Project Description Statement

Development of a Multi-Material Recovery Facility at Hal Far.

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Cover image from Google Earth (2017)

Introduction

1. Wasteserv Malta Ltd. is launching the process for submission of a development permit application to develop a Multi Materials Recovery Facility, with the objective of improving waste management capacity in terms of deviating recoverable materials away from landfill, in line with waste management targets emanating from the Waste Framework Directive. The proposal affects the site area indicated in Plan 1, which is immediately adjacent to the Civic Amenity site approved by PA5754/04 and PA 4645/07.

2. The limited void space available at the Ghallis non-hazardous landfill is the most significant waste management issue at the national level. This facility is the only disposal option – barring export at a prohibitive cost – for non-hazardous waste streams where diversion to recovery or recycling is not an option due to the lack of capacity in terms of infrastructure. Remaining approved landfill void space as at March 2017 is estimated[1] at 1,000,000m^3. The remaining landfill void space is expected to be filled rapidly, given current waste deposition rates (an average of 21,500 tonnes per month during 2016).

3. This proposal consists of a facility intended to accept a selected set of segregated waste streams where the current final option remains disposal at landfill. The processes performed at this facility are directed towards segregating the collected materials, carrying out some limited pre-treatment where essential, packaging, and dispatch for export. This proposal also considers other waste streams such as tyres, to optimise the handling of these materials in terms of use of space and efficiency.

4. In 2016 the European Commission adopted an ambitious **Circular Economy Package,** which includes measures that will help stimulate Europe's transition towards a circular economy; such measures include targets directed to reducing waste sent to landfill, and towards further recovery of these materials. The attainment of these targets – together with the need to be economical in use of landfill remaining space as described above – highlights the need for such installations, in order to produce the required improvements in waste management.

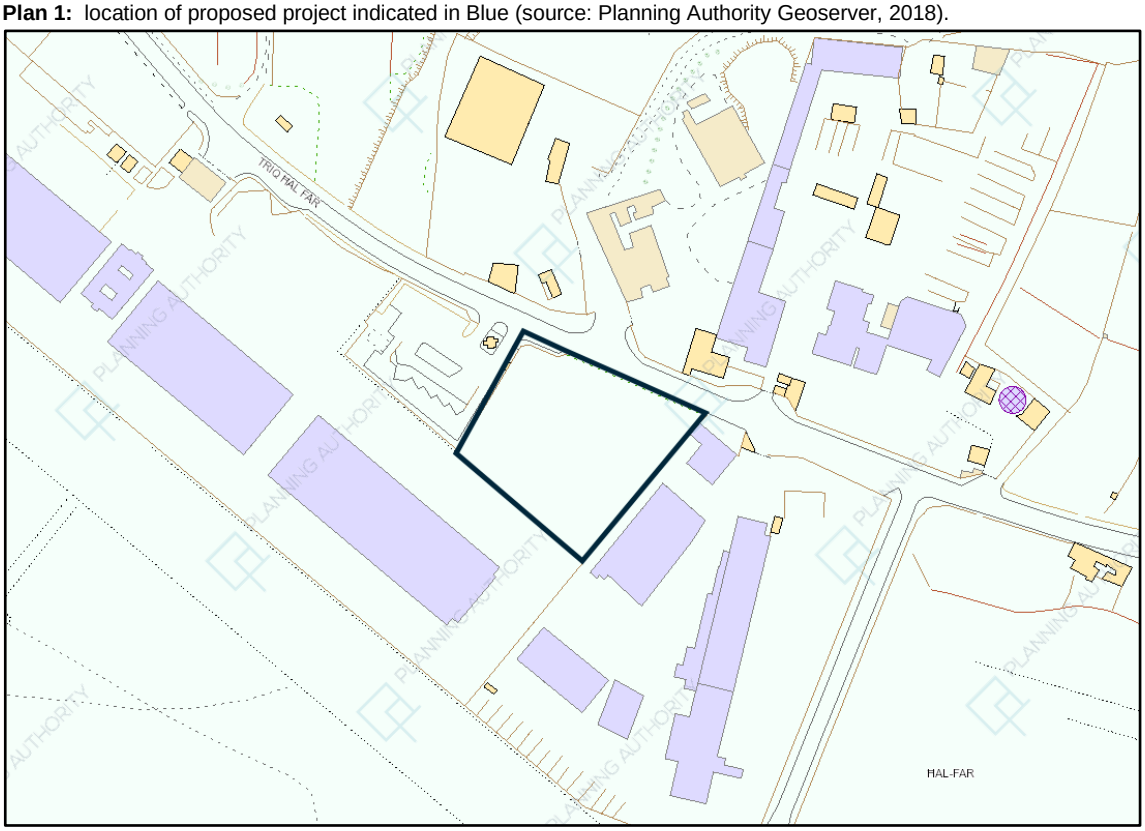
5. The development of this proposal has included an evaluation of waste materials that are currently being sent to landfill. Specific waste streams were selected from this list, to direct the development of this project, to maximise the potential for diversion to landfill. This process is described further in the following sections.

