A PROPONENT'S GUIDE TO ENVIRONMENTAL IMPACT ASSESSMENT (EIA):

Incorporating Climate Change, 2012

Adapted from: A Proponent's Guide to Environmental Impact Assessment (EIA), Republic of Mauritius – Ministry of Environment, July 2004

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1.0 BACKGROUND INFORMATION

What is an Environment Impact Assessment (EIA)?

EIA is a study that predicts the environmental consequences of a proposed development. It evaluates the expected effects on the natural environment, human health and on property. The study requires a multi-disciplinary approach.

The EIA compares various alternatives by which the project could be realized and seeks to identify the one which represents the best combination of economic and environmental costs and benefits. Alternatives include location as well as methods, process technology and construction methods.

Why do we need an EIA?

EIA is one of the most important tools for sound decision making and for achieving sustainable development. Mauritius first adopted formal procedures for EIA in June 1993 following the amendment of the Environment Protection Act (EPA) 1991. In order to further consolidate and reinforce the institutional and legal framework for the protection of the environmental assets of Mauritius and a sustainable development, a new Environment Protection Act is in force as from 5 September 2002. The EPA 2002 provides for environmental stewardship, greater transparency and public participation in the EIA mechanism as well as a streamlining of the EIA procedures. The EPA 2002 also specifies the contents of the EIA. The requirement for an EIA according to EPA 2002 is at Appendix 1.

Which activities are subject to EIA?

Undertakings requiring an EIA licence are listed in Part B of the First Schedule of the EPA 2002 (Appendix 2). The EPA 2002 also empowers the Minister to request an EIA for any non- listed activity, which, by reason of its nature, scope, scale and sensitive location could have an impact on the environment.

The processing of an EIA application involves consultation with several Ministries/ Authorities and the report is also sent for public comments to the Local Authorities. Thus, a proponent applying for an EIA Licence shall submit in **electronic form, and in 10 printed copies** of his EIA report to the Department of Environment and also indicate the tentative date of commencement of work. Guideline for the electronic version of an EIA report is at Appendix 3.

2.0 OBJECTIVE

The objective of this guide is to supplement and elaborate on the contents of an EIA report as spelt out in EPA 2002, as well as provide a general insight in what is an EIA. Alterations to the original EIA Guideline have been marked in green text. These enhancements articulate the recommended approach to integrating climate change considerations into the existing EIA process.

3.0 THE ENVIRONMENT IMPACT ASSESSMENT PROCESS

The EIA process involves the following steps:

- **Screening:** it is an important process that assists in deciding whether the project requires an EIA or not.

- **Scoping**: the aim of scoping is to ensure that the study addresses all the issues important for decision-making. It involves setting terms of reference for the EIA, selecting consultant and review of existing legislation. Guidelines to assist proponents in the Scoping Phase are provided in Appendix 4. Scoping is a critical component for the submission as it demonstrates adequate consideration of climate risks and provides guidance to the proponent on the level of detail required in the full EIA assessment. The outputs of the scoping activities should be submitted in partnership with the full EIA application. Applications preparing an Outline of the Undertaking should submit the Scoping Phase outputs in partnership with the Outline of the Undertaking.

- **The EIA study includes the following:**
  - Collection of baseline data and information
  - Public involvement/participation
  - Identification of impacts in terms of magnitude and significance
  - Socio- economic analysis of project effects/impact
  - Mitigating measures for each impact identified
  - Analysis of alternatives of the project
  - Development of a monitoring programme and environment management plan

  The above study should be documented in the form of an EIA report and submitted at the time of application.

4.0 GUIDELINE ON THE CONTENT OF AN EIA REPORT

The proponent/consultant preparing an EIA report shall ensure that all socio-economical and environmental parameters are addressed and their impacts are identified and taken into account in the project design. The EIA report shall provide substantive and indicative information on the proposed measures to mitigate all adverse environmental effects as well as the opportunities for environmental enhancement to enable a proper assessment.

Prior to embarking on a project, a proponent shall ensure that the proposed development is compatible with the zoning of the site and that relevant clearances such as zoning certificate, land conversion permit or lease agreement (if applicable) have been obtained.

- **In case of inappropriate zoning and the absence of proof of land ownership or authorisation, the EIA application will not be considered.**
- **No permit for development shall be granted in respect of an undertaking unless there is in relation to it an approval of preliminary environment report or an EIA licence.**

An EIA report shall be duly signed and dated by the proponent of the undertaking and all principal consultants involved in the preparation of the EIA report.

An EIA report shall be prepared in the format as proposed below:

4.1 TITLE PAGE

This should contain details of:
- The full title under which the EIA has been prepared
- The team responsible for the EIA or name of the consultancy if applicable
- The proponent
- Date

4.2 NON-TECHNICAL SUMMARY

- This should be concise.
- The language should be simple and non-technical.
- It should give an outline of both the project and location.
- It should focus primarily upon key impacts identified in the EIA and measures taken to avoid and reduce them.

