**GFE 00003/09**

# DEVELOPMENT OF A TECHNOLOGY ENTERPRISE CENTRE LEADING TO A LIFE-SCIENCES PARK

**AT**

**SAN ĠWANN INDUSTRIAL ESTATE,**
**SAN ĠWANN**

## *TERMS OF REFERENCE*

FOR THE PREPARATION OF AN

## *ENVIRONMENTAL PLANNING STATEMENT*

---

TERMS OF REFERENCE FOR THE PREPARATION OF AN

ENVIRONMENTAL PLANNING STATEMENT FOR THE PROPOSED

**GFE 00003/09: DEVELOPMENT OF A TECHNOLOGY ENTERPRISE CENTRE LEADING TO A LIFE-SCIENCES PARK**

**AT SAN ĠWANN INDUSTRIAL ESTATE, SAN ĠWANN**

---

**Note 1**: "*Environmental Impact Assessment is the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposals prior to major decisions being taken and commitments made*" (IAIA, 1999)[1]. The EIA is to document clearly and impartially the impacts of the proposal, the proposed mitigation measures and impact significance. In accordance with best practice, this shall be carried with professionalism, rigour, fairness, objectivity, impartiality and balance.

**Note 2**: The Malta Environment and Planning Authority (MEPA) reserves the right to request additional studies should the findings of the EPS not be sufficient to adequately inform the decision making process or if the EPS identifies matters which should be subject to further (or new) studies.

All requirements set out in these terms of reference must be complied with. If there are any sections that the consultant deems that they are not relevant to this study, the consultant shall inform MEPA accordingly fully justifying his/her reasoning.

Should, during the process of the EPS the consultant discover that any environmental feature/s, not included in these Terms of Reference needs to be studied, the consultant shall inform MEPA immediately, justifying his/her reasoning.

**Note 3**: Difficulties, including technical difficulties and lack of information, encountered by the consultants in compiling the required information shall be made clear. All references to published works and sources of information shall be duly acknowledged. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the consultation period. Any material which is based on proprietary data which is not available shall not be incorporated by reference.

**Note 4**: Experts contributing to the EPS should be specifically asked to consider impact interactions and to communicate information between each other.

**Note 5:** The relevance of Maltese Legislation and Maltese Planning Policy (notably the Structure Plan for the Maltese Islands and Local Plans for the surrounding areas), other policies and international policies and conventions shall be discussed and the compatibility (or otherwise) of the proposal with these laws and policies should be described and analysed in the relevant chapters. Policies on the following should also be discussed: conservation areas and zones, marine protection, protected buildings and sites, areas of natural beauty (including localized scenic spots/coves), areas of scientific, ecological, archaeological, agricultural, architectural, historical, antiquarian or artistic value, aquifer protection and run-off.

**Note 6:** A list of all permits, licenses and other forms of authorisation (other than the development planning permit) which must be obtained by the applicant in terms of any other law in implementing the development if permission is granted must be included in the EPS. If consultants are uncertain whether an authorisation is necessary, they shall so indicate in the EPS.

**Note 7:** Following the review of the EPS, MEPA submits comments to the EPS consultants for further clarifications. Once the consultants respond to these comments to the satisfaction of MEPA, a second draft of the EPS, that includes these clarifications, must be prepared. MEPA will only accept an Addendum containing these clarifications if the clarifications are few or where the EPS is still easy to follow with the Addendum.

**Note 8:** Any requirement for confidentiality of any section of the EPS must be justified and a formal request in this regard must be submitted to MEPA. Should MEPA grant confidentiality for specified sections, alternate material that excludes confidential details must be provided for public consultation.

[1] International Association for Impact Assessment (IAIA). (1999). *Principles of Environmental Impact Assessment Best Practice*. Document published by the IAIA in cooperation with the Institute of Environmental Assessment, UK.

