FINAL TERMS OF REFERENCE[1]

FOR THE PREPARATION OF AN

ENVIRONMENTAL PLANNING STATEMENT

August 2016

DISCLAIMER:

1. **The assessment shall in no way be constrained or conditioned by the content, structure, or limitations of this document, and ERA reserves the right to amend the TORs, even significantly, as necessary. Such amendments may include: additional studies or extension of studies; omission or downscaling of any studies deemed irrelevant or unimportant; changes to methodology, format or level of detail; and any other modifications as ERA deems appropriate once a clearer picture of the proposal is available. The content of this document shall in no way constitute an exemption from the ensuing requirements, nor shall ERA be responsible or liable for any issues, difficulties or claims arising from variations from this document.**

2. **EIA Terms of Reference are primarily intended to guide the EIA process, rather than as a basis for tendering, subcontracting, calls for expression of interest, or other purposes even if ancillary to the project. Any use for such purposes is at the sole risk of the user.**

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 Terms of Reference) 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 the ERA position on the project and to ERA's final decision. 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.

An Environmental Planning Statement (EPS) is to be prepared for *TRK162479: Creation of business park consisting of 7 blocks of class 4a offices, over 5 storeys with landscaped courtyards & a multi-level car park for 689 vehicles underlying class 4a offices at top level including demolition of existing buildings but retaining screen facade (listed grade 2) at The Brewery, Triq Notabile and Triq San Ġwakkin, Birkirkara, Malta*, as required by the Environmental Impact Assessment Regulations, 2007 (S.L. 549.46). The required components of the EPS 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 original survey reports as prepared by the individual specialist consultants for specific topics;
*[**Note:** Experts contributing to the EPS 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 EPS, 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 sub-regulations 28 and 29 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 EPS, and how they were addressed.

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

The complete EPS (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, once the EPS has been certified, both a printable digital copy (in .pdf format, with copying enabled throughout) and a printed copy of the certified document is to be submitted to ERA.

Wherever any other study not forming part of the EPS is also envisaged, this is to be submitted separately from the EPS. Cross-referencing between the EPS 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 EPS and the other studies as stand-alone documents.

More detailed specifications are identified in the following pages.

1.0 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 proposal 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 Whole Project and the Land Use Requirements during the Construction, Operational and Decommissioning Phases

The following aspects should be addressed for all phases of the project, clearly distinguishing between aspects relating to construction phase, operational phase, decommissioning phase, or more than one phase. References to construction phase and decommissioning phase also include ancillary site preparation, clearing, excavation, demolition/dismantling, and site reinstatement works, as relevant.

1.2.1 General characteristics

Description of the proposed development including size, area, height, volume, configuration/layout, general design, location and proposed elevations of buildings, hard and soft landscaping, 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 application, throughout both the EIA process and the development permission application process.

1.2.2 Operational and production processes

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

- The nature and quantity of materials used or generated;
- The source, type, quantity, composition and concentration of residues and emissions including water, air, soil pollution, noise, vibration, light, heat, radiation etc. resulting from the proposed project; and
- The expected annual and total emissions, including Greenhouse Gases (GHG), and the contribution to total national GHG emission on an annual basis.

1.2.3 Project management

An indicative framework outlining the key parameters and site management arrangements during construction, operation and decommissioning phases, including:

- Works methodology;
- Expected duration of all phases, as well as season, frequency and duration of interventions;
- Depths and volumes of excavation, and type of material to be excavated; and
- Types and quantities of raw materials and primary resources to be consumed, including water, energy, stone and other resources, and measures to reduce such consumption.

1.2.4 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.

1.2.5 Water, sewerage, runoff management, energy, telecommunications, 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 development and its ancillary facilities which consume water, including estimates of water consumption and runoff/effluent generation during operation;
   - The sources of water (*e.g.* second-class water, public potable water mains, on-site production) envisaged to meet the projected demand;
   - The water-saving measures, if any, that are envisaged (*e.g.* use of low-flow fittings, reuse of harvested storm water runoff and rainwater, treatment and reuse of grey water/sewage), and details as to how such water will be used/managed; and
   - The facilities and structures to be installed in connection with the above (*e.g.* water production, purification, collection, storage, distribution and saving) including estimates of the sizing of pipelines, reservoirs and equipment.

