



***Terms of Reference***

FOR THE PREPARATION OF AN

***ENVIRONMENTAL IMPACT ASSESSMENT  
REPORT***

FOR

***PA/07288/19 [EA/00045/19]***

***MINING OF EX LUQA LANDFILL IN ORDER TO LOWER THE  
EXISTING LEVELS TO PREPARE SITE FOR EXTENSION OF  
INDUSTRIAL ESTATE AND NEW SPORTS FACILITIES.***

***SITE AT, LUQA PARK, TRIQ VALLETTA, LUQA***

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*January 2020*

- Note 1:** The Environment and Resources Authority (ERA) reserves the right to modify these Terms of Reference according to any relevant environmental and planning considerations that may emerge at any relevant stage of the EIA or the permit application process, as well as in the event of any changes or updates to the proposed development. ERA also reserves the right to request additional or amended studies should the findings of the EIA be insufficient to adequately inform the decision-making process or if the EIA identifies matters which should be subject to further investigation.
- Note 2:** Unless otherwise agreed with ERA, all requirements set out in these Terms of Reference are to be complied with. If there are any aspects that the consultants deem irrelevant to this study, or if at any stage the consultants discover any environmentally-relevant aspect (not included in these TORs) that needs to be studied, the consultants shall inform ERA immediately, justifying their reasoning.
- Note 3:** Difficulties, including technical difficulties and lack of information, encountered by the consultants in compiling the required information shall be made clear in the EIA. All references to published works and sources of information shall be duly acknowledged in a manner that enables tracing of the information source and verification. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the consultation period and thereafter, and for record-keeping and unhindered perusal by ERA. Any material which is based on unavailable proprietary data shall not be incorporated by reference.
- Note 4:** Any requirement for confidentiality of any section or detail of the EIA must be strongly justified and a formal request in this regard must be submitted to ERA. Should ERA grant confidentiality, alternative material that is still adequate for proper assessment, public consultation and decision-making must be provided.
- Note 5:** Agreement on method statements, and ancillary liaison with ERA, is not mandatory but is recommended. Nevertheless, ERA reserves the right to disagree with the methodology proposed, including proposed areas of influence, and with the EIA submissions in general, and to factor such disagreement in its critique of the EIA.
- Note 6:** During review of the EIA, ERA will submit comments for the consultants' consideration, as relevant. Following the consultants' response to ERA satisfaction, a revised second draft of the EIA, addressing the comments, will normally be required. This may take the form of a complete resubmission or of an Addendum detailing the revisions to the previous submissions, as deemed most expedient by ERA, taking into account continuity and traceability of the information, and overall user-friendliness vis-à-vis subsequent review, presentation, public consultation, record-keeping and decision-making. A complete resubmission will generally be required if changes are numerous or complex, whereas an Addendum may be preferred if changes are more limited.
- Note 7:** The consultants are not exonerated from obtaining any formal authorisation from ERA, and from other relevant entities, vis-à-vis any activity ancillary to the EIA (e.g. collection, sampling, capture, or waiver of access restrictions) wherever such authorisation is legally required.
- Note 8:** These Terms of Reference, and all ancillary correspondence, are issued without prejudice to ERA's position on the project. Accordingly, their issuing (even when customised to address specific project details) should not be construed as evidence in favour or against the project or any component thereof, unless the contrary is clearly stated.
- Note 9:** Wherever relevant, references to land also include the sea, and ancillary terms such as land-take, ground cover, landscape, vehicles, access roads, etc. should be interpreted accordingly.
- Note 10:** Wherever any baseline studies required by these Terms of Reference is covered by already-existing data, such data should be used in preference to unnecessary duplication of baseline studies, unless the consultants or ERA or both are of the opinion that the existing data is unavailable, incorrect, outdated, unreliable, insufficient, or otherwise inadequate for the purpose of the EIA.

An Environmental Impact Assessment (EIA) Report is to be prepared as required by the Schedule I, Category I, Section 5.0.1.1 and 5.0.1.2 of the Environmental Impact Assessment Regulations, 2017 (S.L. 549.46). The required components of the EIA are:

- i. A **Coordinated Assessment Report**, in conformity with the following Sections of these Terms of Reference. This report should assess the project in its totality;  
*[Note: The coordinated assessment should seek to analyse and integrate the main considerations emerging from the technical reports, rather than just reproducing excerpts from the reports.]*
- ii. A separate **Appendix (or Appendices)** containing all technical studies and original survey reports as prepared by the individual specialist consultants for specific topics;  
*[Note: Experts contributing to the EIA should be specifically asked to consider impact interactions and cross-cutting issues, and to communicate information between each other accordingly].*
- iii. A separate **Non-Technical Summary** of the EIA, in both the Maltese and English languages. This should have enough details for the public to understand the project and the related environmental considerations, and should be written in reader-friendly language (e.g. avoiding unnecessary technical jargon);
- iv. A **declaration of conformity** with regards to the identification of consultants and contributors, and conflict of interest, in accordance with sub-regulations 17(3) of the EIA Regulations (refer to **Appendix 1** to these Terms of Reference); and
- v. An addendum detailing the **feedback received from stakeholders, from the public, and from ERA** during the relevant consultation stages of the EIA, and how they were addressed.