4.3 INTRODUCTION

This should provide background information on the project, the promoters, any experience in similar projects, project costs, benefits, employment opportunities, benefit to local communities, associated problems etc.

4.4 SITE AND PROJECT DESCRIPTION

This should describe the project and indicate the justification and rationale underlying the project, including:

4.4.1 Site Description

A description should be given in general terms to indicate the nature and broad character of the local environment.

- Ownership of land and proof thereof, or lease agreement clearly indicating the owner's consent is agreeable to the project

- Present Zoning of site as per approved Outline Scheme (obtainable from the Town & Country Planning Board or the local authorities)

- Plans and policies with which the project conforms

- Site characteristics in terms of site location, landform; present and past land use *(if known),* accessibility to site, flora and fauna; areas vulnerable to flooding, inundation, landslides, erosion and other impacts from natural hazards or climate change.

- Certified and comprehensive site and location plans drawn to scale and duly certified by a Sworn Land Surveyor with known landmarks as reference points and showing water bodies, wetlands, boreholes, acquifer, stone crushing plants etc within a 1000m radius

- Surrounding environment indicating adjacent residential areas/built-up environment, environmentally sensitive areas and their categorization (refer to the ESA Management Plan), watercourses, designated sites of interest.

- Other attributes of the area, e.g. amenities, recreational and agricultural values, including socio-economic activities vulnerable to natural hazard or climate change impacts.

- Indication of other similar projects in the surroundings

  Existing infrastructure and availability of public utilities

4.4.2 Project Description

- Project initiator
- Type of project and associated activities to be carried out.
- Need and justification of project.
- The design, size and scale of the project.
- Detailed site/layout plan drawn to scale of 1:500 indicating site boundaries (as per title deeds) and showing all structures proposed to be put up on site with setbacks from boundaries.
- Operational boundaries of the project (e.g. physical and process boundaries).
- Detailed plans including elevations, plot coverage and gross Floor Area.
- Description of project in terms of raw materials, processes, mass balance, equipment, work force, products, type and amount of wastes/effluent produced and its disposal etc.
- Training requirements of the project.
- The technical, economic and environmental features essential to the project.
- Diagrams, sketches or landscape architect's impression of the project in the receiving environment.
- Proposed schedule for implementation.

4.5 METHOD OF ASSESSMENT

This should contain details of the EIA procedure including:

4.5.1 Baseline Data

- Data collection methodology (E.g. survey, matrix or checklist), source of information
- A geotechnical report including subsurface strata, maximum level of water table and results of a soil percolation test. The geotechnical report to be certified by an Engineer registered by the council of Registered Professional Engineers or a specialist in soil mechanics.
- A vulnerability and adaptation assessment, including potential impacts on the vulnerability of the project to natural hazards and climate change impacts including the frequency, magnitude and distribution of any natural hazard or climate change element affecting the spatial or temporal boundaries of the proposed project. Assemble, evaluate and present baseline data on the relevant natural hazard/climate change characteristics of the study area that are relevant to project siting or design, or to the formulation of mitigation or adaptation measures. Include information on any changes anticipated before the project commences*. The ROM Second National Communication (SNC) to the United Nations Framework Convention on Climate Change (UNFCCC) outlines proposed scenarios for change in climate conditions over time; as well as baseline values for GHG emissions. This information can be referred to when establishing the baseline and completing the vulnerability and adaptation assessment.
- What information the EIA was based upon? (World Bank Report, White Paper, Second National Communication etc)
- Are there any uncertainties or omissions in this data? e.g. if it was collected out of season or is out of date.
- Are any further surveys to be carried out to remedy this?

*Note: The following standards may assist proponents in evaluating risk – refer to the Mauritius Standards Bureau for more detail:
- *MS ISO 31000:2009: Risk Management – Principles and guidelines*
- *MS ISO 31010:2009: Risk Management – Risk assessment techniques*

4.5.2 Consultations

This section should indicate who has been contacted and a summary of discussions about the project. It should include:

- Statutory bodies, environmental and amenity groups and local residents likely to be affected by the proposals. Topics of discussion should include, changes to social, economic and environmental conditions (including climate change) as a result of the development and remedial strategies proposed to address any negative impacts. Feedback should be sought on the feasibility of recommended remedial strategies.
- Means for contacting them and for providing publicity about the project (leaflets, public display, questionnaires, letters, etc.).