2. Estimates of the energy-related specifications, including:
   - The features and processes of the proposed development and its ancillary facilities which consume energy, including 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;
   - The energy sources envisaged to meet the projected demand;
   - The facilities and structures to be installed in connection with the above (*e.g.* energy production, storage, distribution and saving) including estimates of the sizing of cables, buildings and equipment; and
   - The expected energy performance of the proposal, including building orientation, natural ventilation, construction materials, integration of low/zero-carbon technologies to meet energy needs; avoidance of features which increase energy consumption; and energy efficiency measures in the finishing and operation of the development.

3. Infrastructural services and utilities related to water and power supplies, sewerage, telecommunications and runoff management, and ancillary works (*e.g.* trenches, tunnels, culverts, switching/transformer stations, pumphouses, 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, collection of rain and storm water for reuse, reuse of treated wastewater/sewage, technologies that reduce energy consumption, and the integration of alternative energy sources. Alternatives in terms of design, fabric and orientation of the buildings should also be explored and assessed.

1.2.6 Waste management

1. A sufficiently detailed indication of the waste management implications likely to arise from the project, including wastes generated by ancillary facilities and wastes which may arise from accidental spillages and leakages and 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:
   - Identification of processes or activities that would result in waste generation;
   - European Waste Catalogue Codes for each waste stream, as per relevant legislation;
   - The projected quantities and rate of generation for each type of waste;
   - Information on 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 (Legal Notice 184 of 2011 as amended):

Phase	Type of waste	EWC Code	H-Code	Activity (*e.g.* sanding, scraping, power washing etc.)	Estimated quantities	Final permitted disposal location

3. The envisaged waste management arrangements using the Best Practicable Environmental Options (BPEO) available, and the envisaged efforts to minimise waste generation and to divert waste to reuse or recycling rather than disposal.
4. Layout plans (to scale) clearly showing all relevant waste management infrastructure and related facilities (*e.g.* bunded areas for storage of waste fuels, wheel-wash facilities, etc.), clearly distinguishing between temporary and permanent structures for each phase.

1.2.7 Longer-term developments

Additional future developments, land uses and other commitments that are ancillary or consequent to the project or are likely to arise in relation to the same project or its expansion, as well as longer-term needs of the proposal, including: ancillary infrastructure not accounted for in the previous sections; any consequent interventions/arrangements required to accommodate the development; any foreseeable extensions or updates to the proposal; any displacement of existing uses; and decommissioning.

2.0 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

2.3 Alternative layouts (including building heights, where relevant)

2.4 Downscaling of the project, or elimination of project components

2.5 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 EPS, wherever relevant, and not discarded upfront without proper discussion of its implications.]*

2.6 Hybrids/combinations of the above

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

3.0 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) 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 (e.g. Water Framework Directive) 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, public access routes and any agricultural tracts of land (including physical quality and productivity of the land). Details including nature, magnitude, proximity to site, etc. should be included. Any trees, included protected trees, are to be mapped accordingly.

3.2 Landscape Character and Visual Amenity

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 MEPA's '*Draft Landscape Assessment Study, 2004,*' and to the *Guidelines for Landscape and Visual Impact Assessment* (*The Landscape Institute* & *IEMA*), 2013 as relevant.

3.2.2 Visual Amenity

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

- The zone of visual influence (ZVI) 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.*

Exterior lighting

In the case of light pollution, the study needs to consider, among others, glare (e.g. the blinding light which is a danger to motorists/pedestrians and to fauna), light trespass (light straying into an area where it is not desired or required) and sky glow ('wasted' light directed upwards), together with any other relevant variables which are relevant to the determination of impact on any surrounding receptors.

3.3 Geology, Geomorphology, Hydrogeology, 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;
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 wave action, erosive elements, landslides and mass movements; and any other considerations affecting the implications and risks posed by the proposed development or by any of its ancillary interventions such as site clearance, earth-moving, and excavations; and
3. The quality of the material that will be excavated (including soil, rock/mineral resource, and any existing fill material) and its potential for reuse.

