



Infrastructure & Utilities Study in
Relation to the Redevelopment of the
Ex-Jerma Palace Hotel EIA
As per ERA requirements for PA/00437/23

Report



INFRASTRUCTURE & UTILITIES
AIS REF. No: **S00029**
CLIENT REF. No: **PA/00437/23**
FIRST VERSION

PUBLICATION DATE
09 September 2026

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DOCUMENT REVISION HISTORY

DATE	VERSION	COMMENTS	AUTHORS / CONTRIBUTORS
09/09/2026	1.0	First Version	Susannah Farrugia

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1 INTRODUCTION

This method statement outlines the requirements for the study on infrastructure and utilities, to fulfil the Environmental Impact Assessment (EIA) Terms of Reference (TORs) issued by the ERA for PA/00437/23 in May 2024.

The proposal also consists of the construction of a two-storey basement below the landscaped public plaza and two eight storey blocks above the plaza, extensive landscaping works, repairs and changes to the existing coastal defences and the construction of a swimming pool on the existing concrete platform below the project (PA/00437/23).

1.1 PROJECT DESCRIPTION

The proposed facility incorporates the demolition of the ex-Jerma Palace Hotel, the excavation of the site and construction of a mixed-use resort.

The Jerma Palace Hotel started its operations in 1982 which ended abruptly in 2007 after the ownership of a Libyan Foreign Investment Company ended. The Hotel consisted of 345 rooms and was originally run by Corinthia Hotels International. Since 2008, the abandoned hotel has been vandalised, greatly damaged, littered and is currently considered an eyesore at Marsaskala's coastline.

The Scheme is being proposed to add recreational and economic value to the area. The entire footprint of the site is 44,812m², but only around 17,570m² will be developed. The remainder of the site comprises of a coastal zone with natural bare rock, salt pans, derelict buildings, disturbed land and public streets.



FIGURE 1: PROPOSED SITE FOR THE EX-JERMA PALACE REDEVELOPMENT

2 TERMS OF REFERENCE

The ERA issued the Terms of Reference related to the study on infrastructure and utilities for the EIA in May 2024. Appendix 1 of this report contains a copy of the ToRs for ease of reference.

3 METHODOLOGY

This report describes the existing infrastructures and utilities present within the project footprint and surrounding area and outline any proposed changes. The baseline research for the Infrastructure and Utilities Study was divided into three main components:

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

3.1 AREA OF INFLUENCE

The Area of Influence (AOI) for the infrastructure and utilities study comprises of a 100m buffer zone around the location of the proposed redevelopment. The AOI is mapped in Figure 2.



FIGURE 2: AREA OF INFLUENCE FOR INFRASTRUCTURE AND UTILITIES STUDY

3.2 STUDY METHODOLOGY

This study describes the existing infrastructure and utilities present with 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 consisted of 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 will then be verified through a field survey (the second component), which will also include the gathering of photographic evidence.

After completion of the aforementioned components, the existing infrastructure and utilities as well as any proposed changes (if applicable) were mapped using Geographic Information Systems Software (GIS).

4 BASELINE CONDITIONS

Table 2 below provides an outline of the existing and/or planned infrastructure and utilities present with the AoI.

TABLE 1: EXISTING INFRASTRUCTURE AND UTILITIES

FEATURE NAME	FEATURE TYPE	OWNER
Aerial Power cables	Aerial power cables	Enemalta
Underground Power cables	Underground power cables	Enemalta
Telecommunication cables	Underground and aerial cables	GO Mobile, Melita
Potable water	Underground potable water pipes	Water Services Corporation
Waste water	Underground wastewater pipes	Water Services Corporation
Water gutter	Water gutter	Water Services Corporation

All utility companies related to telecommunications, sewers, potable water systems, and power supply were contacted to confirm whether they own infrastructure within the proposed site and/or a 100m buffer. Enemalta confirmed the presence of both aerial and underground electricity cables within the AOI which were also confirmed visually on March 2025.

Moreover, Melita and Go Mobile confirmed that underground and aerial cables are present as marked in Figure 2.

Water services confirms the presence of potable water pipes within the AOI and to the north side of the site while waste water is distributed along all public roads within the AOI and the site as shown in Figure 2.



