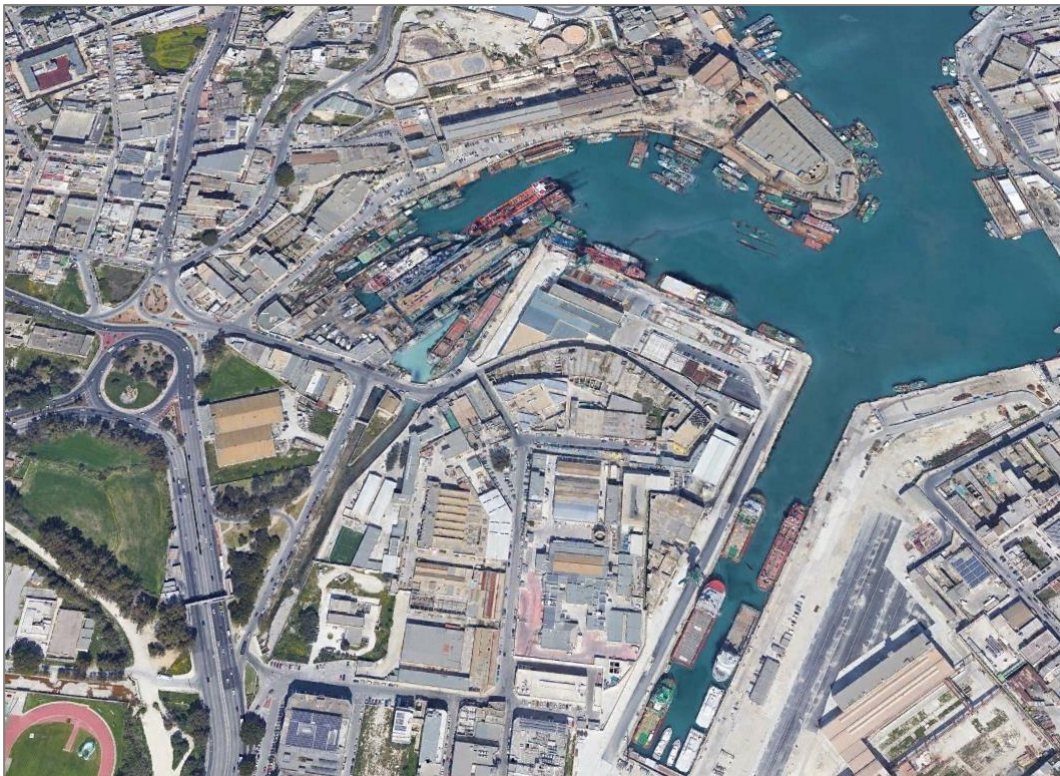


MARSA THERMAL TREATMENT FACILITY

**Application for Variation of IPPC permit
IP 0004/07/C to include a Dual Fuel Burner**



1. Introduction and Context

1. The Marsa Thermal Treatment Facility (MTTF) consists of a waste management facility originally designed for the treatment of abattoir wastes, that was eventually adapted to treat a specific range of clinical and other hazardous wastes. The facility currently includes the following specified activities (or directly associated activities as defined under the IPPC regulations) as specified under IP 0004/07/C:

- Incinerator or waste incineration plant from the receipt, temporary storage and incineration of specified wastes, together with the flue-gas treatment, and temporary storage on site of residues generated;
- Waste heat recovery boiler and economiser, for heat recovery;
- Diesel tank farm, to store fuel for on-site use;
- Blood coagulator for the sterilisation of blood, and separation of blood coagulum from water;
- Wastewater treatment plant, for treatment of waste waters on site;
- Autoclave intended for treatment of animal by-products received on site – temporary not functional, pending repairs; and
- Diesel generator to generate electric power in case of electricity failure.

The above facilities are described in previous IPPC applications and in the Environmental Impact Statement, which are to be considered in conjunction with this application for renewal is based.

2. This plant was first approved in January 2006 by approval of development permit PA 2201/01, 'to install an incineration unit and adjacent cold store within incineration site at Public Abattoir to meet E.U standards'; the IPPC permit IP 0004/07 allowed its operation in October 2007. Additional permits on site included:

- PA 3201/07 for stores and laboratory, decided concurrently with PA 2201/01;
- PA 2585/13 for 'construction of an autoclave as an ancillary to the MTTF' decided in August 2014;

The operation of the autoclave was permitted via the issue of IP 0004/07/B in April 2016, which also considered the variation in terms of change in site boundary, variation to the list of permitted wastes, waste delivery times, and waste acceptance procedures.

2. Scope of Application & Non-Technical Summary

3. This application is a request for variation to the current permit to introduce the operation of a dual fuel burner. The burner and associated ancillaries shall enable the ignition of both heating fuel oil and tallow generated from the Autoclaving process.
4. The utilisation of tallow as a fuel is in line with WasteServ's tagline 'Creating Resources from Waste' and is consistent with the Circular Economy concept. From a financial perspective, the use of tallow as fuel reduces the expense for traditional fuel. In fact, it is expected that WasteServ is to save €228,000 in heating gas oil costs annually; this is equivalent to 367,324.46 litres of heating gas oil annually (refer to Annex 13).
5. The application for variation 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:	Specifications & Drawings
Annex 07:	Process Flow Diagram
Annex 08:	Maintenance Plan
Annex 09:	BAT Comparison
Annex 10:	ERP
Annex 11:	Permitted EWC Codes
Annex 12:	Decommissioning Instructions
Annex 13:	Fuel Savings
6. As a side note on the Improvement Programme, the current IPPC permit (revision C) was granted on 31.05.2021 and thus a number of items are still within the allocated implementation time range.

