



Infrastructure & Utilities Report in
Relation to an Environmental Impact
Assessment for a new Thermal
Treatment Facility (TTF)

As per ERA requirements for PA/O6O96/23

Report



INFRASTRUCTURE & UTILITIES REPORT
AIS REF. NO: **PRJ-ENV598**
CLIENT REF. NO: **CT2330/2020**
THIRD VERSION

PUBLICATION DATE
27 November 2025

PART OF  **AIS** GROUP

 AIS Environment Ltd,
AIS House, 18, St. John Street,
Fgura, FGR 1447

 +356 21803374
 www.aisenvironment.com
 info@ais.com.mt

VAT No: MT 1457-1625
Reg No: C18445



DOCUMENT REVISION HISTORY

DATE	VERSION	COMMENTS	AUTHORS / CONTRIBUTORS
26/09/2024	1.0	First Version	Elena Portelli
11/07/2025	2.0	Second Version	
27/11/2025	3.0	Second Version	Sacha Dunlop

DISCLAIMER

This report has been prepared by AIS Environment with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of WSM; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from AIS Environment. AIS Environment disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

TABLE OF CONTENTS

1	Scope	1
1.1	Project Description.....	1
2	Terms of Reference.....	3
3	Methodology	3
3.1	Area of Influence	3
3.2	Study Methodology.....	5
4	Existing Infrastructure and Utilities	5
5	Impact Assessment	9
5.1	Impact Significance Criteria	9
5.2	Construction Impacts	12
5.3	Operational Impacts	13
6	Cumulative impacts.....	15
7	Mitigation Measures, Residual Impacts and Monitoring.....	15
7.1	Mitigation Measures	15
7.1.1	Construction Phase.....	15
7.1.2	Operational Phase	15
7.2	Residual Impacts	15
7.3	Monitoring	16
8	Summary of Impacts	17
	Appendix 1.....	18

LIST OF FIGURES

Figure 1: Proposed site for the new Thermal Treatment Facility (TTF).....	2
Figure 2: Area of Influence for the infrastructure and utilities study.....	4
Figure 3: Street light around the existing ECOHIVE complex buildings	6
Figure 4: Boundary wall and fencing around the existing ECOHIVE facility buildings..	6
Figure 5: GO Mobile aerial cables within the AOI	7
Figure 6: Overview of the existing utilities within the AOI	8

LIST OF TABLES

Table 1: Existing infrastructures and utilities	5
Table 2: Criteria for the sensitivity of resources to impact	9
Table 3: Criteria for the consequences of impact	9
Table 4: Criteria for the effect of impact	10
Table 5: Criteria for the severity of impact	10
Table 6: Criteria for the physical extent of the impact.....	10
Table 7: Duration of impact	11
Table 8: Criteria for the reversibility of the impact	11
Table 9: Criteria for the probability of impact occurring	11
Table 10: Criteria for the overall impact significance	12
Table 11: Summary of expected impacts on the proposed Scheme	17

1 SCOPE

This report describes the Infrastructure & Utilities impacts arising from the construction and operation of the proposed development of a new Thermal Treatment Facility (TTF). The facility is being proposed for the incineration of hazardous waste, and is hereafter referred to as 'the Scheme'. The proposed development will form part of the ECOHIVE Complex and will operate in conjunction with the other waste management facilities at Maghtab.

This technical study identifies any infrastructure and utilities in the area and assesses the impacts caused in relation to the EIA for the proposed development, in line with the requirements issued by the ERA for EA/00020/22.

1.1 PROJECT DESCRIPTION

This scheme is being proposed to establish a new hazardous waste incineration plant as part of a strategy to centralise all the major waste operations carried out by Wasteserv Malta at one location. The project entails the construction of a new hazardous waste incineration plant with two independent lines, and space for a potential third independent line in the future. The proposed development will form part of the ECOHIVE Complex and will operate in conjunction with the other waste management facilities at Maghtab.