FIGURE 3: WATER GUTTER WITHIN THE PROPOSED SITE BOUNDARY



FIGURE 4: AERIAL CABLES IN AOI

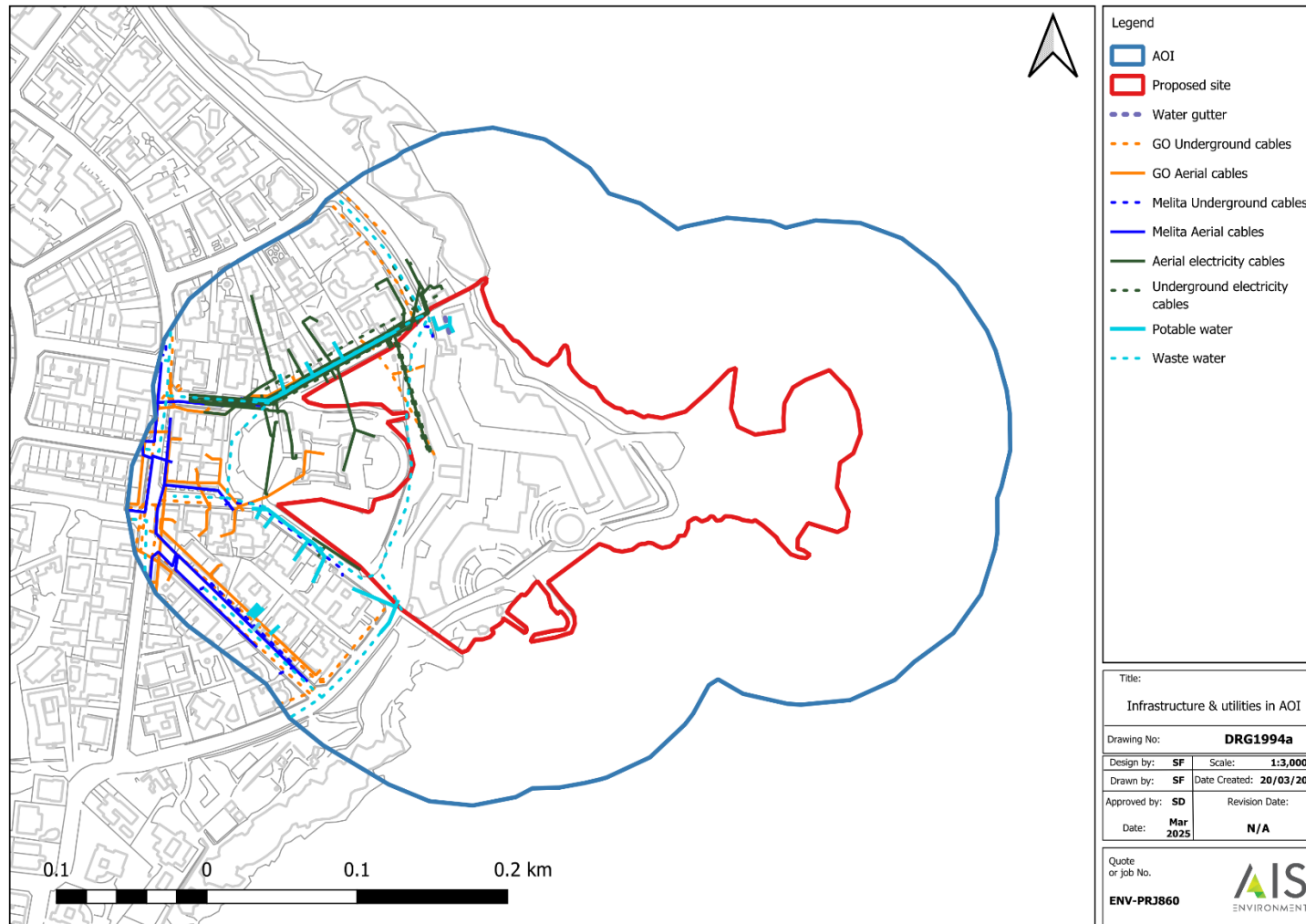


FIGURE 5: INFRASTRUCTURE AND UTILITIES IN AOI

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

Some of the infrastructure and utilities present in the area exists directly within the development's footprint. This includes electricity cables, underground internet cables and potable water pipes. Consequently, there are potential risks during the construction phase, whereby accidental damages may occur to the pre-existing infrastructure and utilities present within close proximity especially to those surrounding the perimeter and/or overlapping the scheme site.