An Environmental Planning Statement (EPS) is to be prepared for the proposed development of a Technology Enterprise Centre leading to a Life-Sciences Park (GFE 00003/09) required by the Environmental Impact Assessment Regulations, 2007. The components of the EPS are to be:

i. A **Coordinated Assessment Report**, in conformity with Sections 1 - 4 and their contents as outlined below. This report should describe the project in its totality.

ii. A **Separate Appendix** containing all original survey reports as prepared by individual consultants for specific topics.

iii. A separate **Non-Technical Summary** of all sections of the technical report (to be also provided in digital format and in both the Maltese and English languages). This summary should include any assumptions made in the main report; key features of the site (including surroundings) and proposed development; key impacts and any proposed mitigation measures to minimise costs (externalities) and maximise benefits arising from the proposed development. Technical terms, lists of data and detailed explanations of scientific reasoning should, where possible, be avoided.

iv. A printable **digital copy of the first draft of** all elements of the EPS in .pdf format, which includes all the above, including any plans, maps, photographs, graphs, and any other contents of graphical/visual nature contained within the EPS. Once the EPS has been certified a **digital copy of the certified document** is to be submitted to MEPA.

v. Conformity with sub-Regulations 28 and 29 of the EIA Regulations (refer to Appendix 1 to these Terms of Reference).

**CONTENTS**

## 1.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

**Note 9**: The description of the proposed development is to include consideration of the aspects outlined below. This description must take into account the entire proposal and any ancillary facilities connected with, or arising due to, the project (such as any infrastructure required). Where relevant this section should include maps, plans and diagrams**.**

### 1.1 Justification for the Proposal

*1.1.1 Objectives*

A description shall be provided of the environmental, social and economic objectives which the development will seek to address, and whether such objectives stem from current international obligations and national, regional or local policy, plans and guidance.

*1.1.2 Demand*

This shall be accompanied by a description of the **current and expected demand** for all the land uses being proposed. The study shall explain how the proposal (its size and nature) will address this demand.

*1.1.3 Future developments*

Future developments/needs, if any, of the proposed Life Sciences Park shall also be addressed and assessed.

### 1.2 A Description of the Physical Characteristics and Features of the Project including Constructional Features

1.2.1 Description of the proposed development including details of the proposed site layout showing the design (size, area, height, volume [*scale 1:2500*] layout [to include hard and soft landscaping (*scale 1:2500*)], method of construction, location of all buildings and proposed access arrangements.

1.2.2 Land use requirements for construction and operation, and site details should be identified, including land take required for facilities ancillary to the proposed development, site preparation works, excavations and disposal of surplus material. Proposed facilities (including infrastructure, storage, servicing facilities, security etc.) in terms of size, area, height and volume, proposed elevations, layout, method of construction, etc.

1.2.3 Proposed project management arrangements during excavation, construction and operation phases. These should include a description of:

- Expected duration of all phases;
- Types and quantities of raw materials and primary resources including water, energy, stone and other resources to be consumed;
- Measures to reduce consumption of primary resources; and,
- Season, frequency and duration of interventions on the land.

1.2.4 Identification of the routes that construction vehicles will use to and from the site, the number and size of construction vehicles and their respective frequency of use, and the time of day when construction traffic is likely to be heaviest.

1.2.5 Facilities for the on site servicing of equipment, vehicles and other machinery.

1.2.6 Services and utilities including power.

1.2.7 Water storage, runoff and water management including reservoirs.

1.2.8 Given that the proposal may, directly or indirectly contribute to Greenhouse Gas (GHG) emissions[2], the following should be submitted:
a) An estimate of the expected annual and total GHG emissions during the construction, operation and decommissioning phases of the proposal;
b) The proposal's contribution to total national GHG emission on an annual basis; and,
c) The intensity of GHG emissions.

## 1.3 A Description of the Operational Features of the Project

1.3.1 Residues and emissions by source, type, quantity, composition and concentration. These should include estimated noise levels within the development and at the site boundary clearly indicating the time during which noise sources will be active; distribution of dust, if any and construction of the development, on site disposals and from waste transport, discharges to water (such as air conditioning units) and emissions to air, if any, vibration and light sources.

1.3.2 Estimates of the various water consumption requirements of the development and the identification of the sources of water to be used i.e. second class water, WSC mains, R.O. on site, etc. Water storage and water management should also be described including the following:

- Facilities for storage and eventual use of storm water runoff;
- Collection of surface water runoff and rainwater, including estimates of the sizing of the proposed reservoirs for runoff collection;
- Reuse of collected surface water/ rainwater for secondary systems (such as irrigation, in flushing water etc); and
- Consideration of water saving measures in the finishing and operation of the building, such as the use of low-flow fittings, treatment and reuse of grey water/ sewage, etc.