Sampling and testing should comply with the relevant standards (unless otherwise agreed, BS standards or other recognised equivalents should be used), and should extend to a sufficient depth below the deepest level of the proposed development (taking into consideration all proposed excavations and underground structures). 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.

3.4 Water bodies (including Terrestrial and Underground)

The study should identify the hydrological and hydromorphological of the water bodies, water resources and aquatic environments in the area under investigation, including:

1. The hydrology of the site and its surroundings, including all potentially relevant features and dynamics, such as: aquifers; springs; surface waters; watercourses; valley catchments; etc, also cross-referring to hydrogeological factors (see ***Section 3.3*** above) as relevant;
2. The type, size and physical characteristics of any aquifers and surface water bodies within the area of influence of the site, including: the nature of the water body (*e.g.* aquifer, flowing surface water, etc.); and
3. Natural and anthropogenic dynamics including groundwater recharge patterns; pumping and abstraction patterns; on-site and off-site drainage patterns; run-off patterns; and flood risks.

The study should provide a sufficiently detailed baseline to enable assessment of the effects of the proposal on the quality of the water body (terrestrial and underground), the extent of area affected by hydrographical changes (terrestrial), the nature of the changes (whether temporary or permanent) and effects of such changes on any nearby ecological features and functions. Such assessment should be undertaken in line with indicators used/established by relevant EU policy.

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

Refer to Appendix 2.

3.6 Air Quality

This study should clearly establish the current background levels of pollution (including dust, chemical emissions such as VOCs, and odours) and should include a clear comparison to the relevant reference and limit values as specified in the relevant legislation as well as in any other relevant guidance documents. Details on prevailing wind and climate conditions should also be included, amongst other relevant parameters.

The methodology to be used should be submitted for ERA's evaluation prior to commencement of the studies. The Air Quality Study shall be conducted in accordance with Appendix 3 to these terms of reference.

3.7 Noise, Vibrations and Exterior Lighting

This study should provide sufficiently detailed information on representative background levels of noise, vibration and nocturnal lighting (as relevant), as a baseline for assessing the levels and effects expected to result from the development, including any short- and long-term changes, 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 including traffic, and with other predicted sources such as new developments;
- Additional effects of road traffic associated with operations on the site;
- Sensitive receptors (*e.g.* residents, schools, hospitals, recreational areas, fauna and avifauna, 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.).

Note: *In the case of light pollution, the study needs to consider, among others, glare (e.g. the blinding light which is a danger to motorists/pedestrians and to fauna), light trespass (light straying into an area where it is not desired or required) and sky glow ('wasted' light directed upwards), together with any other relevant variables which are relevant to the determination of impact on the surrounding receptors.*

The study results should include measurable parameters (*e.g.* frequency, intensity) as relevant, and should be evaluated against appropriate reference values[2]. 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.

[2] Unless otherwise specifically indicated, it is recommended that: ISO 1996 and ISO 9613 (all series) standards are used for the noise assessment; BS6472 (relating to human exposure to vibration) and BS7385 (covering the effects on buildings) are used when studying vibration; BS 5228 is used for the assessment of construction noise; and BS 4142 is used vis-à-vis noise complaints.

3.8 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.

3.9 Public Access

The assessment should identify the current public access arrangements, including existing footpaths and other public access routes, and should clearly indicate whether these would be affected and how.

Wherever any new or altered arrangements are proposed, these should be clearly identified and their environmental implications should also be indicated.

3.10 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.

4.0 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 development pressures in the surroundings of the project; 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 and Climate Change Adaptation

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 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 electrical power demand of the project;
   (ii) Any massive GHG emissions that may occur as a consequence of accidents or malfunctions;
   (iii) The impacts of the proposal on carbon sinks (*e.g.* wooded/afforested areas, agricultural soils, landfills, wetlands, and marine environments);
   (iv) The components of the project that are expected to contribute to renewable energy generation on site, 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 operations and ancillary demands on National GHG emission targets.