5.2.1 Electricity Infrastructure

Within the site boundary, construction activities such as site clearance, demolition, excavation, foundation works, basement construction, above-ground construction and the operation of heavy machinery present several potential risks to Enemalta's electricity infrastructure. Underground cables may be affected by accidental damage during excavation, trenching, or piling works, particularly if cable depths or alignments are inaccurately recorded. Loading from construction plant or material stockpiling above cable routes may affect Enemalta cables by potentially exceeding design tolerances. Aerial cables and associated infrastructure (poles, stays, transformers) may be impacted by collision risks from cranes, concrete pumps, scaffolding, or elevated construction vehicles. Oversailing during lifting operations may also affect aerial cables, particularly where cranes operate close to site boundaries, and ground works near poles could undermine their structural stability.

Dust from construction could also settle on power lines, potentially causing corrosion, overheating, and short circuits. Overall damage or disturbance to electricity infrastructure could result in temporary power outages, safety hazards to workers, and disruption to surrounding properties. Vibrations from heavy machinery or compaction works, which may cause gradual displacement or stress on buried cables and joints, even on those present within the AoI but outside the site boundary.

Considering that aerial and underground electricity cables are mostly present outside the site boundary with a slight overlap of cables on the north side of the site, and hence its exposure to direct and indirect construction-related risks, construction phase impacts are assessed as **minor adverse** within/along the site boundary, negligible to **minor adverse** to electricity infrastructure within the surrounding AOI.

5.2.2 Telecommunication cables

Telecommunications infrastructure is distributed along most of the surrounding road within the AOI as well as on private property making it particularly vulnerable during construction. Underground fibre-optic and communication cables present within the site boundary may be impacted by excavation for foundations, services, or drainage works, especially where cable protection (ducts or marker tapes) is absent or poorly recorded. Micro-vibrations from piling and compaction may affect sensitive fibre connections, potentially causing latent faults that manifest after construction. Accidental severance leading to immediate loss of service, can affect residential users, commercial activities, and emergency communications. No aerial cables overlap with the site boundary however, several cables near the boundary of the scheme site may be affected by contact with lifting equipment, temporary removal or relocation requirements where cables conflict with building elevations or façade works, and increased tension or misalignment if poles or anchor points are disturbed during nearby ground works. Dust from construction could also settle on aerial cables, potentially causing signal interference.

Due to the presence of multiple telecommunications cables along the Scheme boundary, combined with their shallow depth, extensive distribution, and sensitivity, particularly in the case of fibre-optic systems, there is quite a susceptibility to damage from excavation and vibration. Consequently, construction-phase impacts along the site boundary are assessed as **moderate adverse**.

Telecommunication infrastructure within the 100 buffer but outside the site are in close proximity to the works especially on Triq it-Torri and Triq is-Salini. Vibrations or ground disturbances are to possibly affect underground and aerial systems causing temporary access restrictions. Therefore, such effects are considered to be of **minor to moderate adverse**.

5.2.3 Potable Water Infrastructure

Potable water infrastructure is present within the site boundary as well as the AOI. Therefore, a risk of impact during construction is possible such as accidental damage

of mains and breakages of pipes which may pose future constraints on the existing network.

Considering that the potable water network is present within the site boundary and hence the probability of direct functional disruption including risks to structural damage, ground instability, and future constraints is likely. However, given that fact that very limited pipelines are present within the boundary the impacts within the site boundary are assessed to be **minor adverse**. Potable water infrastructure within the 100 m buffer is generally located in close proximity to the site such therefore increasing the likelihood of indirect impacts. Effects such as vibration or ground movement may be of sufficient magnitude to affect these utilities potentially leading to significant interaction pathways. Therefore, impacts within the wider AoI are considered **minor to moderate adverse**.

5.2.4 Wastewater Infrastructure

Waste water infrastructure is present extensively within the AOI including a single pipeline along Triq is-Salini within the west side of the site. Therefore, a risk of impact during construction is possible especially towards the north, west and southern boundaries of the site. Accidental damage of sewage pipes which may cause damage and disruption to the waste water pipeline may occur during excavation works and mobilisation of heavy machinery.