1.3.3 Power (including the connected load in MW or MVA and the overall power factor). Estimates of the energy consumption requirements (annual MWh), split in terms of end-use (lighting, climate cooling/heating/ventilation, plant, etc.) and which reflects the expected use of the facilities. The level of energy consumption that a development could entail should be identified as much as possible.

1.3.4 Details regarding energy and water issues during operation should include the following:

- An estimate of the energy and water consumption of the project (during operation);
- The energy and water sources that will be used to meet the demand and the extent to which the project shall be self-sustaining;
- Energy performance of the design of the development, including construction materials, etc.; and,
- Integration of low/zero carbon technologies to meet, as far as possible, the building's energy needs; and,
- Consideration of energy efficiency measures in the finishing and operation of the building.

Features which increase energy consumption unnecessarily should be avoided. For example by taking into account issues such as building orientation, natural ventilation, etc. energy requirements can be significantly reduced. Specific reference to LN 238 of 2006: Minimum Requirements on the Energy Performance of Buildings, 2006, should be made.

## 1.4 Waste Management

This section is aimed at assessing the waste management implications that are likely to arise from the proposed project, as well as proposing solutions how such waste shall be managed using the Best Practicable Environmental Options available. Every possible effort shall be made to minimise the waste generated and to divert waste to reuse or recycling rather than disposal. This section shall address the following requirements:

[2] Note: Given the absence of local guidelines on climate change it is recommended to use '*Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners'* prepared by the Canadian Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment (available on *http://www.ceaa-acee.gc.ca/012/014/climatechange_e.pdf*)

1.4.1 The assessment is to cover all wastes generated, including hazardous wastes, wastes generated from ancillary facilities required on site and wastes which may arise from accidental spillages and leakages, and shall be subdivided into the following project phases:

a. Construction; and,

b. Operation: waste management infrastructure required during the operational stage.

1.4.2 The following information to be provided for each waste stream and shall be presented **separately** for the different phases listed above:

a. Identification of processes or activities, resulting from the proposal that would result in waste generation;
b. The European Waste Catalogue Code for each waste stream, as per Schedule 1 and the corresponding H code (if applicable) as per Schedule 2 of the Waste Management (Permit and Control) Regulations, L.N. 337 of 2001;
c. The projected quantities for each type of waste (details of assumptions made and the methodologies adopted for achieving such estimates should also be included);
d. Information on waste handling and storage on site as well as offsite management; and,
e. The frequency and method of transportation offsite.

This information shall be presented in table format as follows:

| **PHASE** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Activity | Waste Description | EWC Code | H code | Quantity Projected | Internal handling and storage | Frequency and Method of Transport to the disposal site | Offsite waste disposal site/waste management company |

1.4.3 Inclusion of layout plans (to scale) clearly showing all relevant waste management infrastructure required (e.g. bunded areas for storage of waste fuels, wheel-wash facilities, etc.), clearly distinguishing between temporary and permanent structures for each phase.

## 1.5 Consideration of alternatives

1.5.1 *Alternative Technologies*

An assessment of the alternative technologies (including during construction and operation) should be considered. This section should contain a detailed explanation of the proposed technology to be used (including that for reducing emissions) and an assessment of alternative technologies which can be used to achieve the objectives of the proposed development. The information shall be presented in tabular format indicating technologies and associated environmental impacts, in sufficient detail.

1.5.2 *Alternative Layouts and Proposals*

An identification of **all** possible layouts (including building heights) and proposals based upon the possibilities and constraints posed by physical characteristics and features of the project, its operational features, and land-use requirements. A description of these layouts/proposals and site-specific environmental impacts shall be provided. This section should also include the zero option, that is, an assessment of the way the site would develop if it were left in its natural state.