Wherever relevant and appropriate, all components of the EIA should include tables and figures (e.g. maps, plans, photographs, photomontages, charts, graphs, diagrams, cross-sections) and quantifications.

The complete EIA Report (including all the above components) should be submitted as a printable digital copy (in .pdf format, with copying fully enabled throughout) and as a printed copy. Likewise, in case further revisions are to be made to the EIA Report, both a printable digital copy (in .pdf format, with copying enabled throughout) and a printed copy of the revised EIA Report, or an Addendum, is to be submitted to ERA.

Wherever any other study not forming part of the EIA is also envisaged, this is to be submitted separately from the EIA. Cross-referencing between the EIA and any such study should be clear and reasonably limited, such that both of the following considerations are duly satisfied:

1. Alerting the reader to the fact that the aspect in question is also being addressed in another parallel study; and
2. Enabling the reader to easily follow both the EIA and the other studies as stand-alone documents.

More detailed specifications are identified in the following pages.

## **1. DESCRIPTION OF THE PROPOSED DEVELOPMENT AND ITS CONTEXT**

The description of the proposal is to include the aspects outlined below, and should take into account the entire proposal and any ancillary facilities and infrastructure connected with, or arising due to, the project.

### **1.1. Justification for the Proposal**

#### **1.1.1. Objectives**

The purpose and objectives of the development and whether these are related to current legal obligations, policies or plans.

#### **1.1.2. Demand**

The current and expected requirement or demand for the proposed land uses, also explaining how the proposal will address the requirement/demand.

### **1.2. Description of the Physical Characteristics of the Project and the Land Use Requirements during Works**

The following aspects should be addressed for all phases of the project. References also include ancillary site preparation, clearing, excavation, installation of facilities, demolition/dismantling of temporary installations, and site reinstatement works, as relevant.

#### **1.2.1. General characteristics**

Description of the proposal including size, area, height/depth, volume, configuration/layout, location and proposed elevations of structures/installations, access arrangements, boundary demarcation arrangements, land use requirements, and land take of ancillary facilities (including infrastructure, storage, servicing, security etc.). The description is to be consistent with the details submitted in the relevant permit applications, throughout both the EIA process and the development permission application process.

#### **1.2.2. Operational and treatment processes**

The relevant operational and treatment processes and their main characteristics, including:

1. The nature and quantity of materials used and/or generated;
2. Depths and volumes of excavation, and indication of type of material to be excavated;
3. Types and quantities of any raw materials and primary resources to be consumed, including water, energy, stone and other resources, and measures to reduce such consumption.
4. Works methodology, including waste processing/treatment on site;
5. The source, type, quantity, composition and concentration of residues and emissions including chemicals, water, air, soil pollution, noise, vibration, light, heat, radiation etc. resulting from the proposed project; the parameters to be reported should be in line with relevant EU policy;
6. The expected total emissions, including Greenhouse Gases (GHG), and the contribution to total national GHG emission on an annual basis; and
7. Expected duration of all phases, as well as season, frequency and duration of interventions;

#### **1.2.3. Access, transportation and related infrastructure**

1. A forecast of the type, quantity and size of vehicles envisaged during each phase and their respective frequency of use, as well as an identification of the routes that vehicles will use to/from and within the site. The required arrangements should also be compared with the relevant existing situation (in terms of structural considerations, stability and state of roads, road width and gradient, turning circles and junctions, type of surfacing, and other physical or environmental constraints, etc). Interventions that would need to be carried out to accommodate the required vehicles (e.g. new or altered access roads), and sites/buildings/structures/features likely to be affected as a result, should be identified accordingly.
2. Facilities for the storage, parking, on-site servicing, loading/unloading of equipment, vehicles and other machinery.

#### 1.2.4. Water, sewerage, runoff management, energy, and ancillary infrastructure

1. Estimates of water management specifications of the development and the identification of the sources of water to be used, including the following:
  - The features and processes of the proposed works and ancillary facilities which consume water, including indication of the sources of water (e.g. second-class water, public potable water mains, on-site production), and estimates of water consumption and runoff/effluent generation during works; and
  - Water-saving measures (e.g. treatment and reuse of waste water), where applicable, and details on the water use management.
2. Estimates of the energy-related specifications, including:
  - The features and processes of the proposed works and ancillary facilities which consume energy, including indication of energy sources, and estimates of consumption during operation. The analysis should consider, as relevant, the connected load (in MW or MVA), the overall power factor, the annual MWh split in terms of end-use (lighting, climate cooling/heating/ventilation, plant etc.) which reflects the expected use of the facilities, and
  - The expected energy performance of the proposal, including integration of low/zero-carbon technologies to meet energy needs; avoidance of features which increase energy consumption; and energy efficiency measures.
3. Infrastructural services and utilities related to water and power supplies, sewerage, and runoff management, and ancillary works (e.g. trenches, tunnels, culverts, switching/transformer stations, pump houses, inspection chambers).
4. The extent to which the project can realistically be self-sufficient with regard to its energy and water needs, through appropriate measures such as the efficient use of energy and water, reuse of treated wastewater, technologies that reduce energy consumption, and the integration of alternative energy sources.