Overall, taking into account the presence of wastewater underground pipelines within the site boundary construction-phase effects are assessed as **minor to moderate adverse**. In the case of those present within the AOI and their proximity to the site boundary, the associated construction-phase impacts are considered **minor adverse**.

5.3 OPERATIONAL IMPACTS

The operational reconstruction of the dilapidated ex-Jerma Hotel, will result in an increased demand of electricity, water and telecommunication infrastructure within the area.

5.3.1 Electricity Infrastructure

Electricity infrastructure is expected to increase significantly due to the construction of accommodation units including hotel rooms, apartments, spas, restaurants and retail outlets. These additional loads are expected to be accommodated within the network capacity following the necessary upgrades subject to continued coordination with utility providers and implementation of appropriate demand and operational management measures to ensure reliable service provision. These impacts are expected to be **minor adverse**.

5.3.2 Telecommunication Infrastructure

Mixed-use developments such as the current proposed scheme bring about an increase in telecommunication demand due to multiple land-use types, high guest density and continuous operations. Such operations require a fast, reliable and

secure connectivity. These additional loads are expected to be accommodated within the network capacity following the necessary upgrades subject to continued coordination with utility providers and implementation of appropriate demand and operational management measures to ensure reliable service provision. These impacts are expected to be **minor adverse**.

5.3.3 Water Infrastructure

Water use and wastewater generation is expected to increase especially due to the construction of spa facilities, several accommodation outlets and catering establishments. These additional loads are not expected to be accommodated within the capacity present around the site. Major upgrades are required to be carried out subject to continued coordination with utility providers and implementation of appropriate demand and operational management measures to ensure reliable service provision. These impacts are expected to be **moderate adverse**.

5.3.4 Cumulative Impacts

The area surrounding the development consists of small-scale, residential settlement and a newly constructed Museum at San Tumas Tower. The integration of new infrastructure with regional networks may contribute to cumulative loading on shared systems, particularly where other developments in the area are also expanding. However, according to publicly sourced data, no additional large-scale developments are being proposed or expanded within the area of influence. Such impacts are therefore to be of minor adverse and manageable through coordinated planning with service providers and the implementation of appropriate technical solutions.

6 MITIGATION MEASURES, RESIDUAL IMPACTS AND MONITORING

6.1 MITIGATION MEASURES

6.1.1 Construction Phase

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

- Prior to commencement of works, the contractor will be required to undertake a detailed utilities survey and liaise with all relevant service providers to confirm the location, status, and retention requirements of existing infrastructure. This process will inform the preparation of method statements that ensure safe working practices and prevent accidental damage.
- Throughout construction, close coordination will be maintained with utility owners to safeguard assets and agree on any temporary protection measures. In the event of accidental damage, the contractor will be obliged to notify the relevant operator immediately and facilitate prompt repair at their own expense.
- 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 service providers/operators 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

6.1.2 Operational Phase

The proposed scheme requires robust and resilient infrastructure systems to ensure reliable operations across all components of the site. Given the coastal environment, all infrastructure should be protected against corrosion and flooding, and monitored through a centralised management system that enables early detection of issues and proactive maintenance. Telecommunications should incorporate redundant high-capacity connections, secure network segmentation, and corrosion-resistant equipment, with careful coordination to avoid overloading local ISP routes or diminishing service quality for neighbouring communities. Moreover, water infrastructure must include adequate storage, reliable supply arrangements, and effective leak-detection measures, while wastewater systems should be designed to manage restaurant effluent, prevent flooding, and maintain hygienic conditions. Electrical systems should incorporate backup and renewable energy resources,

protective equipment, and load-management strategies to ensure continuity during disruptions.

6.2 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.

6.3 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.

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.