[1] This estimate subtracts the approximate volume occupied by the basal lining layers and assumes a 10% daily cover.

Site description and context

6. The proposed Multi-Materials Recovery Facility is located in the Hal Far area, immediately adjacent to the existing Hal Far Civic Amenity site managed by Wasteserv Malta Ltd. The area proposed for this development (see Plan 1) is of circa 7,800 square metres, and is located along Triq Hal Far, within an industrial cluster located along this road.

Plan 1: location of proposed project indicated in Blue (source: Planning Authority Geoserver, 2018).



7. The site is currently used by Wasteserv Malta Ltd. for the storage of wastes, primarily Waste Electrical and Electronic Equipment (WEEE) that has spilled over from the activities carried out in the Hal Far Civic Amenity site. The site is currently fenced off, and public access to the site is precluded by various security measures.

8. The following development permit applications had been filed with the Planning Authority (or MEPA):

   i. PA 7238/03 - *Site for civic amenity facility*, which was granted but not developed;
   ii. PA 5754/04 - *Proposed civic amenity facility (Waste Management),* which was granted but not developed;
   iii. PA 5960/16 - *Sanctioning of existing concrete hard standing and construction of proposed (WEEE) Transfer Station*, which was submitted after the issue of EC 00039/16 by the Planning Authority for *Development without permit consisting of the levelling of part of the area with concrete, placing of Waste Electrical & Electronic Equipment (WEEE), placing of containers and heavy vehicles, depositing of franka stones, iron and other waste material.* This application was later withdrawn.

9. The immediate proximity of the site is surrounded by the following industrial activities:

   i. The Hal Far Civic Amenity site, which is immediately adjacent on the western boundary;
   ii. The Hal Far Government Groupage complex which is located to the west and south of the site;
   iii. The Hal Far drag racing area further south of the groupage complex, and separating this area from the Hal Far Industrial Area;
   iv. A plant for the manufacture of concrete products (batching plant), including precast prestressed concrete to the east (Schembri & Son Ltd.); and
   v. An industrial cluster to the north east (across Triq Hal Far) which consists of plant for the manufacture of asphalt and concrete products (Asfaltar Ltd.) and yard facilities associated with industrial development.

10. Image 1 (overleaf) provides an aerial photograph of the site proposed for this development. This area is located in the south west of Malta, and is surrounded by the following land uses:

   i. The town of Birzebbuga, which is located over 800m to the northeast;
   ii. The Hal Far industrial area circa 200m to the south;
   iii. The cliffs circa 800m to the south of the industrial area; and
   iv. The Freeport Terminals to the east circa 1.6km away.

11. The areas between the various land uses highlighted above, consist of agricultural fields bounded by rubble walls. The closest areas of natural value in the area are the cliff top garrigue habitats and Wied Znuber that are located on the other side of the industrial estate, that are considered a Special Area of conservation as per Habitats Directive 92/43/EEC.

Image 1: satellite imagery of proposed project indicated in Blue (source: Google Earth, 2017).