#### 1.2.5. Waste management

1. A sufficiently detailed indication of the waste management implications likely to arise from the project, predominantly the excavation of the old dumpsite and any other excavation waste, subsequent treatment of the waste material present on site, and also any waste generated by ancillary facilities on site and wastes which may arise from accidental spillages and leakages from repair works. Wastes should be subdivided according to the relevant project phases.
2. The following information is to be provided for each waste stream, as relevant to each phase and activity:
  - Identification of processes or activities, including any waste cleaning, that would result in waste generation;
  - European Waste Catalogue Codes for each waste stream, as per relevant legislation ([Commission Decision 2000/532/EC](#));
  - The projected quantities and rate of generation for each type of waste;
  - Information on the treatment of the waste;
  - Information on the waste handling and storage, on site as well as off site; and
  - The method of transportation and frequency.

This information should be presented in table format as follows, and should also include cross-references to the relevant regulations, particularly The Waste Regulations (S.L. 549.63) and/or Waste Management (Activity Registration) Regulations (S.L. 549.45):

Phase	Type of waste	EWC Code	Hazardous Properties / Hazardous Statements	Activity (e.g. sanding, scraping, power washing etc.)	Estimated quantities	Handling and storage	Final destination / disposal location	Transportation method and frequency

Layout plans (to scale) clearly showing all relevant waste management infrastructure and related facilities, and any waste storage areas.

Information should be provided both for the old waste being excavated as well as to the “new” waste streams which will be generated through the project. Information provided should clearly indicate to which waste it refers to.

In addition, the study should investigate any potential risk of ongoing subterranean fires and any fire hazards that might occur during excavation works.

3. Concerning the treatment of the waste material in order to obtain end-of-waste status, such aspects are subject to the relevant environmental permitting requirements, and therefore further studies may be required at the relevant stage. Any environmental consideration related to such treatment shall feature in the EIA as far as the relevant information is available.
4. The landfill expert, to be engaged as part of the team of consultants for the EIA, shall have at least 5 years of experience in landfill aspects and experience in previous land mining studies.

## 2. ASSESSMENT OF ALTERNATIVES

An outline of the main alternatives studied and an indication of the main reasons for this choice, taking into account the relevant environmental effects and their prevention (or optimisation) at source. The following alternatives need to be duly considered, as relevant to the development itself (or to one or more phases thereof) and its requirements and constraints:

- 2.1. Alternative sites
- 2.2. Alternative technologies/processes
- 2.3. Downscaling of the project, or elimination of project components
- 2.4. Zero option (do-nothing scenario) - *i.e.* an assessment of the way the site would develop in the absence of the proposed project.  
*[Note: The zero option should be considered in sufficient detail as a plausible scenario in the EIA, wherever relevant, and not discarded upfront without proper discussion of its implications.]*
- 2.5. Hybrids/combinations of the above

The findings of the assessment of alternatives should be summarised in a table format for ease of comparison.

## 3. A DESCRIPTION OF THE SITE AND ITS SURROUNDINGS (*I.E.* ENVIRONMENTAL BASELINE)

The existing environmental features, characteristics and conditions, in and around the proposed development site as well as in all locations likely to be affected by the development or by ancillary interventions and operations, are to be identified and described in sufficient detail, with particular attention to the aspects elaborated further in the next sections.

The consultants should also identify (and justify) wherever relevant:

1. The geographic area (*e.g.* viewshed or other area of influence) that needs to be covered by each study;
2. The relevant sensitive receptors vis-à-vis the environmental parameter under consideration (*e.g.* residential communities, other users, natural ecosystems, specific populations of particular species, or individual physical features);
3. The location of the reference points or stations (*e.g.* viewpoints, monitoring stations, or sampling points (including depth of multiple sampling points at a single sampling point in the case of water media and sediment, where applicable) to be used in the study; and
4. Other methodological parameters of relevance, also noting that the assessment will normally require both desk-top studies and on-site investigations (including visual observations and sampling, as relevant).

*Note: It is recommended that these details are discussed in advance with the ERA prior to commencement of the relevant parts of the studies, in order to pre-empt (as much as possible) later-stage issues.*

Wherever relevant to the environmental aspects under discussion, reference to legislation, policies, plans (including programmes and strategies) standards and targets, should also be made, such that the compatibility (or otherwise) of the proposal therewith is also factored into the assessment required by **Section 4** below. The discussion should cover the following aspects, in the appropriate level of detail:

- Supra-national (e.g. European Union; United Nations; or other international or regional) legislation, directives, policies, conventions, protocols, treaties, charters, plans and obligations;
- National legislation, policies and plans (e.g. Structure Plan; National Environment Policy); and
- Sub-national legislation, policies and plans (e.g. local plans, site-specific regulations, action plans, management plans, and protective designations such as scheduling or Natura 2000).

**Note:** In addition to already in-force legislation, policies and plans, the discussion should also cover any foreseeable future updates (or new legislation, policies and plans) likely to be fulfilled, affected or compromised by the proposed project. Furthermore, it should be noted that some cross-cutting legal/policy instruments may need to be factored into more than one aspect of the discussion.

### 3.1. Land Cover and Land Uses

A description of the land cover and land uses within the area of influence of the project, including roads, footpaths and public access routes. Details including nature, magnitude, proximity to site, etc. should be included.