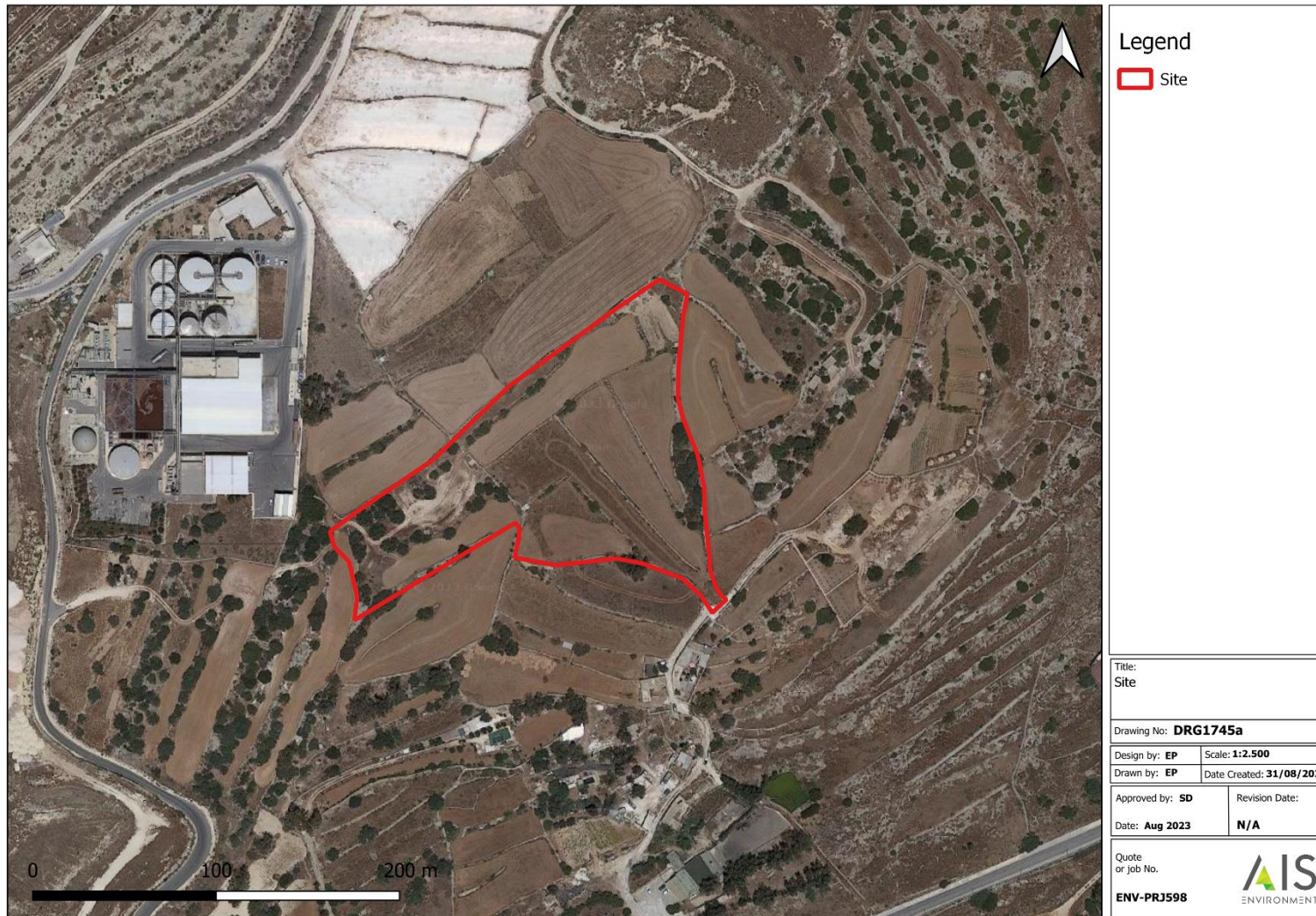


FIGURE 1: PROPOSED SITE FOR THE NEW THERMAL TREATMENT FACILITY (TTF)

2 TERMS OF REFERENCE

The Terms of Reference related to the study on land cover and land uses for the EIA were issued by the ERA in June 2024.