Project Description and Rationale

12. The proposed Multi Materials Recovery Facility consists of the following areas:

    i. A **reception area** accessed via the existing civic amenity site, from where wastes will enter the site;
    ii. Designated **processing areas**, where wastes entering the site are treated to facilitate storage, or where wastes leaving the site are treated to ensure conformity with the specifications of destination material or energy recovery facilities;
    iii. **Segregated storage areas**, where the wastes are kept on site until exportable volumes are accumulated;
    iv. **Office space**; and
    v. **Container stuffing, storage and dispatch** areas.

    Th site is designed to optimise flows of materials from the point of entry to the unloading points, and from there to the processing and packaging areas. There are vertical connections to the waste storage areas, which are used to accumulate wastes to those volumes required for export to overseas facilities.

13. **Site access:** It is being proposed that the site be accessed from two entrances: an entrance for waste carrier vehicles and container hauliers via the existing CA site, and a separate access for passenger vehicles from Triq Hal Far. The exit for waste carrier vehicles and container hauliers shall be into Triq Hal Far. Weighbridge facilities will be available at entrance and exit, to measure and document the throughput of wastes on the site.

14. **Waste unloading and packaging:** waste unloading areas for separated wastes will be available in the central area of the site. The range of wastes accepted will either (a) be directed towards packaging prior to export, or (b) be subjected to limited pre-treatment, as a volume reduction measure to facilitate packaging of the sorted material. The unloading areas are immediately adjacent to buildings assigned for use as waste packaging areas, where incoming wastes are loaded onto pallets or baled. Other areas are assigned as treatment areas; it should be noted that the only treatment being considered within this facility shall be either basic dismantling or shredding or a limited range of wastes.

15. **Waste storage:** waste treatment and packaging areas are connected to the storage areas via vertical connections. It is proposed that baled or palletised wastes are carried by electric forklift to the three sets of industrial lifts present on site, to be carried to the storage areas indicated on plan. All wastes have their designated storage area; the rationale for storage of wastes is based on the requirement that all wastes stored underground are not flammable. Flammable wastes are stored in areas above ground. Quantities managed annually shall not exceed the amounts presented in table 1. Storage capacity shall be as follows:

    - **Basement:** storage space for 2216 pallets at maximum capacity, which shall be used for storage of gypsum products, glass and WEEE
    - **Roof:** storage space for 2400 bales or jumbo bags, for storage of wood, tyres, textiles, polystyrene and mattresses

    All wastes are palletised or baled to facilitate transport using forklift.

16. **Range of wastes accepted**: the list of wastes being accepted is being provided in table 1, which also listed the expected throughput as extrapolated from current volumes of wastes being accepted by Wasteserv. Table 1 also indicates whether any volumes of waste will be subjected to pre-treatment prior to packaging, and if so, the nature of treatment to be applied.

17. **Rationale for range of wastes to be accepted:** the range of wastes indicated in Table 1 have been selected on the basis that these (a) either are materials which are sent to the landfill in significant quantities, or (b) are materials where facilities for recovery need to be improved to improve efficiency of handling, or where spatial organisation is an issue. The options to such a development are either:

    i. **Do nothing,** which is not consistent with current waste management objectives in terms of deviating materials away from landfill, and where current facilities (primarily the CA sites), are not designed to accumulate the wastes required for export;
    ii. **Reduce waste storage options,** which reduce the potential for export of wastes, given the difficulties imposed by the national context i.e. where Malta is isolated from mainland facilities, and where dispatch of materials is constrained by the logistic requirements imposed by shipping; or
    iii. **Replacement by a specialised waste management facility,** where the range of waste streams accepted would be reduced, and the facility would specialise in the treatment of limited volumes such as locally generated WEEE. Such an option, while improving the scope for some limited recycling, is hampered by the lack of economy of scale that would be required by this facility.

Table 1: list of wastes proposed for acceptance at the MMRF.