### 3.2. Landscape Character and Visual Amenity

#### 3.2.1 Landscape Character

The study should describe the landscape-related area of influence and landscape setting of the proposed site, identifying the component character areas and local landscape tracts, and the landscape elements, characteristics and degree of sensitivity thereof, so as to enable the prediction and assessment of:

- The changes to the landscape attributable (in full or in part) to the proposed development;
- The implications of such changes on the quality and perception of the landscape and its elements, in each of the identified landscape character areas and local landscape tracts; and
- The effects of such changes on relevant receptors (the receptors should also be duly identified and their degree of sensitivity should also be indicated and justified).

Reference should also be made to the 'Draft Landscape Assessment Study, 2004,' and to the *Guidelines for Landscape and Visual Impact Assessment (The Landscape Institute & IEMA)*, as relevant.

#### 3.2.2 Visual Amenity

The following need to be identified and submitted for prior ERA approval:

- The Zone of Theoretical Visibility (ZTV; also known as Zone of Visual Influence) of the site and the development under consideration; and
- Assessment viewpoints representative of short-, medium- and long-distance views towards the site. A baseline photograph taken from each proposed viewpoint is also required. The submission should cover all the important views of the site, whilst avoiding the inclusion of superfluous or inappropriate viewpoints (e.g. positions from which the site is not visible, or where the view is obstructed or dominated by physical obstacles in the foreground).

Thereafter, for each approved viewpoint, the projected situation and appearance of the site (*i.e.* as it would look with the proposed development in place) should be compared to the current baseline situation (*i.e.* without the proposed development). The following should be predicted and assessed accordingly:

- The expected changes to visual amenity as a result of the proposed development;
- The effects of such changes on the quality of the visual amenity of the site; and
- The effects of such changes on relevant receptors. (The receptors should also be duly identified and their degree of sensitivity should also be indicated and justified).

**Note:** The baseline photographs and the photomontages should, unless otherwise directed by ERA, satisfy the following:

(a) The location of each viewpoint should be shown on a map that also depicts the viewshed for the proposed site as described above. The visual angle of the photograph should also be indicated and should not be greater than 50°. Stitched photos that illustrate the field of vision towards the site from each viewpoint are acceptable as long as they are additional to the 50-degree photograph.

(b) The photographs and photomontages submitted should:

- Be at least A3 in size. Strips which are A3 in width but not in length are not appropriate except as supplementary illustrative material;
- Include the date and time at which the photo was taken;
- Be of good quality, with faithful reproduction approximating as much as reasonably possible what would normally be visible to the naked eye. The photos should be taken in good weather, and should be taken at least 2 hours after sunrise and 2 hours before sunset. Colours should not be digitally or otherwise manipulated. As a guideline, the image should have a printing density of 200 dots per inch or better. In some instances, digital images having a resolution of 1024 x 728 or better may be required for multimedia presentation purposes;
- Be taken in such a manner that near-field objects do not overpower or dominate features near the image plane passing through the project area;
- Be taken from a height above ground level that is representative of the eye level of the viewer, and such height should be duly documented; and
- Ensure that all additional/replacement structures and features depicted in the photomontages have a scale which proportionately tallies with the existing nearby features.

(c) Wherever relevant, the photomontage(s) should cover the following scenarios:

- The development without the proposed landscaping scheme, representing the worst-case scenario;
- The development complete with the proposed landscaping scheme as it is expected to look when the trees reach maturity, also providing an indicative timeframe as to when such maturity is expected to be attained; and
- (where relevant in relation to impact of nocturnal lighting) the development and its ancillary lighting as it would appear during night-time.

### 3.3. Geology, Geomorphology, Hydrogeology, Hydrology and Soils

A comprehensive investigation of:

1. The geology and geomorphology of the site and its surroundings, including: existing lithological, stratigraphical, palaeontological, hydrogeological and physiographic features and soil types; and
2. The geo-technical properties and considerations relevant to the site and its area of influence, including: land stability; mechanical, erosional and structural properties of the terrain and land mass; any relevant fissures, faults, hollows, or weak points; the vulnerability of the site to natural forces such as erosive elements, landslides and mass movements; and any other considerations affecting the implications and risks posed by the proposal or by any of its ancillary interventions such as site clearance, earth-moving, and excavations.

Sampling and testing should comply with the relevant standards (unless otherwise agreed, BS standards or other recognised equivalents should be used). Wherever the study involves the drilling of core samples, the number, depth and location thereof should also be submitted for ERA approval prior to carrying out of any *in situ* tests.

The study should also identify the hydrological characteristics of the water bodies and/or water resources in the area under investigation, including (as relevant):

1. The hydrology of the site and its surroundings, including all relevant features and dynamics, including a description of any potential linkages between different water bodies (i.e. groundwater linkages to surface waters), also cross-referring to hydrogeological factors as relevant;
2. The type, size and physical characteristics of any aquifers or other water bodies within the area of influence of the site, including: the nature of the water body, whether the water body is ephemeral or permanent, and other characteristics such as depth, type of bottom and topography, as well as physical and chemical characteristics of the water body; and
3. Natural and anthropogenic dynamics including groundwater recharge patterns; pumping and abstraction patterns; on-site and off-site drainage patterns; pipe/culvert connectivity between water bodies, run-off patterns; and flood risks.