- A brief summary of their responses detailing the areas of concern highlighted and their contribution to the EIA.
- For all development projects viz construction of hotels, golf courses, jetties, etc in the coastal zone, the proponent shall have consultation with fishers of the area explaining to them their projects. The consultation shall be done under the aegis of Ministry of fisheries

4.6 PREDICTED ENVIRONMENTAL IMPACTS

This section should indicate (i) what effects the proposed development is likely to have upon the environment and (ii) impacts of natural hazards and climate change on the proposed project.
In this analysis, distinguish between significant positive and negative impacts, direct and indirect impacts, cumulative impacts, and immediate and long-term impacts. Identify impacts that are unavoidable or irreversible. Wherever possible, describe impacts quantitatively, in terms of social/environmental costs and benefits.

The analysis of potential impacts of the proposed project is to include an assessment of potential exacerbations or reduction of natural hazard impacts, both on- and off-site. Characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with predictions of impact.

Further analysis is also required to determine the rate and amount of Greenhouse Gas (GHG) emissions associated with the proposed undertaking. The following actions describe the recommended approach.

- Identify and describe operations within the project boundary that will contribute GHG emissions.
- Develop a GHG Inventory: Include estimates of GHG emissions in CO2e/year from the project based on projected construction, operations, and, if feasible, decommissioning activities using available data and references. Evaluate these estimates with industry standards and relevant climate change policies. If emissions are expected to exceed standards more detailed analysis is required.
  Please note:
  (i) Significant climate change risks, including the project activities that contribute GHG emissions, are identified in the scoping phase (see Appendix 4)
  (ii) The Energy Efficiency Management Office can provide the proponent with guidance on determining GHG emissions and outlining relevant standards, as stated in the Energy Efficiency Act 2011
- Describe and/or quantify direct impacts on large-scale carbon sinks as a result of the project, if any. Carbon sinks are broadly defined as natural or artificial reservoirs that store carbon (e.g. soil, forests, mangroves, landfills). This data may also be included in the GHG Inventory. Note: The GHG Inventory may form a component of the Climate Change Monitoring Plan – see Section 4.10.

The EIA should emphasize the key issues identified during the Scoping phase and indicate why these are felt to be crucial. Lesser impacts should be mentioned but the amount of space devoted to them should be proportional to their perceived importance. Although direct impacts will be more obvious, indirect and cumulative effects should not be overlooked. For clarity, impacts may be identified for construction, operational and decommissioning phases, and where possible quantified and an indication given of their magnitude and significance. In addition, risk transfer post decommissioning should be considered – what climate risks could result from the activity or be amplified by the activity, both now and in the future. Any uncertainty in prediction should also be made explicit. A matrix may serve to indicate whether the impacts are:

- Long/short term
- Strategic/local/ regional/ national
- Direct/indirect
- Irreversible/reversible

4.7 MITIGATION MEASURES

For each impact the EIA should state:

1. Steps to be taken to avoid / reduce and / or eliminate the impacts
2. The likely effectiveness and adequacy of mitigation
3. Proposed technologies, approaches and plans aimed at achieving (1).

The following impacts should be included:

- In terms of noise, odour, emissions, smoke, flies, rodents, traffic implications including a brief traffic impact analysis**,** etc.
- Source, type, generation, collection and disposal of solid waste.
- The maximum population (on daily basis), source, type and volume of wastewater generated. Physical, chemical and biological characteristics, method of collection, treatment and disposal (with appropriate design calculations and drawings) of wastewater.
- The potential climate impacts now or in the future that could result from the proposed undertaking or be amplified by the proposed undertaking.
- Impacts that remedial measures to address identified impacts, such as seawalls, may have on- and off-site.
- GHG emissions associated with the undertaking over the project lifecycle.
- Amount of dangerous/toxic material used, storage methods, threshold levels of dangerous/toxic material stored/handled together with identification system and a register of hazardous installation.
- Major accident policies (on site emergency plans, safety measures and information to the public).

The following section outlines adaptation and mitigation and measures that should be included:

- Adaptation measures to reduce the undertaking's exposure and sensitivity to climate change risks, as identified in the scoping phase and the climate change vulnerability/risk assessment(s) described in Section 4.5.1: Baseline Data. Adaptation measures should address significant climate change impacts that will affect the project (including project activities and the projects area of influence) according to the following areas (where relevant):

    - Biodiversity and wildlife
    - Ecosystem and their Goods and Service (Agriculture, Forestry, Fisheries, Aquaculture, Coastal Zone and Marine Ecosystems).
    - Hydrology and Water Resources
    - Soils and Land Resources
    - Human Settlements, Energy and Industry
    - Human Health
    - Socio/economic Development

- *Feasible GHG reduction strategies or technologies that will be applied to the construction, operation and decommissioning stages of the undertaking. Development of these measures should be articulated through a GHG Mitigation Plan (containing reduction objectives, targets and strategies). Development of GHG mitigation measures is of particular importance for activities expected to exceed Government emissions standards.