2. The implications of climate change on the proposal, including:
   (i) The aspects/elements of the project that are likely to be affected by changes or variability in climate-related parameters (*e.g.* temperature, humidity, weather patterns, sea level, etc.);
   (ii) The potential impacts that such changes may have on the proposal, including any possible impacts resulting from changes to multiple parameters; and
   (iii) The adaptability of the project and its components and operations vis-à-vis the relevant climate change parameters and trends.

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 or on socio-economic considerations), 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.

5.0 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 EPS. 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 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, and the monitoring indicators to be used;
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 EPS; 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);
*[**Note:** Official written consent from the competent authorities may also be required for such interventions.]*

(b) Monitoring of the construction phase, including the situation before initiation of works (including site clearance), during appropriate stages of progress, and after completion of works;

(c) Monitoring of the operational phase, except where otherwise directed by ERA (*e.g.* where monitoring would be more appropriately integrated into an operating permit); and

(d) Where relevant, monitoring of the decommissioning phase, 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 EPS 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.***

APPENDIX 1 REQUIRED DECLARATIONS [EIA REGULATIONS, 2007 - REGULATIONS 28 & 29]

Regulation 28: Identification of consultants and contributors

Extract:

28. (1) The environmental impact statement shall list the registration number and the names of the consultants and contributors responsible for the preparation of the environmental impact statement, environmental survey reports, appendices, non-technical summary and other components of the statement.

(2) The consultants who are responsible for a particular analysis, including analysis in the environmental survey reports, shall be identified.

(3) All consultants and contributors employed in the environmental impact assessment shall sign a declaration stating that the particular study (or part thereof) was solely carried out by them and that they take responsibility for any statement and conclusion contained therein. This signed declaration shall be included with each environmental survey report included with the environmental impact statement.

Signed declaration in accordance with sub-regulation 28(3):

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

Attn: Director of Environment (ERA).

I _____, who carried out the study (or part thereof) on _____ for the EIA for the proposed _____, hereby declare that such study was solely carried out by me and take responsibility for any statement and conclusion contained therein.

_____ _____

Date Signature

Regulation 29: Conflict of interest

Extract:

29. (1) In the interest of fairness, objectivity and the avoidance of bias, all consultants shall required to sign and abide by a declaration that they have no personal or financial interest in the proposed development.

(2) The Director of Environment Protection shall not approve consultants, groups of consultants or consultancy firms that are in any way associated with any company, association or grouping that has any direct or indirect personal, association or grouping that has any direct or indirect personal, professional or financial interest in the proposed development.

(3) The Director of Environment Protection shall not approve any environmental impact statement or environmental planning statement produced by a consultant or group of consultants, one or more of whom does not comply with the provisions of sub-regulations (1) or (2) of this regulation.

Signed declaration in accordance with Sub-regulation 29(1):

This declaration is to be submitted when proposing the list of EIA Consultants for approval.

Attn: Director of Environment (ERA)

I _____, herby declare that I have no personal or financial interest in the proposed development, namely _____. 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 abovementioned proposed development.

_____ _____

Date Signature

APPENDIX 2: TERMS OF REFERENCE FOR A CULTURAL HERITAGE ASSESSMENT (AS PROVIDED BY THE SUPERINTENDENCE OF CULTURAL HERITAGE, AS REVISED IN OCTOBER 2013)

1.0 Preamble

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 (2002). 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:

- Features of archaeological value and potential;
- Military or civil architecture from the Knights period to British period;
- Vernacular structures; and
- Field systems and agricultural features such as irrigation systems.

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 EPS. 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 2002, 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.

ERA PTOTECTIVE 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 AIR QUALITY

Legal background:

Regulation 29 of LN 478 of 2010 grants ERA the power to issue guidance notes on the conduction of Air Quality Studies which are required by any Regulations issued under the Environment and Development Planning Act. including the EIA Regulations (LN 114 of 2007).

Part II of Schedule 7 to LN 478 of 2010 sets the following (legally binding limit values): an annual limit value of 40µg/m^3 for PM10, a daily limit value for PM10 of 50µg/m^3 which can not be exceeded on more than 35 calendar days, an annual limit value 40µg/m^3 for NO_2 and an hourly limit value of 200µg/m^3, which can not be exceeded more than 18 times per calendar year.