### 3.4. Noise, Vibrations, and Lighting

This study should provide sufficiently detailed information on representative background levels of noise, vibrations and lighting, as a baseline for assessing the levels and effects expected to result from the works on site, including peaks and fluctuations as well as their acute or chronic impacts.

The study should also take into account other relevant factors such as:

- Cumulation with other existing sources, and with other predicted sources such as new developments;
- Sensitive receptors (e.g. residents, hospital/care facilities, residents, recreational areas, natural ecosystems); and

- The potential for attenuation or exacerbation by 'environmental' factors (e.g. topography, vegetation, physical barriers etc.), and for mitigation (e.g. shielding, muffling/soundproofing, reduced lighting, etc.).

These investigations should include measurable parameters (e.g. frequency, intensity), and should be evaluated against appropriate reference values and in accordance with BS 5228-1:2009. The reference points and measurement locations used should be approved by ERA prior to commencement of studies and, unless otherwise indicated, should be at ground level.

The methodology to be used should be submitted for ERA's evaluation prior to commencement of studies.

### 3.5. Architectural, Archaeological, Historical & Cultural Heritage and related Material Assets

Refer to Appendix 2.

### 3.6. Infrastructure and Utilities

The assessment should investigate the currently available infrastructural services (including water supply, energy supply, sewerage, telecommunications infrastructure, access roads, parking, etc.), including details about their carrying capacity, physical condition and other relevant practical considerations. It should also compare this information to the infrastructural demands of the project as identified in **Section 1** above, so as to clearly indicate:

1. whether the current utilities are adequate to meet the demand arising from the proposed development;
2. whether any significant loading, congestion or damaging of the infrastructural or transport network is envisaged; and
3. whether any new or upgraded services/arrangements will be rendered necessary, both in the short-term and in the longer-term. If any requirement for new infrastructure (or upgrading, alteration or extension of the existing infrastructure) is envisaged, the relevant details including associated works and their environmental implications should also be indicated.

The assessment should also identify any existing or projected infrastructural services located within the area of influence of the development (even if not related to the demands of the development) that might be affected by the development or which may need to be displaced or diverted as a consequence of the development or its ancillary operations and interventions.

### 3.7. Other relevant environmental aspects and features

Other relevant environmental features or considerations not identified in the preceding sections should also be identified and described, as relevant.

## 4. ASSESSMENT OF ENVIRONMENTAL IMPACTS AND ENVIRONMENTAL RISKS

All likely significant effects and risks posed by the proposed project on the environment during all relevant phases (including construction/excavation/demolition, operation and decommissioning) should be assessed in detail, taking into account the information emerging from Sections 1, 2 and 3 above. Apart from considering the project on its own merits (*i.e.* if taken in isolation), the assessment should also take into account the wider surrounding context and should consider the limitations and effects that the surrounding environmental constraints, features and dynamics may exert on the proposed development, thereby identifying any incompatibilities, conflicts, interferences or other relevant implications that may arise if the project is implemented.

In this regard, the assessment should address the following aspects, as applicable for any category of effects or for the overall evaluation of environmental impact, addressing the worst-case scenario wherever relevant:

1. An exhaustive identification and description of the envisaged impacts;
2. The magnitude, severity and significance of the impacts;
3. The geographical extent/range and physical distribution of the impacts, in relation to: site coverage; the features located in the site surroundings; whether the impacts are short-, medium- or long-range; and any transboundary impacts (*i.e.* impacts affecting other countries);

4. The timing and duration of the impacts (whether the impact is temporary or permanent; short-, medium- or long-term; and reasonable quantification of timeframes);
5. Whether the impacts are reversible or irreversible (including the degree of reversibility in practice and a clear identification of any conditions, assumptions and pre-requisites for reversibility);
6. A comprehensive coverage of direct, indirect, secondary and cumulative impacts, including:
  - interactions (e.g. summative, synergistic, antagonistic, and vicious-cycle effects) between impacts;
  - interactions or interference with natural or anthropogenic processes and dynamics;
  - cumulation of the project and its effects with other past, present or reasonably foreseeable developments, activities and land uses and with other relevant baseline situations; and
  - wider impacts and environmental implications arising from consequent demands, implications and commitments associated with the project (including: displacement of existing uses; new or increased pressures on the environment in the surroundings of the project, including pressures which may be exacerbated by the proposal but of which effects may go beyond the area of influence; and impacts of any additional interventions likely to be triggered or necessitated by situations created, induced or exacerbated by the project);
7. Whether the impacts are adverse, neutral or beneficial;
8. The sensitivity and resilience of resources, environmental features and receptors vis-à-vis the impacts;
9. Implications and conflicts vis-à-vis environmentally-relevant plans, policies and regulations;
10. The probability of the impacts occurring; and
11. The techniques, methods, calculations and assumptions used in the analyses and predictions, and the confidence level/limits and uncertainties vis-à-vis impact prediction.

The impacts that need to be addressed are detailed further in the sub-sections below.

#### **4.1. Effects on the environmental aspects identified in Section 3**

The assessment should thoroughly identify and evaluate the impacts and implications of the project on all the relevant environmental aspects identified in Section 3 above, also taking into account the various considerations outlined in the respective sections.