Appendix 1 of this report contains a copy of the ToRs for ease of reference.

3 METHODOLOGY

This report presents the baseline land cover and land uses data sampled from the Area of Influence (AoI). The methodology was composed of four main elements:

1. A preliminary desktop study to familiarise oneself with the study area;
2. A site survey;
3. A secondary literature review to combine the findings of the initial research and site observations;
4. Final evaluation of the current situation.

An assessment of the potential impacts of the Scheme on land cover and land uses was carried out once the baseline was established (refer to Section 5 for further detail).

3.1 AREA OF INFLUENCE

The Area of Influence (AOI) for the terrestrial component of the study comprised of a 100m buffer zone around the proposed site for the development. The AOI is mapped in Figure 2.



FIGURE 2: AREA OF INFLUENCE FOR THE INFRASTRUCTURE AND UTILITIES STUDY

3.2 STUDY METHODOLOGY

This study describes the existing infrastructures and utilities present within the project footprint and surroundings and outlines any proposed changes. The baseline research for the Infrastructure and Utilities Study was divided into two main components.

The first part of the study involved a thorough literature review to identify the existing infrastructure and utilities within the Scheme site and surrounding area. The information was gathered from third party utility providers and review of satellite images from sources such as Landsat/Copernicus (Google Earth). The findings from the desktop study were then verified through a field survey carried out in July 2024 which also included the gathering of photographic evidence.

Once the Consultant completed both aforementioned components, they mapped the existing infrastructure and utilities as well as any proposed changes (if applicable) using Geographic Information Systems Software (GIS).

4 EXISTING INFRASTRUCTURE AND UTILITIES

Table 1 below provides an outline of the existing and/or planned infrastructure and utilities present within the AoI.

TABLE 1: EXISTING INFRASTRUCTURES AND UTILITIES

FEATURE NAME	FEATURE TYPE	OWNER
Street lighting	Underground cables, street lamps	Wasteserv Malta
Fencing	Boundary wall and mesh fencing	Wasteserv Malta
Power cables	Underground power cables	Enemalta
Internet cables	Aerial internet cables	GO Mobile

Figure 3 to Figure 5 provide photographic evidence of the infrastructure and utilities observed during the site survey held in July 2024.