    **Note:*
    Mitigation targets and standards should be consistent with national strategies, policies and standards (e.g. Energy Efficiency Act 2011, Mauritius Standards Bureau). Proponents should consult with the Energy Efficiency Management Office (EEMO) to ensure existing guidelines, standards and initiatives are utilized. More specifically, proponents should refer, where appropriate, to the following standards developed by the Mauritius Standards Bureau:
    - *MS ISO 14064-2:2006: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*
    - *MS ISO 14066:2011: Greenhouse gases – Competence requirements for greenhouse gas validation teams and verification teams*
    - *MS ISO 16813:2006: Building Environment Design – Indoor Environment – General Principles*
    - *MS ISO 23045:2008: Building Environment Design – Guidelines to assess energy efficiency of new buildings*

4.8 RESIDUAL IMPACTS

The EIA should indicate all unavoidable impacts. These should be justified in terms of benefits of the project and enhancements

4.9 SOCIO CULTURAL AND SOCIO ECONOMIC IMPACTS

Including impacts on adjacent residential areas; local community; current activities carried out by different stakeholders, including recreational activities

4.10 MONITORING AND MAINTENANCE

Prepare a detailed plan to monitor the implementation of management, mitigation or adaptation measures and the impacts of (a) the project during construction and operation, and (b) climate change during all phases of the project (design, construction, operation, abandonment and decommissioning).

This should indicate:

- Provisions made for on-site monitoring during site preparation, construction and operation phase
- Future maintenance requirements
- Provision for audit during the operation of the scheme
- Preparation of monitoring programme to be submitted to Department of Environment and should indicate the specific responsibilities during various phase
- Provision made for ongoing monitoring during the life of the undertaking to assess change in social and environmental conditions (monitoring change against baseline conditions at time of EIA screening assessment)
- Provision for remedial action to address social or environmental changes, as specified within a monitoring plan
- Estimate of capital and operating costs and a description of other inputs (such as training and institutional strategy).
- Incorporated into the monitoring plan/programme – Ongoing record and assessment of the performance of mitigating measures, adaptation and GHG reduction strategies. The monitoring plan should describe; objectives, processes, schedules, maintenance logs, and people responsible for each respective task. The monitoring plan should also be designed to monitor:

    (i) Climate patterns affecting the project area
    (ii) Climate change impacts on key social, economic and environmental indicators

The monitoring practitioner(s) should determine, where possible, the effectiveness of any adaptation, GHG emission reduction, offset or compensatory measures that has been implemented. Maintaining a database of “lessons learnt” should feed into an iterative process whereby mitigation measures are modified and enhanced when necessary – thereby managing change adaptively.

The following standards should be referred to when conducting GHG Monitoring - refer to the Mauritius Standards Bureau for more detail.

- *MS ISO 14064-2:2006: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*
- *MS ISO 14066:2011: Greenhouse gases – Competence requirements for greenhouse gas validation teams and verification teams*

4.11 ENHANCEMENT OPPORTUNITIES

A brief outline should be given of any enhancement work which is planned its maintenance and upkeep. This should be distinguished from mitigation measures which are integral to the project and form part of the proposal.

4.12 ALTERNATIVES

This section should give an outline of:

- The alternatives to the project
- The "Do Nothing" option – what will be the outcome of not undertaking the project, for instance on future land use?
- The alternative considered to be the "most environmentally friendly" even if this is not the project
- The criteria for rejecting the alternatives
- The stage in the planning process when they were rejected

The concept of alternatives extends to siting, design, technology selection, construction techniques and phasing, and operating and maintenance procedures. Compare alternatives in terms of potential environmental impacts; capital and operating costs; suitability under local conditions; and institutional, training and monitoring requirements. When describing the impacts, indicate which are irreversible or unavoidable and which can be mitigated, managed or addressed under an appropriate adaptation plan. To the extent possible, quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigation/adaptation measures. Include the alternative of not constructing the project, in order to demonstrate environmental conditions without it.

4.13 CONCLUSIONS AND SUMMARY OF ENVIRONMENTAL OUTCOMES

Include any irreversible residual impacts, which cannot be mitigated.

4.14 SUPPORTING DOCUMENTATION AND REFERENCES

4.16 APPENDICES

These should include information which would cluster the main body of the text, such as:

- Plans and maps
- Species lists
- Press releases
- Written responses to the project

5.0 PROCESSING OF EIA APPLICATION

Proponents applying for an EIA licence are required to submit 15 copies of the EIA report to the Director of Environment. Figure 1 depicts an outline of the EIA procedure.