#### **4.2. Impacts related to Climate Change**

The assessment should address the following aspects, as relevant:

1. The contribution of the project to greenhouse gas (GHG) emissions and climate change, including:
  - (i) The impacts of the proposal on carbon sinks, and on carbon release and sequestration processes;
  - (ii) The direct, indirect and off-site GHG emissions and related impacts during all relevant phases of the project, including those arising as a result of the excavation works, treatment processes and the electrical power demand of the project;
  - (iii) Any massive GHG emissions that may occur as a consequence of accidents or malfunctions;
  - (iv) The components of the project that are expected to contribute to renewable energy generation on site or to a reduction in GHG emissions through substitution of current generation facilities, including a quantification and critique of their reliability and actual net contribution to climate change mitigation as well as an identification of the impacts of such components on other aspects of the environment (e.g. landscape, land take, avifauna); and
  - (v) The implications of the project and its ancillary demands on National GHG emission targets.

#### **4.3. Environmental risk**

The assessment should also address, in sufficient detail, any relevant environmental risk (including major-accident scenarios such as fires, blast, emissions, contamination, major spillages, etc.) likely to result in environmental damage or deterioration. The range of accident scenarios considered should exhaustively cover, as relevant:

1. one-time risks or recurrent risks during the works; and
2. risks associated with extreme events (e.g. effect of earthquakes or natural disasters on the project).

The assessment should include, as relevant: a quantification of the risk magnitude and probability; and risk analysis vis-à-vis any hazardous materials stored, handled, or generated on site or transported to/from the site.

**Note:** Given that the gas bottling facility falls within the scope of the Seveso/COMAH regulations, a stand-alone Risk Assessment may be required, to the satisfaction of the relevant Competent Authority. In such instances, separate Terms of Reference are issued for the Risk Assessment.

#### 4.4. Effects on Human Populations resulting from impacts on the environment

This assessment should also identify any impacts of the development on the surrounding and visiting population (e.g. effects on public health), that may result from impacts on the environment. In the case of health-related effects, reference should be made to published epidemiological and other studies, as relevant, and the views of the Environmental Health Directorate should be sought.

#### 4.5. Other Environmental Effects

Any other environmental effects deemed relevant to the project but not fitting within any of the above sections should also be identified and assessed.

### 5. REQUIRED MEASURES, IDENTIFICATION OF RESIDUAL IMPACTS, AND MONITORING PROGRAMME

#### 5.1. Mitigation Measures

A clear identification and explanation of the measures envisaged to prevent, eliminate, reduce or offset (as relevant) the identified significant adverse effects of the project during all relevant phases including construction, operation and decommissioning [see **Section 1.2.3** above].

As a general rule, mitigation measures for construction-phase impacts should be packaged as a holistic Construction Management Plan (CMP). Whilst the detailed workings of the CMP may need to be devised at a later stage (e.g. after the final design of the project has been approved and/or after a contractor has been appointed), the key parameters that the CMP must adhere to for proper mitigation need to be identified in the EIA. Broadly similar considerations also apply vis-à-vis operational-phase impacts [which may need to be mitigated through an operational permit] and decommissioning-phase impacts [see **Section 5.4** below], where relevant.

Mitigation measures for accident/risk scenarios should be packaged as a holistic plan that includes the integration of failsafe systems into the project design as well as well-defined contingency measures.

The recommended measures should be feasible, realistically implementable to the required standards and in a timely manner, effective and reliable, and reasonably exhaustive. They should not be dependent on factors that are beyond the developer's and ERA's control or which would be difficult to monitor, implement or enforce. The actual scope for, and feasibility of, effective prevention or mitigation should also be clearly indicated, also identifying all potentially important pre-requisites, conditionalities and side-effects.

#### 5.2. Residual Impacts

Any residual impacts [*i.e.* impacts that cannot be effectively mitigated, or can only be partly mitigated, or which are expected to remain or recur again following exhaustive implementation of mitigation measures] should also be clearly identified.

#### 5.3. Additional Measures

Compensatory measures (*i.e.* measures intended to offset, in whole or in part, the residual impacts) should also be identified, as reasonably relevant. Such measures should be not considered as an acceptable substitute to impact avoidance or mitigation.

If the assessment also identifies beneficial impacts on the environment, measures to maximise the environmental benefit should also be identified.

In both instances, the same practical considerations as indicated vis-à-vis mitigation measures should also apply.

## 5.4. Decommissioning Plan

A decommissioning plan (DP) should also be proposed to address the removal of the gas bottling facility and the Civic Amenity site, and any temporary or defined-lifetime structures or infrastructure required temporarily in connection with the proposed works, upon the expiry of their permitted duration, or in the event of cessation of operations, serious default from critical mitigation measures, or other overriding situations that may emerge in future.

The DP should also include, as relevant, a phasing-out plan, proposals for site remediation or decontamination, and methodological guidance on site reinstatement or appropriate after-use.

With respect to the decommissioning of the gas bottling facility, the decommissioning plan should be in accordance with the terms of reference in **Appendix 3**.