FIGURE 3: STREET LIGHT AROUND THE EXISTING ECOHIVE COMPLEX BUILDINGS



FIGURE 4: BOUNDARY WALL AND FENCING AROUND THE EXISTING ECOHIVE FACILITY BUILDINGS



FIGURE 5: GO MOBILE AERIAL CABLES WITHIN THE AOI

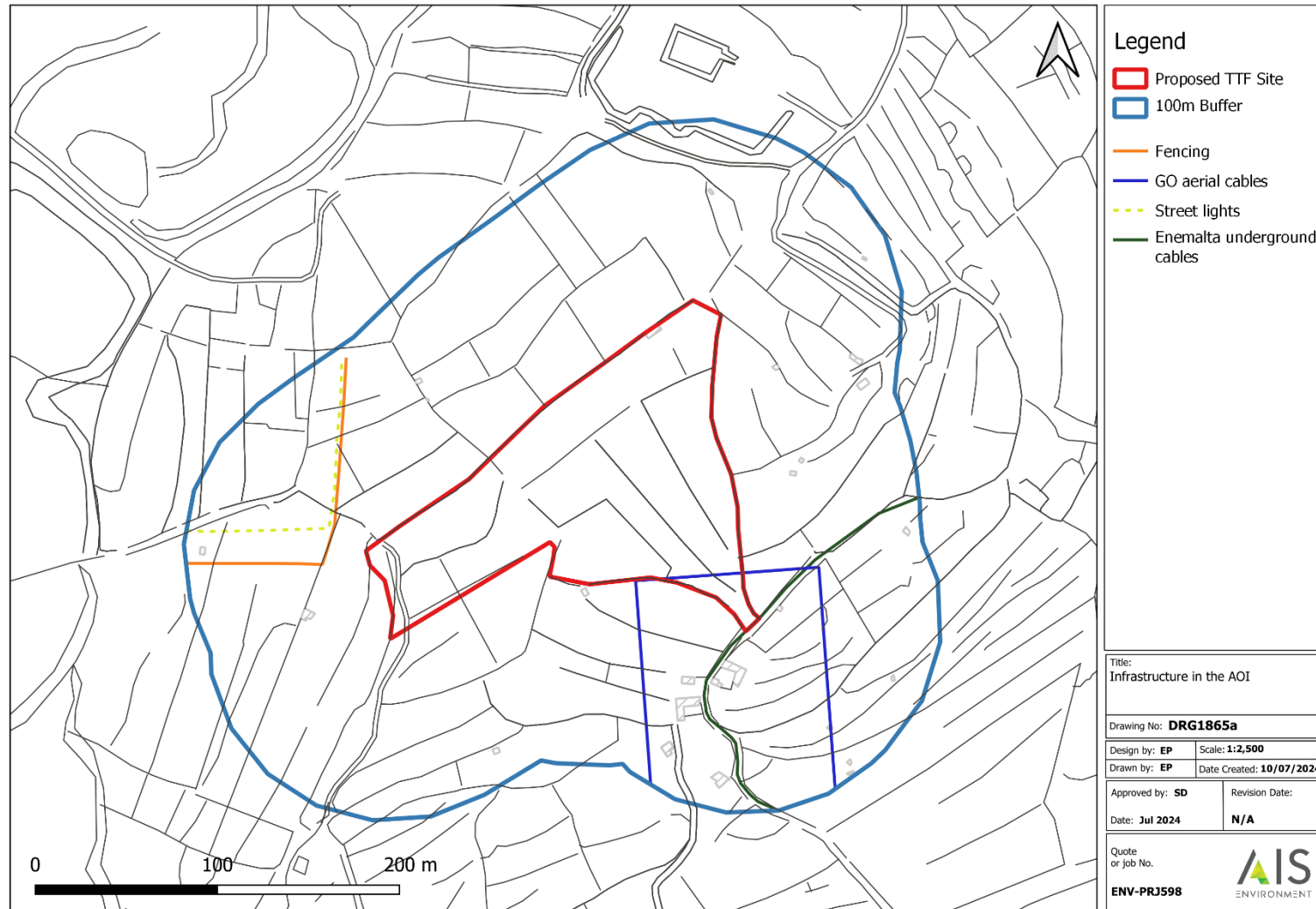


FIGURE 6: OVERVIEW OF THE EXISTING UTILITIES WITHIN THE AOI

5 IMPACT ASSESSMENT

The following is a description of the potential impacts on the infrastructure and utilities of the AoI.

5.1 IMPACT SIGNIFICANCE CRITERIA

The qualitative assessment determines the potential impacts on infrastructure and utilities arising from the proposed development. The potential impacts that may arise from the Scheme are limited to the potential physical damage on the existing infrastructure and utilities and service interruptions during the proposed works. The tables below (Table 2 to Table 10) provide a definition for each of the criteria used in Table 11, which summarises the assessment of impacts on infrastructure and utilities.

TABLE 2: CRITERIA FOR THE SENSITIVITY OF RESOURCES TO IMPACT

SENSITIVITY OF RECEPTORS TO IMPACT	
LEVEL	DEFINITION
High	The receptors which will be highly sensitive to the impact and consequently impacted to a major degree.
Medium	The receptors which will be moderately sensitive to the impact and consequently impacted to a moderate degree.
Low	The receptors which will be minimally sensitive to the impact and consequently impacted to a minor degree.