Regulations 19 and 20 of LN 78 of 2010 give ERA the responsibility to ensure that the above mentioned limits are complied with across Malta and Gozo.

The Air Quality study shall be conducted as follows:

1. **Base Line Studies**

a) The baseline levels of PM10 and NO_2 shall be established through *in-situ* monitoring;

b) Baseline levels of PM10 shall be determined using the reference method (MSA EN 12341:2000) for the determination of PM10;

c) The consultants should use the reference method for the sampling and measurement of PM10;

d) The design criteria for the samplers shall be as per Annex B to the said standard and shall be as per Section IV of Annex IX: MSA EN 12341: 2000;

Type of Sampler	Flow rate		Filters
Low volume sampler (LVS-PM10 reference head).	2.3 $m^3.hr^{-1}$ or 38.3$dm^3.min^{-1}$.	Operated at a constant rate of 2.3 $m^3.hr^{-1}$ ± 2%.	Circular: Ø ≥ 47 mm and Ø ≤ 50 mm
High volume sampler (HVS-PM10 reference head).	68 $m^3.hr^{-1}$ or 1.133 $m^3.min^{-1}$.	Operated at a constant rate of 68 $m^3.hr^{-1}$ ± 2%.	Rectangular 203 mm × 254 mm

Figure 1.1 design criteria for the samplers.

e) The resolution of the balance used for the weighing of filters sampled using an LVS shall be at least 10 µg;

f) The filters should be conditioned for at least 48hours at 50% relative humidity (+ or - 5%) and at 20 ºC (+ or - 1 K);

g) The filters should be weighed at least twice for concordance with a time lag of at least 12 hours between the two weightings;

h) Flow rates are at ambient volumes not at normalised volumes. The weighing shall take place in the same climate controlled room;

i) Consultants can use alternative sampling and measurement methods if they demonstrate to MEPA's satisfaction, equivalence to the above mentioned method. Equivalence shall be determined using the European Commission's method for the determination of equivalence; any other method shall be deemed unacceptable. MEPA will accept certificates of equivalence issued by third parties, which have been based on the method herein;

j) Compliance with non-European standards does not satisfy the requirements above;

k) Regarding the siting of the sampler, the consultant shall submit a method statement indicating the location of the sampler. However MEPA may at its discretion ask the consultant to change the location of the sampler;

l) The sampling time shall be no less than 6 weeks and the consultant shall use a scale up factor to scale this up to a yearly average. The scale up factor shall be forwarded by MEPA to the consultant;

Baseline levels of NO_2.

m) Baseline levels of NO2 shall be determined using EN 14211:2005. The consultant may use passive diffusive tubes if it is shown that the latter are equivalence to the reference method.

n) If the consultant opts for passive diffusion tubes, he shall forward at least 1 article in a peer reviewed journal which shows that the equivalence of theses tubes has been demonstrated in at least 1 EU Member State. Equivalence should preferably, also have been demonstrated in Malta.

o) The consultant shall submit a method statement indicating the location of the sampler. However MEPA may at its discretion ask the consultant to change the location of the sampler.

p) The sampling time shall be no less than 6 weeks and the consultant shall use a scale up factor to scale this up to a yearly average. The scale up factor shall be forwarded by MEPA to the consultant.

q) The consultant shall also take traffic counts at the main junctions near the site. The number and location of the counters are to be approved by MEPA.

r) The traffic count shall take into consideration the vehicle type and the legislation class.

s) The consultant shall use an appropriate model in order to scale the traffic counts obtained during the 6 week period to AADT.

2. Modeling

a) Once the baseline levels have been obtained the consultant shall determine the impact of the project on air quality through dispersion modeling.

b) The consultant shall identify the sensitive receptors in the area.

c) The following models are deemed acceptable by MEPA:

IMMIS^{em}
BREEZE Roads.
ADMS-Urban

d) The consultant shall use the emission factors in the latest version of the Handbook of emission factors for road transport emissions. The average age of the Maltese vehicle fleet shall be taken as 13 years.

e) The consultant shall estimate the ambient background levels. The following approach shall be deemed acceptable.