## 5.5. Monitoring Programme

A realistic and enforceable programme for effective monitoring of those works envisaged to have an adverse or uncertain impact. The monitoring programme should include:

1. Details regarding type and frequency of monitoring and reporting, including spot checks;
2. The parameters that will be monitored, their units of measurement, the monitoring indicators to be used; and standard analytical methods in line with relevant EU policy;
3. An effective indication of the required action to address any exceedances, risks, mitigation failures or non-compliances for each monitoring parameter;
4. An evaluation of forecasts, predictions and measures identified in the EIA; and
5. An indication of the nature and extent of any additional investigations (including EIAs or ad hoc detailed investigations, if relevant) that may be required in the event of any contingencies, unanticipated impacts, or impacts of larger magnitude or extent than predicted.

The programme should address all relevant stages, as follows:

- (a) Where relevant, monitoring of preliminary on-site investigations that may entail significant disturbance or damage to site features (e.g. geological sampling, or any works that require prior site clearance or any significant destructive sampling);  
*[Note: Official written consent from the competent authorities (e.g. Superintendence of Cultural Heritage) may also be required for such interventions.]*
- (b) Monitoring of the works, including the situation before initiation of works, during appropriate stages of progress, and after completion of works;
- (d) Where relevant, monitoring of decommissioning works, including the situation before initiation of works, during appropriate stages of progress, and after completion of works.

## 5.6. Identification of required authorisations

The assessment should also identify all environmentally-relevant permits, licences, clearances and authorisations (other than the development permit to which this EIA is ancillary) which must be obtained by the applicant in order to effectively implement the project if development permission is granted. Any uncertainty, as to whether any of these pre-requisites is applicable to the project, should be clearly stated.

### Note on Sections 5.1 to 5.6 above:

The expected effects, the proposed measures, the residual impacts, the proposed monitoring etc. should also be summarised in a user-friendly itemised table that enables the reader to easily relate the various aspects to each other. An indicative specimen table is attached in **Appendix 4**.

**Signed Declaration: Identification of consultants and contributors**

This declaration is to be submitted with each environmental survey report forming part of the EIA.

Attn: Director of Environment and Resources (ERA).

I \_\_\_\_\_, who carried out the study (or part thereof) on  
\_\_\_\_\_ for the EIA for the proposed  
\_\_\_\_\_, hereby declare that I take responsibility for  
the study any statement and conclusion contained therein.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

**FINAL**

**Signed Declaration: Conflict of interest**

**Signed declaration in accordance with sub-regulation 17(3):**

This declaration is to be submitted with each environmental survey report forming part of the EIA.

Attn: Director of Environment and Resources (ERA).

I, \_\_\_\_\_, hereby declare that, I have no personal or financial interest in the proposed development. Moreover, I declare that I am not in any way associated with any individual, company, association or grouping that has any direct or indirect, personal, professional or financial interest in the proposed development.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

ENVIRONMENTAL

### **1.0 Preamble**

The site in question is an ex-landfill which forms part of the Luqa Park Development Brief. The site lies within an area of archaeological sensitivity as shown on Map LU8 of the South Malta Local Plan. Archaeological discoveries at the *Tal-Qtates* Area and within the St. Vincent de Paule premises consist of multiple rock-cut tombs.

The proposed project would involve development over an extensive area and may lead to intensification of activity over a larger area. Potential impacts may occur within the footprint of the project, in the immediate environs, and along access routes to the site. Potential impacts may include direct and immediate material impacts, as well as subsequent impacts that might arise from the modification of the existing situation.

### **2.0 Scope and Definitions of the EIA**

For the purposes of this document, cultural heritage is defined by Article 2 of the Cultural Heritage Act (2019). This includes movable or immovable objects of artistic, architectural, historical, archaeological, ethnographic, palaeontological and geological importance.

- 2.1 The study area shall include the total footprint of the proposed development.
- 2.2 In the context of this particular application, cultural heritage considerations may include:
- St. Vincent de Paule Hospital;
  - Remains found within the grounds of St. Vincent de Paule complex; and
  - Funerary remains found within *Tal-Qtates* area.

The above cultural heritage definitions and considerations are not to be considered as exhaustive. The EIA must consider all other forms of cultural heritage, both known and unknown.

- 2.3 The Environmental Impact assessment will:
- Describe the Cultural Heritage assets within the study area;
  - Analyse the cultural heritage features within the context of the cultural landscape;
  - Assess the physical, spatial and visual impacts of the proposed development on the cultural heritage assets; and
  - Propose corrective measures for the protection of the cultural resources.

### **3.0 Methodology**

In quantifying the cultural heritage assets within the study area, and assessing the impacts of the proposed development, the EIA will undertake:

- Description and assessment of the property;
- Desktop and archival research limited to the study area;
- Fieldwork and research, including “field walking”, topographic survey and remote sensing as may be necessary within the site. All fieldwork has to be authorised by the Superintendence of Cultural Heritage as defined below under point 4;
- Consultations with any relevant bodies, including the Superintendence of Cultural Heritage, Heritage Malta, the University of Malta, NGOs and Local Councils;
- Compilation of an inventory of the cultural heritage assets identified within the study area. The features of cultural heritage are to be described and plotted with grid references, on Data Capture Sheets, the design of which should be approved in advance by the Superintendence of Cultural Heritage. The Data Capture Sheets will be presented as an appendix to the EIA. The analysis of the features will be included in the main report; and
- A cultural heritage Risk Assessment Map examining the various impacts of the proposed project is to be included in the EIA.