TABLE 3: CRITERIA FOR THE CONSEQUENCES OF IMPACT

CONSEQUENCES OF IMPACT	
LEVEL	DEFINITION
Direct	Changes that result from direct cause-effect consequences of interactions between the result of action under consideration and the proposed project.
Indirect	Result from cause-effect consequences of interactions between the action under consideration and indirect impacts.
Cumulative	Result from cause-effect consequences of interactions between the action under consideration and other related projects.

TABLE 4: CRITERIA FOR THE EFFECT OF IMPACT

EFFECT OF IMPACT	
LEVEL	DEFINITION
Adverse	Infrastructure and utilities would suffer consequences as a direct result of the proposed development.
Beneficial	Infrastructure and utilities would benefit as a direct result of the proposed development.

TABLE 5: CRITERIA FOR THE SEVERITY OF IMPACT

SEVERITY OF IMPACT	
LEVEL	DEFINITION
High	This action is a major contributor to the infrastructure and utilities in the area of influence.
Medium	This action is a moderate contributor to the infrastructure and utilities in the area of influence.
Low	This action is a minor contributor to the infrastructure and utilities in the area of influence.

TABLE 6: CRITERIA FOR THE PHYSICAL EXTENT OF THE IMPACT

PHYSICAL EXTENT OF IMPACT	
LEVEL	DEFINITION
Local	Impact would affect the areas in the nearby surroundings.
National	Impact would affect Malta on a national scale.
International	Impact would affect Malta and/or other countries.

TABLE 7: DURATION OF IMPACT

DURATION OF IMPACT	
LEVEL	DEFINITION
Permanent	Impact would still be detectable after the concerned phase.
Temporary	Impact would not persist through the whole duration of the concerned phase.

TABLE 8: CRITERIA FOR THE REVERSIBILITY OF THE IMPACT

REVERSIBILITY OF IMPACT	
LEVEL	DEFINITION
Reversible	State of the activity/action is potentially expected to return to baseline background level following cessation of the source of impact.
Irreversible	Impact is expected to cause partial or total destruction of the action under consideration and a return of the state of the resource to baseline levels should be considered highly improbable.

TABLE 9: CRITERIA FOR THE PROBABILITY OF IMPACT OCCURRING

PROBABILITY OF IMPACT OCCURRING	
LEVEL	DEFINITION
Inevitable	Level of certainty that impact will occur is greater than 90%
Likely	Level of certainty that impact will occur ranges between 50-90%
Unlikely	Level of certainty that impact will occur ranges between 30-50%
Remote	Level of certainty that impact will occur is below 30%

TABLE 10: CRITERIA FOR THE OVERALL IMPACT SIGNIFICANCE

IMPACT SIGNIFICANCE	
LEVEL	DEFINITION
Not significant	Negligible significance.
Minor significance	Low order impact and therefore likely to have little real effect on infrastructure and utilities. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both.
Moderate significance	Impact on infrastructure and utilities is real but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly easily possible.
Major significance	Of the highest order possible within the bounds of impacts on infrastructure and utilities that could occur. In the case of adverse impacts, there is little or no possible mitigation that could offset the impact.

5.2 CONSTRUCTION IMPACTS

During the construction phase accidental damages may occur to the pre-existing infrastructure and utilities present within close proximity of the site development. No infrastructure or utilities exist directly within the development's footprint.

Second Interconnector

The route for the planned second interconnector does not run through the site of the scheme or the surrounding 100m buffer zone. The construction related to the second interconnector is scheduled to commence in 2026, and conclude in 2028. The site of the Scheme is separated from the route of second interconnector by a considerable distance, therefore the likelihood of potential of impacts of the Scheme construction on the second interconnector within is considered insignificant.

Construction vehicles related to the Scheme will access the site from the South gate, where works on the second interconnector are also envisaged. In this area, the precautions already planned for the protection of the second interconnector from construction vehicles and others apply. No further mitigation measures are required as a result of the planned development at this Scheme.