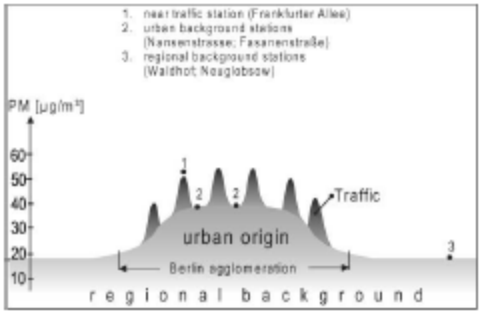

Figure 1: Horizontal profile for PM10 concentration, Lenschow et al. (2001) – *Atmospheric Environment 35,* 29-33.

f) The rural background can be captured through the use of the GAINS-EMEP model at a resolution of 50km * 50km, the urban background can be captured through the use of a model such as CHIMERE at a resolution

of 7km * 7km. The background levels of both PM10 and NO2 shall be established using an approach similar to figure 1 above.

g) The predictions of the model shall be assessed by comparing the modeled data to the monitoring data provided by the baseline studies. The modeled data must not deviate by more than ±20%.

h) The consultant shall use the model to project the PM10 and NO2 levels into the future, when the project is fully operational.

i) The consultant shall model two distinct scenarios: A) without the project and B) with the project.

j) The model shall display its output as a contour map and the concentrations at the sensitive receptors in point 21 shall be clearly labeled.

k) Any assumptions must be clearly stated by the consultant.

l) The equation below shall be applied to determine the number of daily exceedances: N = 3.8633A – 79.9523, this shall be determined for both scenarios.

m) For NO2 the consultant shall assume that the annual mean is always exceeded before the allowed number of hourly exceedances.

3. **Significance Criteria**

a) The following criteria of significance shall be used by the consultant to determine the significance of the impact:

b) For annual levels of NO2/PM10 in µg/m3.

		Change in annual NO_2/PM10 levels due to scheme (µg/m^3).		
		≥0.4 µg/m3 but < 2 µg/m3	**≥2 µg/m3 but < 4 µg/m3**	**≥4 µg/m3**
Baseline annual levels of NO_2/PM10 (µg/m^3)	> 40µg/m3	**Slightly adverse**	**Moderate adverse**	**Substantial adverse**
	≥ 36µg/m3 but < 40 µg/m3.	**Slightly adverse**	**Moderate adverse**	**Moderate adverse**
	≥ 30 µg/m3 but < 36 µg/m3	**Negligible**	**Slightly adverse**	**Slightly adverse**
	< 30 µg/m3	**Negligible**	**Negligible**	**Negligible**

c) For daily exceedances of the PM10 limit value in number of days.

		Change in the number of days of exceedance of the daily PM10 limit value as a result of the scheme (days).		
		≥1 day but < 2 days	**≥2 days but < 4 days**	**≥4 days**
	Exceeded on more than 35 days.	**Slightly adverse**	**Moderate adverse**	**Substantial adverse**

[3] Thunis et al. (2012). Linking the European scale modelling with urban and street scales. Institute for Environment and Sustainability.

Baseline exceedance of daily PM10 limit values (number of days)	**≥ 32 exceedances but < 35 exceedances.**	**Slightly adverse**	**Moderate adverse**	**Moderate adverse**
	≥ 26 exceedances but < 32 exceedances.	**Negligible**	**Slightly adverse**	**Slightly adverse**
	< 26 exceedances.	**Negligible**	**Negligible**	**Negligible**

Concluding Remark

a) The air quality study shall consider the **CUMULATIVE** impact of all development taking place and/or which is planned for the site in question irrespective of the number of separate Planning Applications involved.

b) If the applicant decides to develop a part of the site at some point in the future, then a full air quality study will be requested and this will have to consider the cumulative impact from the whole site. This requirement will apply irrespective of the incremental increase in traffic flow as a result of the latter development.

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]