### **4.0 Authorisation by the Superintendence of Cultural Heritage**

As per Cultural Heritage Act 2019, any form of investigation or prospection required for the identification of cultural heritage (including excavation, field walking, topographic survey and remote sensing) may only be undertaken by the Superintendence of Cultural Heritage or with its written approval.

<b>ERA</b> PROTECTIVE INVENTORY OF THE MALTESE CULTURAL HERITAGE HERITAGE DATA CAPTURE SHEET					Ref. No.	
Location		Category		Type	Site Location ( Address )	
Eastings		Northings		Feature	Period - Year	
S.S. No. 1		S.S. No. 2		Description		
S.S. No. 3		S.S. No. 4				
Date						
Negative No.		Film No.				
Present Utilization						
Existing Legal Protection				GN. Number		GN. Date
Comments						
Buffer Zone	A	B	C	D	E	Others
Eastings						
Northings						
Site Map						
Scale 1 : 2500						

Archaeological Characteristics – Sketch/Scaled drawings:	
Condition:	Degree of Protection (Structure Plan policies UCO7 or ARC 2):
State of Security:	Proposed Utilization:
Basic Bibliography:	
Compiled by:	Revised by:
Checked by:	Checked by:
Date:	Date:

### APPENDIX 3: TERMS OF REFERENCE FOR TANK DISMANTLING

1. Submission of a works method statement including information on how the tanks will be dismantled including details on how any liquid or gaseous hydrocarbons trapped between the tank sheets will be removed.
2. Submission of a risk assessment for the cleaning and dismantling of tank structures. This study shall include details on how the tanks will be protected from any sparks or potential accidents during hot cutting. Further discussions with the OHSA and CPD may be required.
3. Details on how the tanks will be rendered free from hydrocarbon residues. If any washing with chemicals/detergents will be required (MSDS to be provided), additional information shall be provided to address proper containment and disposal of any such contaminated wash water.
4. Submission of a certification from an industrial hygienist that from a waste management perspective tank cleaning has been suitably carried out. This shall be carried out prior to any interventions of dismantling of the tanks.
5. If the operator intends to cut any hold in the roof and the bottom of the tanks so as to remove any liquid or gaseous hydrocarbons trapped between the sheets, details on containment measures against potential percolation and contamination of the bund floor is to be submitted.
6. Information of the how cleaning of associated pipework will be carried out including details on any chemicals and equipment to be used for such cleaning together with containment measures for any resulting effluent. Such effluent shall be included in the list of wastes and disposal options identified.
7. Details on odour abatement during the cleaning of any residues from the tanks is required, including relevant documentation and product specifications.
8. Quantities of tank bottom sludges (if applicable) to be removed including details on temporary storage arrangements and final disposal locations. If relevant, details on secondary containment during the packaging of sludge prior to removal from the site and considerations in case of any accidental spillages and any catchment of contaminated rain water/ wash water which might be present in this area is to be identified. The location of this area shall also be shown on plan.
9. In case that any materials e.g. sand is present between tank bottom and tank base, the methodology to be adopted for the sampling, analysis and classification of such material is to be provided. Sampling methodology is to be in line with EN 14899. Samples are to be analyzed by laboratories that have proven experience in waste testing and preferably ISO17025 certified. The samples shall be analyzed according to EN13137, EN13657 (or EN13656) and EN12506 and provide information on both the organic and inorganic constituents in the samples. Classification of the nature of the waste is to be carried out according to SL504.37, the waste regulations and commission decision 2000/532/EC and not according to decision 2003/33/EC.
10. Submission of a methodology which shall include details of sampling, analysis and classification of the tank structures is to be provided for identification of disposal purposes. Sampling methodology is to be in line with EN 14899. Samples are to be analyzed by laboratories that have proven experience in waste testing and preferably ISO17025 certified. The samples shall be analyzed according to EN13137, EN13657 (or EN13656) and EN12506 and provide information on both the organic and inorganic constituents in the samples. Classification of the nature of the waste is to be carried out according to SL504.37, the waste regulations and commission decision 2000/532/EC and not according to decision 2003/33/EC.
11. Identification of all waste streams generated from the cleaning and dismantling process are to be identified and quantified as much as possible at this stage. The information is to be provided as and resubmitted following completion of works.

**APPENDIX 4: SPECIMEN IMPACT TABLE**

Impact type and source			Impact receptor		Effect & scale							Probability of impact occurring (Inevitable, Likely, Unlikely, Remote, Uncertain)	Overall impact significance	Proposed mitigation measures	Residual impact significance	Other requirements (monitoring, authorisations, etc)
Impact type	Specific intervention leading to impact	Project phase (construction/operation/decommissioning)	Receptor type	Sensitivity & resilience toward impact	Direct/Indirect/Cumulative	Beneficial/Adverse	Severity	Physical / geographic extent of impact	Short-/medium-/long-term	Temporary (indicate duration)/Permanent	Reversible (indicate ease of reversibility) / Irreversible					

*[Insert definition of relevant criteria used to describe the impacts]*