After a preliminary scoping, to ensure that the document is as accurate and exhaustive as possible, the EIA is open for public inspection and comments by publication in the government gazette and two dailies. A copy of the EIA report is circulated to the authorities concerned with a request to submit their views in writing within a prescribed time limit. Concurrently, the Environment Assessment (EA) Division of the DoE organizes a joint inter-ministerial site visit for an on-site assessment of the environmental implications of the proposed development, together with the proponent and / or contact person and his consultant(s). The proponent may be requested to carry out further studies or to submit additional information. The Director may also set up a Technical Advisory Committee to advise him on the EIA or on any aspects of the undertaking.

The EA Division processes the application taking into consideration the views of the authorities concerned as well as any public comments received. The Director's review is referred to the EIA committee for examination. The EIA committee makes recommendations to the Minister for a decision which is thereafter communicated to the proponent by the Director.

6.0 APPEAL

Any person who is not satisfied with the decision of the Minister on an EIA may appeal within 30 days of the decision to the Environment Appeal Tribunal.
Any party who is dissatisfied with the Tribunal's Determination on a point of law can still appeal to the Supreme Court.

Note:

Further information on the provisions of the EPA 2002 and the EIA procedures can be downloaded from Ministry's Website (http://environment.gov.mu)

Appendix 1

This section previously contained sections of the EPA 2002 that outline the requirements of an EIA submission.

Replace with the recommended updated EPA 2002 content (which incorporates climate change considerations).

Appendix 2

List of undertakings requiring an Environment Impact Assessment

1. Asphalt plant
2. Block making plant manufacturing above 10,000 blocks per day.
3. Brewery.
4. Bulk processing, storage and handling of petroleum, petroleum products, liquid gas, coal and petro-chemical products.
5. Clinic and hospital
6. Construction of air field and airport
7. Construction of breakwaters, groins, jetties, revetments and seawalls
8. Construction of dam and dyke
9. Construction of marinas
10. Conversion of forest land to other land use
11. Desalination plant
12. Development, production, release use, marketing and application of Generically Modified Organisms
13. Distillery
14. Dye house
15. Fishing port
16. Foundry, smelting plant or metallurgical work
17. Galvanising industry
18. Golf course
19. Harbour dredging operation, construction and development
20. Highway and mass transit system
21. Hotel (coastal), including extension
22. Housing project and apartments above 50 units
23. Lagoon dredging and reprofiling of sea beds including creation of bathing areas
24. Land clearing and development in environmentally sensitive areas such as water catchment areas, waterlogged areas, mountain slopes and islets
25. Landfill
26. Lime manufacture
27. Manufacture of battery
28. Manufacture or packing of cement
29. Manufacture of chemical fertiliser
30. Manufacture of pharmaceutical products
31. Manufacture, handling and storage of dangerous chemicals and pesticides
32. Manufacture of paint, pigment & varnish
33. Manufacture of photographic films
34. Manufacture of polyrethane foam
35. Manufacture of soap detergents
36. Modification of existing coastline such as beach reprofiling, coastal protection works and removal of basaltic and beach rock
37. Offshore sand mining
38. Parcelling out of land above 3 ha-
    (a) otherwise than by way of division in kind among heirs;

(b) to be allocated to persons other than such persons as may be approved by the Minister responsible for the subject of agriculture and who are-

(i) bona fide occupiers of housing units forming part of sugar camps owned by sugar millers or sugarcane planters;

(ii) bona fide occupiers of housing units forming part of tea estate camps;

(iii) workers affected by the closure of a sugar factory; or

(iv) workers opting for the Voluntary Retirement Scheme.

39. Petroleum refinery
40. Power station
41. Pulp and paper manufacture
42. Ready-mix concrete plant
43. Rearing of introduced species, such as crocodiles and monkeys
44. Refining and processing of edible oils and fats
45. Rendering plant
46. Retreading of tyres
47. Rock quarrying
48. Sawmill
49. Sewage treatment plant
50. Sea outfall
51. Shipyard and dry dock
52. Stone crushing plant
53. Sugar factory or refinery
54. Tannery and leather finishing
55. Timber treatment plant
56. Timber warehousing
57. Transfer station for solid waste
58. Undersea walk
59. Waste incinerator
60. Wetland development
61. Wine industry

Appendix 3

Guidelines for submission of EIA reports in soft copy versions

1.0 INTRODUCTION

As you may be aware under **Section 18** of the New Environment Protection Act 2002 and to allow more transparency, applicants submitting EIA reports should submit same in both hard copy and soft copy versions. The objective of adhering to the specifications, as set down below is to ensure that users can download the EIA reports through the Ministry's Website in a more user-friendly format. In this connection the Ministry strongly appeals to you for your collaboration and co-operation in this matter.

2.0 SPECIFICATIONS OF SOFT COPY VERSION

2.1 The soft copy version of the report, which should ***be identical to the hard copy version***, should be submitted in electronic file preferably on a CD or in WinZip format in floppy disks.

