed, with the building fabric and doors / shutters limiting noise propagation. Through proper maintenance, the lines shall be kept in good working condition thus avoiding noise generated through unnecessary vibration.</p> <p>The EMP (refer to Annex 14) shall be amended to capture noise monitoring.</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; 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 EMP shall be amended to capture the following:</p> <ul style="list-style-type: none"> • Dust • Noise (expected to be minimal) • Odour (expected to be minimal or negligible) <p>Wasteserv is already working on the procurement necessary to engage contractor which will assist with the updating of the EMP.</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>The waste in consideration is the grey / green bag, and as such this waste is not expected to create odour nuisance.</p> <p>The envisaged operations are no expected to increase water consumption.</p> <p>The flooring of the Reception Area is impermeable. Surface runoff from the Reception Area shall be collected and stored in the Zwejra reservoir, and thereafter discharged as per water discharge permit.</p> <p>At the MRF, the flooring is impermeable. Surface water is collected in an underground reservoir and thereafter recirculated as process water in the AD process. Any spill shall be contained within the premises. Spill kits shall be located at strategic points in the plant.</p> <p>With respect to air emissions, a dedusting unit shall be in place at the MRF to abate dust emissions.</p> <p>With respect to noise, operations at the MRF are enclosed indoors in the shed with the building fabric and doors / shutters limiting noise propagation. Through proper maintenance, the lines shall be kept in good working condition thus avoiding noise generated through unnecessary vibration.</p> <p>Monitoring results shall provide sufficient data to confirm that transboundary effect (if any) is minimal.</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.</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>Additional Monitoring over and above current regime → € 8,000 per annum.</p> <p>Clearing of all wastes → € 2,000.</p> <p>Dismantling of MRF → 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>
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Annex 01: IPPC Application Forms

Annex 02: Company Registration Certificate

Annex 03: Existing Permits

Annex 04: PA Applications

Annex 05: Improvement Programme (Updated)

Annex 06: Site Plan

Annex 07: Engineering Drawing

Annex 08: Specifications

Annex 09: Process Flow & Emissions inventory

Annex 10: Power consumption

Annex 11: Maintenance Manuals

Annex 12: BAT Comparison

Annex 13: EMS

Annex 14: EMP

Annex 15: ERP

Annex 16: TCP

Annex 17: Outline decommissioning