1.5.3 The findings on the environmental impacts of alternative technologies shall be combined with those on the environmental characteristics and environmental impacts in the alternative layouts. This will enable the identification of best technology combinations. The technical and planning reasons why a particular technology and layout was selected in preference to all the others must be clearly explained. The discussion should cover demolition, construction, operation and distribution aspects. The findings of the assessment of alternatives shall also be summarised in a tabular matrix for ease of comparison.

## 2.0 A DESCRIPTION OF THE PROPOSED SITE AND ITS SURROUNDINGS

**Note 10**: This description is identified by the area of influence for each relevant parameter. The area of influence for each parameter shall be determined by the consultants who shall also justify the extent of the chosen area of influence. This must be **APPROVED** by the Malta Environment and Planning Authority prior to commencement of the EIA. This description should include:

The following section shall comprise the baseline studies for a number of issues with respect to the proposed development. The studies shall be carried out on the following:

### 2.1 Land Use

A description of the present uses of the proposed site together with a description of settlements, workplaces, places of worship, commercial, recreational and other uses located within an area of influence from the site. Details including nature, magnitude, proximity to site etc. should be included. The proximity of the proposed development to the Mater Dei Hospital and the University of Malta should also be taken into consideration.

### 2.2 Landscape Character and Visual Amenity

***Landscape Character***

A description of the landscape area of influence or landscape setting of the proposed site (to be approved by MEPA), identifying the component Character Areas/ Local Landscape Tracts and the landscape elements and characteristics thereof. In defining these, reference shall be made to MEPA's 'Draft Landscape Assessment Study'.

The degree of sensitivity of each Character Area and Local Landscape Tract shall be indicated and justified.

***Visual Amenity***

The Zone of Visual Influence (ZVI) of the proposed site without and including the proposed development shall be identified and the methodology used to ascertain same shall be described. Viewpoints within the ZVI shall be identified that are representative of short, medium and long distance views towards the Application Site. The ZVI and viewpoints shall be subject to the approval of MEPA. To assist in this approval process MEPA will require a base photo from each of the proposed viewpoints. Such photos shall be in compliance with the criteria set out further below.

The visual amenity of each view shall be described and the numbers and sensitivity of the receptors likely to partake of the view from each viewpoint shall be identified and the degree of sensitivity of each shall be indicated and justified.

Reference should be made to the *Guidelines for Landscape and Visual Impact Assessment*, 2nd Edition (*The Landscape Institute* and *IEMA*, 2002).

### 2.3 Geology, Geomorphology, Hydrogeology and Hydrology

A baseline study for these features shall be carried out. Details, baseline surveys and characterisation of sites' hydrological conditions should be provided. Baseline surveys on characteristics of aquifers including aquifer properties, sources of recharge of groundwater, pumping and abstraction, characteristics of watercourses including discharges and withdrawals, catchment areas and drainage patterns, run-off including volume and route taken by run-off.

Geo-Technical Survey

A geo-technical survey of the material to be excavated and rock mass forming the foundation of the proposed structure shall be submitted. A number of core samples shall be carried, the number and location of which shall be as approved by MEPA prior to carrying out of any *in situ* tests. Rock sampling and testing shall comply with the relevant BS Standards, including BS 5930:1999. This description shall extend to at least 3m below the deepest level of the proposed development (taking into consideration any facilities proposed underground). This section shall provide the information required for establishing the economic feasibility for the reuse of the excavated material (including any necessary studies to determine such feasibility).

## 2.4 Air Quality

This section shall clearly establish the current background levels of pollution, including dust and comparison to the limit values as specified in EU legislation. Details on prevailing wind and climate conditions shall also be included, amongst other relevant parameters. Studies of the current background levels are to be conducted over 6 weeks. Detailed studies should be as follows:

1. $NO_x$: Should the proposed development be sited in an area with heavy traffic, real-time measurement of hourly concentrations of $NO_x$, particularly during rush hours is required. Diffusion tube monitoring should take place over 2 3-week periods, with 2 3-week averages and 1 6-week average that would be compared to the annual limit value as per relevant EU Directives.
2. $PM_{10}$: Daily measurements of PM10 concentrations are to be compared with the daily limit values. Furthermore, 2 3-week averages and 1 6-week average is to be compared with the annual limit value.
3. $PM_{2.5}$: 2 3-week averages and 1 6-week average is to be compared with the annual limit value.