(a) The document should be broken into its different chapters with each chapter in a separate file. The executive summary also should be treated as a chapter and submitted in a separate file. If a chapter exceeds 50MB, then it should be further broken down into files of less than 50 MB.

(b) The table of contents also should be submitted in one separate file.

All the chapters/headings/appendices listed under the table of contents should have proper naming. This is important to allow the user to know which file he/she is accessing.

e.g Chapter 10 - Mitigative measures

(c) The table of contents should provide links to the different chapters including the executive summary and appendices.

(d) All filenames must

(i) be less than 8 characters

(ii) be in small letters

(iii) start with a letter

2.2 The soft copy version should be page numbered, in the same order as the hard copy and should be submitted in **any one** of the following 2 different formats:

- Html format.
- PDF format

2.3 All html files must be in the htm extensions file format. All image files must be in the gif/jpg extension file format.

2.4 `The EIA section will open the electronic file in the presence of the applicants in order to ensure that the hard and soft copy versions are absolutely the same. In case the soft copy version does not contain documents, which are present in the hard copy version, the applicants would be called upon to fill in the form as per Annex 1. Decision to accept or reject the soft copy version would be taken by the EIA Division and the applicants would be informed at a later stage.

3.0 The Ministry encourages applicants to submit their soft copy version reports at the time of submission of the EIA reports (hard copy versions) in order to allow timely processing.

Appendix 4

Guidelines for Scoping

The recommended approach to scoping and the activities associated with each step have been summarised in the following table. The results of this process (completion of 'Scoping Checklist 1') will provide a list of significant issues that should be considered in detail in the environmental study.

Table 1: Overview of Tools and Activities used in Scoping

Stage	Tool	Step
1	**Scoping Checklist 1: Undertaking Characteristics (See Table 2)**	Provides a detailed list of characteristics of undertakings that could give rise to significant effects on the environment. 1. Determine if one of the listed activities* is likely to occur (yes, no) 2. If yes, consider which aspects of the surrounding environment could be affected by that activity, or how changes in the environment might affect the activity - using 'Scoping Checklist 2' as a guide. 3. Determine the significance of the associated impact using 'Scoping Checklist 3' as a guide. *Activities listed are suggestions only. The Ministry of Environment may develop/incorporate additional activities relevant to select undertakings (e.g. stone crushing) to enhance the scoping tool.
2	**Scoping Checklist 2: Characteristics of the Environment (See Table 3)**	Provides a list of characteristics of the environment in which the undertaking or activity is implemented that could be susceptible to significant adverse effects.
3	**Scoping Checklist 3: Criteria for Evaluating the Significance of Environmental Effects (See Table 4)**	Provides a list of factors to be considered in deciding whether or not an impact is likely to be significant.

Note:
1. Information required to complete the checklist may require preliminary data collection and fieldwork. It is important for the proponent to provide as much information as possible to inform the requirements of the EIA study.
2. Where an activity is marked as 'not significant' the proponent should provide and explanation as to why the impact is 'not significant'.
3. The Scoping phase should be revisited if major aspects of the undertaking are changed later in the EIA process (e.g. change of site, change in project design etc.).

Table 2: Scoping Checklist 1: Characteristics of the Undertaking. Adapted from European Commission (2001).

No.	Questions to be considered in Scoping	Yes /No	Which characteristics of the environment and/or undertaking could be affected and how?	Is the effect likely to be significant? Why?
Will construction, operation or decommissioning of the Undertaking involve actions that will cause physical changes in the site (topography, land use, changes in water bodies, etc.)?				
	Permanent or temporary change in land use, land cover or topography including increases in intensity of and use?			
	Clearance of existing land, vegetation and buildings?			
	Creation of new land uses?			
	Pre-construction investigations (e.g. boreholes, soil testing)?			
	Construction works?			
	Demolition works?			
	Temporary sites used for construction works or housing of construction workers?			
	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations?			
	Reclamation works?			
	Dredging?			
	Coastal structures (e.g. seawalls)?			
	Offshore structures?			
	Production and manufacturing processes?			
	Facilities for storage of goods or materials?			
	Facilities for treatment or disposal of solid wastes?			
	Facilities for long term housing			
	New road, rail or sea traffic during construction or operation?			
	New road, rail, air, waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?			
	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?			
	New or diverted transmission lines or pipelines?			
	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourse or aquifers?			
	Stream crossings?			
	Abstraction or transfers of water from ground surface water?			
	Changes in water bodies or the land surface affecting drainage or run-off?			
	Transport of personnel or materials for construction, operation or decommissioning?			
	Long-term dismantling or			