APPENDIX 2

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					
Damage to existing electrical infrastructure	Mechanical damage	Construction	Electrical infrastructure within access route and site boundary	Medium	Direct	Adverse	Medium	Local	Short	Permanent	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor, Precautions taken	Negligible	N/A
Corrosion, overheating, and short circuits of existing electrical infrastructure	Dust-generating activities	Construction	Electrical infrastructure along site boundary	Medium	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor, Dust-mitigation measures	Negligible	N/A
Damage to existing electrical infrastructure	Vibration	Construction	Electrical infrastructure along site boundary	Medium	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor, Dust-mitigation measures	Negligible	N/A
Corrosion, overheating, and short circuits of existing electrical infrastructure	Dust-generating activities	Construction	Electrical infrastructure within buffer zone	Low	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor, Dust-mitigation measures	Negligible	N/A
Damage to existing electrical infrastructure	Vibration	Construction	Electrical infrastructure within buffer zone	Low	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor, Dust-mitigation measures	Negligible	N/A

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					
Damage to existing telecommunications infrastructure	Mechanical damage	Construction	Telecommunications infrastructure within access route and site boundary	Medium	Direct	Adverse	Medium	Local	Short	Permanent	Reversible	Unlikely	Moderate	Liaison between service providers/operators and contractor, Precautions taken	Minor	N/A
Signal interference of existing telecommunications infrastructure	Dust-generating activities	Construction	Telecommunications infrastructure along site boundary	Medium	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Moderate	Liaison between service providers/operators and contractor, Dust-mitigation measures	Minor	N/A
Damage to existing telecommunications infrastructure	Micro vibrations	Construction	Telecommunications infrastructure along site boundary	Medium	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Moderate	Liaison between service providers/operators and contractor, Dust-mitigation measures	Minor	N/A
Signal interference of existing telecommunications infrastructure	Dust-generating activities	Construction	Telecommunications infrastructure within buffer zone	Low	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor Moderate	Liaison between service providers/operators and contractor, Dust-mitigation measures	Moderate	N/A
Damage to existing telecommunications infrastructure	Micro vibrations	Construction	Telecommunications infrastructure within buffer zone	Low	Indirect	Adverse	Medium	Local	Short	Temporary	Reversible	Unlikely	Minor Moderate	Liaison between service providers/operators and contractor, Dust-mitigation measures	Moderate	N/A
Damage to existing potable water infrastructure	Mechanical damage	Construction	Existing potable water infrastructure within site and along site boundary	Low	Direct	Adverse	Low	Local	Short	Permanent	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor, Precautions taken	Negligible	N/A
Damage to existing potable water infrastructure	Vibration	Construction	Existing potable water infrastructure within buffer zone	Low	Indirect	Adverse	Low	Local	Short	Temporary	Reversible	Unlikely	Minor Moderate	Liaison between service providers/operators and contractor	Minor	N/A

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					
Damage to existing wastewater infrastructure	Accidental impact during excavation/piling works	Construction	Existing wastewater infrastructure within site	Medium	Direct	Adverse	Low	Local	Short	Temporary	Reversible	Unlikely	Minor Moderate	Liaison between service providers/operators and contractor	Minor	N/A
Damage to existing wastewater infrastructure	Vibration	Construction	Existing wastewater infrastructure within buffer zone and on site	Low	Direct	Adverse	Low	Local	Short	Temporary	Reversible	Unlikely	Minor	Liaison between service providers/operators and contractor	Negligible	N/A
Interruptions to water, telecommunications and electricity supply	Connection of services to electricity grid, telecommunications services & water network	Construction	Existing facilities in on site	Low	Direct	Adverse	Medium	Local	Short	Temporary	Reversible	Likely	Minor	Liaison between service providers/operators and contractor	Negligible	N/A
Interruptions to water, telecommunications and electricity supply	Connection of services to electricity grid, telecommunications services & water network	Construction	Existing facilities in immediate vicinity of Scheme	Medium	Direct	Adverse	Medium	Local	Short	Temporary	Reversible	Likely	Moderate	Liaison between service providers/operators and contractor	Minor	N/A
Overloading of infrastructure and utility services	Increased demand due to new development	Operational	Existing infrastructure and utilities within site and surroundings	Medium	Direct	Adverse	Medium	Local	Long-term	Permanent	Reversible	Likely	Minor	Appropriate traffic management measures, ongoing coordination with utility providers, renewable energy, phased connection to utility networks.	Minor	Coastal erosion endurance

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					
Cumulative demand on infrastructure and utility loads	Cumulative impact of multiple developments in the same area	Operational	Existing infrastructure and utilities within area	Medium	Direct	Adverse	Medium	Local	Long-term	Permanent	Reversible	Likely	Moderate	Appropriate traffic management measures, ongoing coordination with utility providers, phased connection to utility networks.	Minor	Coastal erosion endurance measures