Waste	Quantity	Proposed Treatment	Comment
Bulky waste (furniture)	(see comment)	To be dismantled and treated with the wood fraction.	Significant volumes of such waste are currently accepted at the civic amenity sites. Materials that contain significant volumes of recoverable material, principally wood, will be sent here for dismantling and separation.
Wood	9,600	The option for sorting of wood fractions will be retained, if studies of throughputs of quality of wood passing through the facility indicate that this is a viable option. However, the remainder of the wood will be shredded to facilitate packaging into jumbo bags and dispatch for energy recovery. Metals will be removed via electromagnetic separation.	Wastes received here will be sorted according to quality, shredded to facilitate storage, and packed for storage pending dispatch for either material or energy recovery. Preliminary indications are that the scope for material recovery is limited, but this option will be considered further depending on throughputs of material.
Tyres	2,200 tonnes	Cutting prior to baling.	Inclusion of this waste stream is to optimise efficiency in handling and improve quality of waste storage in terms of use of space.
Polystyrene	180 tonnes	Compressing and packaging	Although the mass is limited, the volume is appreciable. Some limited source segregated polystyrene is collected at present, but this is not a systematic process. Space is required for the accumulation of enough wastes for dispatch of this material for recycling.
Gypsum products	1000 tons	Dismantling and cutting prior to palletising.	Inclusion of this waste stream is to optimise efficiency in handling and improve quality of waste storage in terms of use of space.
Mattresses	360 tonnes	Shredding prior to packaging in jumbo bags	Inclusion of this waste stream is to optimise efficiency in handling and improve quality of waste storage in terms of use of space, and diversion from landfill.
Textiles	300 tonnes	Packaging	Inclusion of this waste stream is to optimise efficiency in handling and improve quality of waste storage in terms of use of space and diversion from landfill.
Glass	180 tonnes	Packaging	Inclusion of this waste stream is to optimise efficiency in handling and improve quality of waste storage in terms of use of space and diversion from landfill.
WEEE from civic amenity sites	45 tonnes	Packaging	The scope of inclusion of this waste stream is to provide a limited storage volume, that will allow accumulation of sufficient material for export.

18. **Future options**: it is expected that demand for waste management operations will shift in the future, in response to future waste generation trends, or in response to regulatory effort. Data collection exercises commissioned by Wasteserv with the scope of refining current understanding of the composition of wastes generated locally may indicate other waste streams where further segregation of wastes, or further treatment operations, may be feasible.

    Depending on future circumstances, it may be desirable to reallocate space (in terms of reception, treatment or packaging facilities) to other waste streams that may arise. Alternatively, there may be the scope for inclusion of further waste treatment operations on site. The process of design of this facility has considered such scenarios, and as far as reasonable possible, have attempted to facilitate such eventual reallocation of space.

    It is understood that such reallocation of space, or inclusion of further waste streams, would require reassessment under the EIA regulations, depending on the scale and nature of such a change. Furthermore, such a change would require an update of environmental permits issued on site.

19. **Rationale for site selection:** the selection of this site was based on two primary considerations, mainly (a) the preference to consolidate such operations with existing waste management operations, and (b) facilitating the potential for export. In this regard, the following options may be considered:

    i. **Sant Antnin, Marsascala,** where space limitations constrain the scope for potential expansion of the existing facility, and where the Government has already indicated its policy of relocating existing facilities away from this area;
    ii. **The Maghtab Environmental Complex,** where future expansion through the inclusion of other facilities is constrained by the need to make use of currently undisturbed land, and where priority for any expansion should be given with facilities that are closely associated with landfill operations.

    In this regard, the Hal Far site is preferred given that the location would (a) serve as a hub for collection of recoverable materials originating in the southern part of the island, and (b) be strategically located close to the Freeport, facilitating transport of the material for export.
    While it is recognised that the eventual operation of the planned waste to energy facility may require transport of wastes from this facility to the waste-to-energy location, the function of this facility may offer the option of streamlining transportation needs of materials collected in the south by optimising wastes collection in terms of volume reduction, reducing the number of transits of wastes to the waste-to-energy facility.

20. **Employment**: it is envisaged that the site shall require a complement of circa 10 – 15 members of staff.

21. **Storm and surface waters:** waters generated on site will be collected in a reservoir of circa 300-500m3; sizing of this reservoir will be concluded in the detailed designs to ensure that capacity is well in excess of fire management requirements. This water can be used as second-class water for washing, irrigation and cleaning, but such use will be limited by the use of level switches to ensure that the site will always have the minimum required water for fire suppression.