ECOHIVE complex – Existing Infrastructure

The Scheme's footprint encroaches agricultural land which has been cleared and is confirmed to not contain any infrastructure. However, within the buffer area, several

utility features are currently present. The adjacent buildings within the ECOHIVE complex are surrounded by fencing. Street lamps are also present to illuminate the access road surrounding these buildings. These utilities are owned by Wasteserv Malta. Some items are in need of repairs and/or replacement.

Prior to the commencement of works, the chosen contractor needs to liaise with Wasteserv Malta to confirm which infrastructure is to be retained, thus eliminating the possibility of accidental damages to functioning utilities. Additionally, indirect impacts may occur through dust generated by the construction operations. Should the Contractor accidentally damage such infrastructure, they must report any damage to Wasteserv Malta and operators to coordinate a prompt repair operation at the Contractor's expense. Since the impact is known and can be prevented through a series of discussions and consultations, the envisaged impact is considered adverse and of minor significance.

ECOHIVE complex – New Infrastructure

During the construction phase, connections between the proposed development and the water and electricity amenities pre-existing within the ECOHIVE complex will need to be set up. This may cause temporary interruptions to the water and/or electricity supply within the ECOHIVE complex. Since these interruptions are expected to be localised and temporary, the impact is considered as adverse but of minor significance.

Other third-parties - Existing Infrastructure

All utility companies related to telecommunications, sewers, potable water systems, and power supply were contacted to confirm whether they own any infrastructure within the proposed site and/or a 100m buffer (See 3.1). With the exception of Enemalta and GO Mobile, all entities confirmed that no infrastructure is present within the site to be developed or its boundary. Enemalta confirmed a supply of underground electrical cables servicing the small group of buildings present to the South-East of the scheme site, while GO Mobile confirmed there are overhead internet cables within the same area. The latter were confirmed visually during the site visit held in July 2024 (See Figure 5).

The proposed TTF building and these infrastructure elements are present at some distance apart. Close liaison between the contractor and the cable owners will be maintained throughout the construction to establish working methods that would safeguard these existing infrastructures. Therefore, the presumed impacts from the scheme are considered to be negligible.

5.3 OPERATIONAL IMPACTS

The operation of the Scheme will expand the ECOHIVE's current capacity to process waste with the additional of thermal treatment of hazardous waste. The proposal contains an additional waste processing line intended to enable further increases in

capacity to cater for projected increasing demands over time. This constitutes a major beneficial impact towards Malta's national waste management targets.

As a result, the complex will experience a higher flow of traffic to and from the site area. This heightened activity is not expected to exert any significant impacts on the surrounding infrastructure and utilities.

6 CUMULATIVE IMPACTS

As the proposed TTF site currently lacks any significant infrastructure or utility services, the cumulative impact on on-site features is considered negligible. However, integration of the facility with the broader ECOHIVE complex will require the establishment of new tie-in points to connect to existing infrastructure and utility networks. While this may introduce additional loads and operational stresses on shared systems, these impacts are anticipated to be minor and manageable.

To ensure seamless integration and minimise potential disruptions, coordinated discussions will be undertaken between the project proponents, relevant stakeholders, and third-party utility and service providers. This collaborative approach will support the development of suitable technical solutions and ensure that the project can be implemented with minimal interference to existing operations.

The expansion of hazardous waste treatment capacity will strengthen Malta's overall waste management infrastructure. This enhancement is expected to generate positive cumulative effects by increasing national self-sufficiency and reducing reliance on the export of hazardous waste for treatment abroad.

7 MITIGATION MEASURES, RESIDUAL IMPACTS AND MONITORING

7.1 MITIGATION MEASURES

7.1.1 Construction Phase

During the construction phase, a range of mitigation measures should be implemented to reduce the likelihood of adverse impacts to negligible and/or minor significance, upon the existing local infrastructures and utilities. Recommended mitigation measures include:

- Liaising with the operators of the existing infrastructure and utilities of the proposed work to open up communication channels.
- Taking extra precautions when working in close proximity to existing infrastructures and utilities to avoid accidental damage.
- Informing Wasteserv Malta of any accidental damage to existing infrastructure and utilities so that damages can be repaired at the expense of the Contractor.
- Site hoarding and other dust mitigation measures should be implemented as necessary to avoid indirect impacts from dust accumulation on existing infrastructure.