No.	Questions to be considered in Scoping	Yes /No	Which characteristics of the environment and/or undertaking could be affected and how?	Is the effect likely to be significant? Why?
	decommissioning or restoration works?			
	Ongoing activity during decommissioning which could have an impact on the environment?			
	Influx of people to an area, either temporarily or permanently?			
	Introduction of alien species?			
	Loss of native species or genetic diversity?			
	Any other actions?			
Will the physical changes in the site, as a result of the undertaking, amplify climate change impacts (e.g. coastal erosion)?				
	For example, construction or activities that will result in:			
	Change in topography			
	Change in land use			
	Change in water bodies or hydrology			
	Change in natural coastal buffers (i.e. mangroves, sand dunes)			
Will the Undertaking be exposed to climate change impacts (during construction to decommissioning)? Consider a range of climate change scenarios.				
	Site of operation proximity to climate change impacts:			
	Areas vulnerable to flooding during storm events?			
	Areas vulnerable to coastal inundation?			
	Areas vulnerable to landslides?			
	Areas vulnerable to erosion?			
	Areas vulnerable to other natural hazards?			
Will construction or operation of the Undertaking use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?				
	Land especially undeveloped or agricultural land?			
	Water?			
	Minerals?			
	Aggregates?			
	Forests and timber?			
	Energy including electricity and fuels?			
	Any other resources?			
Will the Undertaking involve use, storage, transport, handling or production of substances or materials that could be harmful to human health or the environment or raise concerns about risks to human health (actual or perceived)?				
	Will the undertaking involve use of substances or materials that are hazardous or toxic to human health or the environment (flora, fauna, water supplies)?			
	Will the undertaking result in changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)?			
	Will the undertaking affect the welfare of			

No.	Questions to be considered in Scoping	Yes /No	Which characteristics of the environment and/or undertaking could be affected and how?	Is the effect likely to be significant? Why?
	people (e.g. by changing living conditions)?			
	Are there especially vulnerable groups of people who could be affected by the undertaking (e.g. hospital patients, the elderly)?			
	Any other causes?			
Will the Undertaking produce solid wastes during construction, operation or decommissioning?				
	Spoil, overburden or mine wastes?			
	Municipal waste (household and or commercial wastes)?			
	Hazardous or toxic wastes (including radioactive wastes)?			
	Other industrial process wastes?			
	Surplus product?			
	Sewage sludge or other solid wastes from effluent treatment?			
	Construction or demolition wastes?			
	Redundant machinery or equipment?			
	Contaminated soils or other material?			
	Agricultural wastes?			
	Any other solid wastes?			
Will the Undertaking release Greenhouse Gas (GHG) emissions, pollutants or any hazardous, toxic or noxious substances to air? If yes, estimate the emissions (CO2e/year) associated with the following activities.				
	Emissions from combustion of fossil fuels from stationary or mobile sources?			
	Emissions from production processes?			
	Emissions from materials handling including storage or transport?			
	Emissions from construction activities including plant and equipment?			
	Dust or odours from handling of materials including construction materials, sewage and waste?			
	Emissions from incineration of waste?			
	Emissions from burning of waste in open air (*e.g.* slash material, construction debris)?			
	Emissions from any other sources?			
Will the Undertaking cause noise and vibration or release of light, heat energy or electromagnetic radiation?				
	From operation of equipment (e.g. engines, ventilation plant, crushers)?			
	From industrial or similar processes?			
	From construction or demolition?			
	From blasting or piling?			
	From construction or operational traffic?			
	From lighting or cooling systems?			
	From sources of electromagnetic radiation (consider effects on nearby sensitive equipment as well as people)?			

No.	Questions to be considered in Scoping	Yes /No	Which characteristics of the environment and/or undertaking could be affected and how?	Is the effect likely to be significant? Why?
	From any other sources?			
Will the Undertaking lead to risks of contamination of land or water from releases of pollutants onto the ground or into sewers, surface waters, groundwater, coastal waters or the sea?				
	From handling, storage, use or spillage of hazardous or toxic materials?			
	From discharge of sewage or other effluents (whether treated or untreated) to water or the land?			
	By deposition of pollutants emitted to air, onto the land or into water?			
	From any other sources?			
	Is there a risk of long term build up of pollutants in the environment from these sources?			
Will there be any risk of accidents during construction or operation of the Undertaking that could affect human health or the environment?				
	From explosions, spillages, fires etc. from storage, handling, use or production of hazardous or toxic substances?			
	From events beyond the limits of normal environmental protection (e.g. failure of pollution control systems)?			
	From any other causes?			
	Could the undertaking be affected by natural disasters causing environmental damage (*e.g.* floods, earthquakes, landslip, *etc.*)?			
Will the Undertaking result in social changes, for example, in demography, lifestyles, or employment?				
	Changes in population size, age, structure, social groups *etc.*?			
	By resettlement of people or demolition of homes or communities or community facilities (e.g. schools, hospitals, social facilities)?			
	Through in-migration of new residents or creation of new communities?			
	By placing increased demands on local facilities or services (e.g. housing, education, health)?			
	By creating jobs during construction or operation or causing the loss of jobs with effects on unemployment and the economy?			
	Any other causes?			
Are there any other factors that should be considered such as consequential development that could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?				
	Will the undertaking lead to pressure for consequential development that could have significant impact on the environment (e.g. more housing, new roads, new supporting industries or utilities, etc.)?			
	Will the undertaking affect residents surrounding the project sites in terms of			