22. **Fire management**: fire detection systems shall be deployed on site to ensure that fires are detected at an early stage. Fire sprinkler systems and hydrants will also be available to allow the appropriate response in terms of fire management. Management of waste stocks, proper storage of materials, and appropriate management practices will be essential to ensure proper fire management.

23. **Services on site**: no water, foul water sewers or energy supplies exist presently on site. However, it is envisaged that these will be required as services to the site as follows:

    i. **Water**: potable water will be used for kitchen, first aid and in toilet and shower rooms and other staff areas. The use of second class water will be encouraged given that the extent of site area which will result in a lot of rain water catchment.
    ii. **Electricity**: this shall be the main energy supply on site and shall power various equipment such as shredders, balers etc. Electricity shall also be used to power artificial lighting, to provide emergency lighting, and the fire pump. It shall be used for to power HVAC systems on site.as well as other small power as shall be required. Electricity shall be from the national grid, and possibly from on-site PV units. It is most likely that a substation would be required on site to provide the required power on site.
    iii. **Diesel**: this shall be used to power any onsite standby generator and the fire pump, should this be diesel electric variant. It is highly unlikely that both these units will require more than a 1000ltr of diesel on site, possibly stored within their built-in tanks and associated bunding.
    iv. **Sewers**: any waste water from the offices and staff facilities will be directed towards the public sewers using gravity if levels allow or using a cess pit to transfer waste water to the government sewers. If no sewers exist in the nearby road way, waste water shall be stored in a cess pit and collected by WSC at required intervals.

Process of Construction

24. Prior to any works on site related to this project, the site is being cleared of accumulated wastes (mainly WEEE), by contracting waste management operators to package the wastes on site for removal from site to a permitted facility. No works will commence before this process has been completed to the satisfaction of the competent authorities.

25. Access to the site will be through the existing gate, until the construction of the alternative entrances and exits will be completed. No other areas will be involved in the construction processes as detailed below:

    i. **Earthworks**: removal of existing surfaces, soils, and excavation of rock to the required levels;
    ii. **Civil works**: construction of structures in comprising slabs columns and footings in in-situ reinforced concrete, precast and prestressed concrete elements, steel structures, walls in hollow concrete blocks and limestone, as well as waterproofing;
    iii. **Building services**: installation of foul water system, mains water distribution, electrical distribution, firefighting systems, lighting, security systems, lifts etc
    iv. **Internal and external finishing works**: installation of external and internal apertures, cladding systems, flooring, wall and ceiling finishes, gypsum works, sanitary ware, signage etc., and
    v. **External landscaping and paving works**: laying of hardstanding, top soil and planting of shrubs, paving works, setting of concrete kerbs and line marking.

    It is expected that duration of the works shall be of not more than 24 months.

26. The main volume of waste to be generated is the waste generated during excavation, which will be disposed of appropriately in a permitted facility, and all materials will be transported in covered trucks (tarpaulins) using main arterial routes.

27. The wastes to be generated by the project are those typical of construction works, as it is projected that all other wastes on site will have been removed as described above. Wastes generated during works will be accumulated in designated storage areas and disposed of in permitted facilities. All wastes sent off site will be carried in an appropriate manner in vehicles licensed for such use as per the provisions of LN 106 of 2007. The contractor will be committed to maximise reuse of materials and minimise use of landfill. Waste management will be aimed at minimising the waste generated by the construction and maximising the recycling/reuse of materials.

Environmental Risks, Impacts & Mitigation

28. An environmental impact may be positive, neutral or negative, depending on the effect a causative agent would have on the environment. Impacts from this project can arise from either of two stages:

    A. the *construction stage*, and
    B. the *operational stage*, which is that where facility will be operated

29. In general terms, mitigation measures that are applicable to the construction phase are those that are contemplated in the Environmental Management Construction Site regulations (S.L. 552.09, as amended). Mitigation measures that are applicable to the operational phase are those that may be applicable under the Best Available Techniques (BAT) Reference Document for Waste Treatment (2007) as published by the Joint Research Centre of the EU IPPC Bureau, or as may finally be approved.