7.1.2 Operational Phase

The operational phase is not expected to give rise to any significant impacts.

7.2 RESIDUAL IMPACTS

If the Contractor works with care, adopts extra precautions around the existing infrastructure and utilities and carries out any accidental repair work correctly

(should the need arise) there should be no significant residual impacts arising from the Scheme on the existing utilities and infrastructure.

7.3 MONITORING

If the Contractor accidentally damage the infrastructure and utilities during the construction phase, a technically competent person should oversee the repair work. This will ensure that the repair work is up to standard and restores the damaged items to their original state with the least possible inconvenience.

Monitoring of infrastructure and utilities is not required during the operational phase.

8 SUMMARY OF IMPACTS

TABLE 11: SUMMARY OF EXPECTED IMPACTS ON THE PROPOSED SCHEME

IMPACT TYPE AND SOURCE			IMPACT RECEPTOR		EFFECT AND SCALE							PROBABILITY OF IMPACT OCCURRING	OVERALL IMPACT SIGNIFICANCE	PROPOSED MITIGATION MEASURES	RESIDUAL IMPACT SIGNIFICANCE	OTHER REQUIREMENTS
IMPACT TYPE	SPECIFIC INTERVENTION LEADING TO IMPACT	PROJECT PHASE	RECEPTOR TYPE	SENSITIVITY TOWARDS IMPACT	DIRECT/ INDIRECT/ CUMULATIVE	BENEFICIAL/ ADVERSE	SEVERITY	PHYSICAL/ GEOGRAPHIC EXTENT OF IMPACT	SHORT/ MEDIUM/ LONG TERM	TEMPORARY/ PERMANENT	REVERSIBLE/ IRREVERSIBLE					
Potential interruptions of second interconnect or cable	Dust-generating activities, traffic	Construction	National power supply	High	Direct & Indirect	Adverse	High	National	Medium	Temporary	Reversible	Remote	Negligible	N/A	Negligible	N/A
Damage to existing infrastructure/utilities	Mechanical damage	Construction	Existing infrastructure and utilities within the access route	High	Direct	Adverse	Low	Local	Short	Temporary	Reversible	Unlikely	Moderate	Liaison between WSM and contractor, Precautions taken	Minor	N/A
Damage to existing infrastructure /utilities	Dust-generating activities	Construction	Existing infrastructure and utilities within the buffer zone	Medium	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor	Liaison between WSM and contractor, Dust-mitigation measures	Negligible	N/A
Interruptions to water and electricity supply	Connection of services to electricity grid & water network	Construction	Existing facilities within the ECOHIVE complex	Medium	Direct	Adverse	Medium	Local	Short	Temporary	Reversible	Inevitable	Minor	Liaison between WSM and contractor	Negligible	N/A
Improved capacity to treat hazardous waste	Operation of a new TTF	Operations	Existing waste management capacity	High	Direct	Beneficial	High	National	Long	Permanent	Irreversible	Inevitable	Major	N/A	Major	N/A

APPENDIX I

TERMS OF REFERENCE

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 (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 (e.g. Water Framework Directive and Marine Strategy Framework Directive) may need to be factored into more than one aspect of the discussion.

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.

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 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.*

5.0 REQUIRED MEASURES, IDENTIFICATION OF RESIDUAL IMPACTS, AND MONITORING PROGRAMMES

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 following circumstances, as relevant:

- 1. Removal of any temporary or defined-lifetime development (or of any structures, infrastructure or land use required temporarily in connection with it) upon the expiry of their permitted duration; and*
- 2. Removal of the development (or of any secondary developments, infrastructure or land use ancillary to it) in the event of redundancy, 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.

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 noncompliances 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. archaeological excavations, 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 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 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 3 – attached to Method Statement as Appendix 1.