A method statement shall be submitted to MEPA for approval, indicating the sampling points for the air-quality monitoring programme, one of which should be at the most sensitive receptor in the prevailing wind direction i.e. to the south-east of the proposed Life Sciences Park.

A traffic model (preferably DMRB or any other equivalent) shall also be used in order to estimate the effect on air quality of the increase in the traffic flow due to the project.

## 2.5 Noise and Vibration

Information on the prevailing background noise levels both in terms of frequency and intensity should be given. This baseline survey should follow parameters given in BS4142:1997. Locations for monitoring background noise should be chosen bearing in mind the following:

- Other existing noise sources in the area, including increase in traffic and congestion in the area;
- Other potential noise sources in the area, including new developments;
- Sensitive receptors, residential areas, schools, hospitals, etc.;
- Sensitive recreational areas in the vicinity; and,
- Features that might shield noise, topographical, vegetation, etc.

These locations must be approved by the MEPA prior to commencement of the EPS studies..

## 2.6 Infrastructure and Utilities

A comparative description of the current and proposed infrastructure and utilities available on site (including water supply, energy supply, sewerage, access routes, etc.) shall be included.

## 2.7 Any other relevant environmental features

# 3.0 ASSESSMENT OF ENVIRONMENTAL IMPACTS AND RISKS OF THE PROPOSED DEVELOPMENT

**Note 11:** All significant impacts of and risks posed by the proposed project **during construction and during operation**, should be assessed, given the environmental characteristics of the site outlined in Section 1 and 2 and the relevant policies. A descriptive and quantitative analysis (including magnitudes and timing) of the impacts of the proposed development should be made, and presented in summary chart format. The various techniques, methods and assumptions used in the analysis and predictions should be outlined.

The impact assessment should include:

i. Description of the impact;
ii. Magnitude and significance;
iii. Duration (temporary or permanent);
iv. Extent (in relation to site coverage and surroundings and associated features);
v. Direct or indirect impact;
vi. Adverse or beneficial;
vii. Reversible or irreversible effects of the impact and extent or irreversibility as well as description of any associated conditions/assumptions for irreversibility;
viii. Sensitivity of resources to impacts;
ix. Probability of impact occurring;
x. Confidence level/limits to impact prediction;

xi. Scope of mitigation/enhancement; and
xii. Residual impacts.

**Worse case scenarios should be assessed where relevant**.

The impacts may include:

### 3.1 Effects on Land and Surrounding Land Uses

Including the physical effect of the development on the local topography e.g. via earth-moving, soil stability and erosion; chemical emissions, deposits and waste.
This assessment shall first consider the proposed development in isolation and assess the impacts arising from the proposed development. These include impacts of the proposal on the adjacent residential communities and other sensitive receptors including places of worship, marine environment and other sensitive uses, during construction and operation.

This assessment shall then consider the proposed development in a wider context and assess the effects of the proposed development upon the surrounding land uses and the effects of the surrounding land uses upon the proposed development. Specific reference to sensitive receptors should be made.

### 3.2 Effects on Visual and Landscape Character

The assessments shall have regard to the entire proposed development including all ancillary development associated with it. The basis for the assessment of the significance of the impact of the proposed development shall be described.

The Landscape and Visual Amenity Impact Assessments must also have regard to committed development within the Area of Influence or Viewshed that is likely to affect the quality of the landscape or the visual amenity of the Application Site (without and with the proposed development).

**1. Assessment of the Impact on the Landscape**
This shall comprise the identification and description of the predicted changes in the landscape attributable to the proposed development. The effects of the changes on the quality of the landscape / elements in each of the identified landscape character areas / local landscape tracts, and an assessment of the effects of such changes on the previously identified sensitive receptors of the landscape shall be submitted. The predicted magnitude of the effects on the sensitive receptors shall be justified.

**2. Assessment of the Impact on the Visual Amenity**
This shall comprise the identification and description of the predicted changes to the visual amenity of the proposed site attributable to the proposed development. The effects of the changes on the quality of the visual amenity of the proposed site as viewed from each of the approved viewpoints and an assessment of the effects of such changes on the previously identified sensitive receptors of the visual amenity shall be submitted. The predicted magnitude of the effects on the sensitive receptors shall be justified.