3. Technical Details

7. The dual burner system is made up of the following elements:

- Oil pumping unit;
- Filtration unit;
- Electrical heater;
- Automation cabinet;
- Safety and control equipment;
- Oil gun (lance).

Refer to Annex 06 for specifications and drawings of the dual burner system.

8. Tallow is pumped, via heated pipes, from the silos on the TTF lower area to a buffer tank situated in the incinerator plant room on the upper level. From the buffer tank, tallow is diverted to the 'skid' which in essence controls the feeding of fuel to the lance. The 'skid' is equipped with superheaters, pumps and filtration and it is this instrumentation which controls the atomisation of fuel off the lance. From the 'skid' the user can choose between injecting tallow or heating fuel oil.

9. Maximum tallow use / ignition shall be 2,000 kg per day.
The design tallow flowrate is 470 kg/h.

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

Section	Relevant Information
C2.1 Environmental Management System Provide details of any changes to environmental management techniques resulting from your proposals.	The QEMS system is being updated to incorporate the use of the Dual Fuel Burner. Following commissioning by contractor, a procedure shall be drafted to capture checks and acceptable parameter ranges, aimed at ensuring safe operation of the burner system.
C2.2.2 Proposed Activities 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.	Transfer piping and buffer tank are insulated in order to prevent and/or limit heat loss.
C2.2.3 Proposed Activities Submit a flow diagram summarising the proposed installation activities and indicating the changes.	Process Flows Diagram is detailed in Annex 07.
C2.2.5 Proposed Activities Include an outline of the main alternatives considered to the proposed technology, techniques and measures.	Given the nature of the operation involved, a dual burner system (or a variation of it) is the natural selection for such a process.
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.	Tallow shall be utilised as fuel, thus reducing the use of conventional fuel.
C2.6 Energy 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).	Energy consumption resulting from this variation is expected to be approx. a maximum total 20kW: - Fan motor protection and control - Tallow oil pump motor protection and control - VSD for pump

<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.</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.</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 10 includes an Emergency Response Plan applicable to the facility.</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 shall be provided by contractor and thereafter documented. The Management Systems Unit within WasteServ shall map the operation of the dual burner into a procedure.</p>
<p>C2.10 Cessation 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 Dual Fuel Burner does not introduce any significant features that would impact the outline decommissioning plan. On eventual decommissioning, the infrastructure introduced would largely result in the generation of: scrap metal, insulation, some WEEE components and residue from cleaning. All waste types can be diverted to authorised facilities locally (WasteServ's facilities included) or abroad.</p>

<p>C3.1.1 Waste 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>No waste (output) shall be generated as a result of the use of the dual fuel burner. Bottom Ash, Fly Ash and Boiler Ash will continue to be generated but these waste streams are the result of the incineration itself, not the burner type.</p>
<p>C3.1.2 Waste 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>Following the rendering process, tallow is stored in silos. The silos are equipped with a bund. Transfer of tallow from the silos to the kiln shall take place in an enclosed system, thus eliminating manual handling (consequently reducing possibility of spill). SCADA shall be used to control the process and shall alert / prompt the user if action is needed. The system shall only be operated by trained personnel.</p> <p>System is depicted in the site plan attached (refer to Annex 05).</p>
<p>C3.6 Emissions to Air Identify if there may be any changes in emissions of substances to air.</p> <p>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.</p> <p>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>There shall be no air emissions for the system. Heating of tallow shall be done via electric heaters, thus there is no combustion and consequently no air emissions.</p>

<p>C3.7 Odour emissions Identify if there may be changes in emissions of odour.</p> <p>If any are identified, submit details of the main sources of odour, and the proposed techniques and measures for control of odour.</p>	<p>Transfer of tallow from the silos to the kiln shall take place in an enclosed system, thus eliminating odour.</p>
<p>C3.9 Noise 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>A possible source for noise and vibration are the pumps needed to transfer the tallow from the silos to the kiln. Given that the tallow shall be heated, its viscosity shall decrease, thus pumps used shall be of a regular size with limited potential for noise.</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: C3.10.1: The location of each proposed monitoring point (plotted on a suitably-labelled block plan of the site); C3.10.2: The substances (in each environmental medium) which are proposed to be monitored; 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; C3.10.5: The proposed procedure for evaluation of the results.</p>	<p>It is not deemed that the introduction of the dual burner and the utilisation of tallow as fuel will give rise to emissions. In fact, tallow shall emit less SO_x gases given it has lower sulphur content than regular heating fuel oil. Air emissions shall continue to be monitored (continuous and periodically) as per current regime – refer to Annex 09 BAT Comparison. As regards odour, the current programme is, and shall be kept, in place until WasteServ develops the new OMP.</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>Tallow contains half of the sulphur content found in heating gas oil. Therefore, its use as alternative fuel means less potential for emissions. This is apart from the indirect benefit of reducing the amount of convention fuel used.</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 foreseen.</p>
<p>C9.1 Expenditure plan 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 → € 75,000 per annum (already captured through present regime) Clearing of instrumentation → € 1000 Possible Cleaning resulting from a spill→ through personnel on site (captured through personnel pay)</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: Specifications & Drawings

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