30. The following are the environmental risks (see table 2) associated with the construction phase.

Table 2: environmental risks and mitigation measures during construction phase

Risk	Mitigation measure
Generation of dust	• Using water or pre-soaking to control dust generation; • Removing accumulations of dust on site, and on roads accessing the site; • Preventing dust and particulates from coming into contact with storm waters • Using barriers and containment over areas where sanding or blasting may be applied • Using blasting and sanding equipment that is equipped with appropriate dust extraction and recovery
Contamination of water	Management of any storm waters accumulating on site during works; avoiding all off-site discharges.
Noise	Avoidance of works that involve generation of noise during periods indicated within SL 552.09.
Waste generation (see also point 27 above)	• Segregation of wastes generated, and storage in designated areas prior to disposal • Transport of waste off site as soon as possible, utilising waste carriers licensed under LN 106/07 • Disposal of wastes at licensed facilities
Traffic & Logistics	Keep traffic volumes to the minimum requirement; avoid peak traffic hours as far as reasonable possible.

31. The following are the environmental risks (see table 3) associated with the operational phase.

Table 3: environmental risks and mitigation measures during operational phase

Process	Risk	Mitigation measure
Operation - storage	Fire	• Fire risk assessments • Clear storage plans and layout • Segregation of flammable materials in areas where containment and response are facilitated • Installation and maintenance of fire detection and response infrastructure
	Loss of containment	• Avoidance of liquid wastes, barring those generated during maintenance of on-site equipment • Shrink wrapping of baled or palletised wastes that may generate dusts, e.g. gypsum
	Contamination of water	Isolate all storage areas from water ingress. See also entry below for all processes.
	Emissions to air	Wastes to be stored in proper containment, either shrink wrapped or jumbo bags.
Operation – Shredding activities	Dust generation	Operation of shredder as per Best Available Technique, particularly in terms of maintaining negative pressure in shredder area.
	Fire	Selection of shredding equipment having features promoting deflagration control, as per IPPC BAT.
	Waste generation in terms of rejects, operational wastes	• Designation and maintenance of quarantine areas for hazardous wastes discovered in incoming streams, or generated during operations • Storage of reject materials not fit for recovery, prior to disposal at an authorised facility
Operation – cutting activities, particularly gypsum	Dust generation	Cutting operations area to have negative pressure, to ensure capture of dust generated.
	Waste generation in terms of rejects, operational wastes	• Designation and maintenance of quarantine areas for hazardous wastes discovered in incoming streams, or generated during operations • Minimising scope for rejects by proper selection of materials to be sent to MMRF at other Wasteserv facilities • Storage of reject materials not fit for recovery, prior to disposal at an authorised facility • Prevent exposure of wastes to water damage through provision of appropriate cover
	Contamination of water	Isolate all storage areas from water ingress. See also entry below for all processes.
All processes	Contamination of water	• Maintenance of proper containment of all wastes, and eliminate potential exposure to rainwater by operating in covered areas • Impermeable hardstanding on site for all operational and/or traffic bearing areas, with gutters directing water flows to reservoir via an interceptor • Spill kits to collect operational spills from damaged equipment
	Noise	• Limitation of operating hours • Maintaining all equipment in enclosed structures to ensure noise abatement
	Ground contamination	Impermeable surfaces, and proper containment of all wastes on site.

32. Given that the site is distant from protected areas in the region, no impacts should result in terms of biodiversity.

33. **Cumulative impacts:** the operational risks detailed above are expected to be transient and fully reversible. Through application of mitigation, risks associated with emissions to air or water, or contamination of the ground should be negligible; risks associated with fire or with health and safety should be managed through risk assessments and management plans.

34. **Visual impact** is essentially dependent on the design of the facility; the site has already been committed through previous development applications, and consideration of image 1 confirms that the project is effectively an infill site surrounded by industrial developments. While some intensification of building mass will result through this development, the rehabilitation of a disturbed area, as well as avoidance of disturbance of other areas for the necessary waste management infrastructure, renders the scale of this impact as being limited.

35. **Environmental monitoring**: this will be required through all project phases. Monitoring requirements for the operational phase should be determined via an application for an environmental permit.