The base photos / photomontages to be submitted shall comply with the following:
a) The location of each viewpoint shall be shown on a map that also depicts the Viewshed for the proposed site as described above. The visual angle of the photograph shall also be depicted. In this regard, it is recommended that the visual angle should not be greater than 50 degrees. However, the use of stitched photos that illustrate the field of vision towards the Application Site from each viewpoint is acceptable on the proviso that such photos are additional to the 50 degree photo
b) Each photo / photomontage submitted shall:

- Be at least A3 in size. Strips which are A3 in width but not in length will not be accepted except for additional illustrative material;
- identify the date and time at which it was taken;
- Be of good quality, with faithful colour reproduction. The photos shall be taken in good weather and, unless otherwise directed by MEPA, shall be taken at least 2 hours after sunrise and 2 hours before sunset. Colours should not be digitally or otherwise manipulated. 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 should be requested 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 shall be documented;
- Shall ensure that any additional/replacement structures or features depicted in the photomontages shall have a scale which proportionately tallies with the existing nearby features; and
- Show in the photomontage(s), if applicable, the landscaping scheme proposed for the development. The maturity of the landscaping scheme as shown (which shall not be less than 5 years after planting) shall be indicated. The photomontages should also be submitted that do not include landscaping scheme.

### 3.3 Effects on Geology, Palaeontology, Hydrogeology and Hydrology

This should address palaeontological, geomorphological, and physiographic aspects. The assessment of significance of impacts (positive and negative) should include impacts on aquifers and water resources, permanent and/or temporary changes to the hydrologic regime of watercourses which may traverse the site, permanent and/or temporary changes to the hydrogeological regime of site including changes to the mean sea level aquifer and its recharge. The impact on the surface water drainage pattern shall also be mapped and illustrated if the proposed development is constructed. The impacts on the surrounding area and property due to the resulting change in surface water drainage pattern shall be clearly described.

This assessment shall include the impacts of the geology including the economic feasibility of the reuse of the excavated material, giving due consideration to all possible alternative uses. The assessment shall also investigate the effects and risks of excavations on the stability of the surrounding land.

### 3.4 Effects on Air Quality

Including emissions to air, both during construction and operation by source, type, quantity, composition and concentration and the distribution of each. This shall include dust, as well as chemical emissions due to machinery and/or associated activities during both construction and operation of the proposed development. Impacts due to increased traffic shall also be considered.

### 3.5 Effects of Noise and Vibrations

This shall include an assessment of maximum noise levels expected to be generated, variations during the day and night and noise attenuation (the reduction in noise levels as a result of 'environmental' factors, e.g. mufflers at source, insulation of a building). The effects of noise and vibrations on the surrounding community arising during the demolition, construction and the operation of the proposed development shall be assessed. The assessment should also consider road traffic associated with operations on the site. Noise sensitive receptors should be identified and agreed with MEPA. It is recommended that BS4142:97 is used for the noise assessment and BS6472 (relating to human exposure to vibration) and BS7385 (covering the effects on buildings) is used when studying vibration.

### 3.6 Effects on Utilities and Infrastructure

Assessment of whether the current utilities (described in Section 2.6) are adequate to meet the demand of the proposed development or whether new provisions need to be supplied. If provision of new infrastructure (or upgrade of existing) is deemed necessary, associated construction works shall also be taken into consideration in the EPS.

The extent to which the project can be self-sufficient with regard to its energy and water needs is also to be assessed. This assessment shall identify the processes or features of the proposed development and ancillary facilities which consume energy/water and identify possible measures to minimise the energy / water use necessary for their operation. This should include 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.

### 3.7 Climate Change

<u>GHG Impacts</u>

The proposal's direct, indirect and off site GHG emissions and related impacts should be identified during all phases and for all element of the proposal. The impacts of the proposal on carbon sinks (e.g. impact on forests, agricultural soils, landfills or wetlands and marine environment) or large GHG emissions, which are the consequence of accidents or malfunctions, shall be identified.

Impacts of CC on the proposal

The phases or elements of the proposal that are sensitive to variations in or changes to specific climate parameters (e.g. precipitation, wind, water levels, temperature, humidity, etc.) should be identified. The potential impacts that these changes may have on elements of the proposal shall be identified including the possible impacts resulting from changes to multiple parameters.

The adaptability of the Project in the event the region's climate changes shall be discussed.

### 3.8 Secondary Impacts

Mainly arising from the extraction and consumption of resources necessary to implement the project, as well as from developments supporting the project (e.g. new roads, sewers, power lines, pipelines, telecommunications), such as water, energy, construction materials, and the resultant need (if any) of development of new supplies.

### 3.9 Other Environmental Effects

Other environmental effects other than those identified in Sections 3.1 – 3.8 shall be described and their impacts assessed.

### 3.10 Cumulative Effects

This section shall refer to all the impacts of all the aspects of the development and shall assess:

- The effects resulting from the **interaction of separate effects** listed above as well as any other relevant impacts; and,
- The impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions/activities together with the project.[3]

This section should also assess the cumulative impacts of the project on the transport network, congestion and facilities and any impacts of the proposal on the general public.

### 3.11 Interaction between any of the foregoing

Experts contributing to the EIA should be specifically asked to consider impact interactions and to communicate information between each other. In addition, any environmental components not listed in the Directive or Regulations that are likely to be affected should not be discounted.

Predictions of impact interaction will nearly always involve a greater degree of uncertainty than prediction of impacts on individual components. This should be referred to in the EIA rather than ignored.

## 4.0 Design of Mitigation Measures, Identification of Residual Impacts and Monitoring Programme

### 4.1 Mitigation Measures

This should include a description of the measures envisaged to prevent, minimise and where possible offset any significant adverse effects on the environment of the project during both construction and operational phases (including reference to consideration of alternatives in Section 2 above). Such measures should be realistic and could include technological features; alternative technological features; operational management techniques; enhanced site-planning and management; aesthetic measures; conservation measures; reduction of magnitude of project; and health and safety measures.

The mitigation measures are to indicate how the project design shall take into account the need for continuous improvement with respect to GHG emissions.

### 4.2 Residual Impacts

Any residual impacts, that is those impacts that cannot be mitigated or those remaining impacts following implementation of mitigation measures, should also be described, quantified and presented in a tabular format.

[3] European Commission, May 1999. *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions,* http://ec.europa.eu/environment/eia/eia-studies-and-reports/guidel.pdf.

## 4.3 Monitoring Framework

Consultants must propose a monitoring framework which should take into account monitoring of those features considered to have a negative or an uncertain impact. The framework must be proposed at different stages: before, during and after construction. Details regarding type of and frequency of monitoring must also be given. This framework shall include an audit and evaluation of forecasts, predictions and mitigation measures made in the EPS. It should spell out (to the degree possible) the nature and extent of additional steps that should take place when unanticipated impacts or impacts larger than the projections occur.

## APPENDIX 1 SUB-REGULATIONS 28 AND 29 AND THE EIA REGULATIONS.

**Environmental Impact Assessment Regulations, 2007**

**Regulation 28 and Regulation 29 of the EIA Regulations, 2007**

**Regulation 28**

**List of Consultants (Extract from the EIA Regulations)**

**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 Regulation 28 (3)**

Director General
MEPA

I _____, who carried out the study (or part thereof) on _____ for the EPS of GFE 00003/09 for the proposed Development of a Technology Enterprise Centre leading to a Life-Sciences Park at San Ġwann Industrial Estate, San Ġwann, hereby declare that such study was solely carried out by me and take responsibility for any statement and conclusion contained therein.

Date _____ Signature _____

*This declaration is to be included with each environmental survey report included with the EPS.*

**Regulation 29**

**Conflict of Interest (extract from the EIA Regulations)**

**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 Regulation 29 (1)**

Director General
MEPA

I _____, herby declare that I have no personal or financial interest in the proposed development, namely the Development of a Technology Enterprise Centre leading to a Life-Sciences Park at San Ġwann Industrial Estate, San Ġwann,. 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

*Such declaration is to be sent to MEPA when proposing the list of EIA Consultants prior to their approval or otherwise.*