No.	Questions to be considered in Scoping	Yes /No	Which characteristics of the environment and/or undertaking could be affected and how?	Is the effect likely to be significant? Why?
	their ability to adapt to climate change (e.g. access to sheltered areas, increased erosion further along the coast)?			
	Will the undertaking lead to development of supporting facilities, ancillary development or development stimulated by the undertaking which could have impact on the environment, e.g.: • Supporting infrastructure (roads, power etc.) • Housing development • Extractive industries • Supply industries • Other?			
	Will the undertaking lead to after-use of the site that could have an impact on the environment?			
	Will the undertaking set a precedent for later developments?			
Could the impacts from combinations of climate change events (e.g. sea level rise, more intense storms) interact among themselves, or with other future stressors (e.g. increased population)? How will these synergistic or additive impacts effect the undertaking over its life cycle?				
	Building design/materials/orientation			
	Location			
	Socio-economic activities			
Have alternatives in the design, construction and operation of the undertaking been considered, which may mitigate: social and environmental impacts; exposure/sensitivity to climate change; cumulative impacts associated with climatic and non-climatic stressors?				
	Modification of design and/or building materials?			
	Alternative site?			
Will the design, construction and operation of the undertaking reduce the proponents' ability to adapt to predicted climate change impacts?				
	Building design (materials, orientation)			
	Associated infrastructure (e.g. wastewater management system)			

Table 3: Scoping Checklist 2: Characteristics of the environment associated with the undertaking. Adapted from European Commission (2001)

No.	Question	Examples
1	Are there features of the local environment that could be affected by the undertaking?	• Areas that are protected under international or national or local legislation for their ecological, landscape, cultural or other value. • Sensitive ecological areas e.g. Wetlands, sand dunes • Areas used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration. • Areas or features of high landscape or scenic value? • Routes or facilities used by the public for access to recreation or other facilities. • Transport routes which are susceptible to congestion or which cause environmental problems. • Areas or features of historic or cultural importance.
2	Is the Undertaking in a location where it is likely to be highly visible to many people?	• Exposure to residential areas, public open spaces
3	Is the Undertaking located in a previously undeveloped area where there will be loss of greenfield land?	
4	Are there **existing** land uses on or around the undertaking location which could be affected by the undertaking?	• Homes, gardens, other private property • Industry • Commerce • Recreation • Public open space
5	Are there any plans for **future** land uses on or around the undertaking location that could be affected by the Undertaking? Will these future developments (e.g. expansions) be sensitive or exposed to climate change impacts?	• Areas that are sensitive to sea level rise • Areas prone to flooding
6	Are there any areas on or around the location that are densely populated or built-up, which could be affected by the undertaking?	• Residential areas
7	Are there any areas on or around the location that are occupied by sensitive land uses that could be affected by the undertaking?	• Hospitals, • Schools, • Places of worship • Community facilities
8	Are there any areas on or around the location that contain important, high quality or scarce resources that could be affected by the undertaking?	• Groundwater resources • Surface waters • Forestry • Agriculture • Fisheries
9	Are there any areas on or around the location of the undertaking that are already subject to pollution or environmental damage (e.g. where existing legal environmental standards are exceeded, which could be affected by the undertaking)?	• Landfill

No.	Question	Examples
10	Is the Undertaking location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions (e.g. temperature inversions, fogs, severe winds, which could cause the Undertaking to present environmental problems)? Consider both current and future climate hazards.	
11	Is the Undertaking likely to affect the physical condition of any environmental media?	• Groundwater resources • Surface waters • Forestry • Agriculture • Fisheries
12	Are releases from the Undertaking likely to have effects on the quality of any environmental media?	• Local air quality • Global air quality including climate change and ozone depletion • Water quality – rivers lakes, groundwater • Soils
13	Is the Undertaking likely to affect the availability or scarcity of any resources either locally or globally?	• Fossil fuels? • Water? • Minerals and aggregates? • Timber? • Natural hazard buffers (mangroves, sand dunes) • Other non-renewable resources?
14	Is the Undertaking likely to affect human or community health or welfare?	• The quality or toxicity of air, water, foodstuffs and other products consumed by humans? • Morbidity or mortality of individuals, communities or populations by exposure to pollution? • Occurrence or distribution of disease vectors including insects? • Vulnerability of individuals, communities or populations to disease? • Individuals' sense of personal security? • Community cohesion and identity? • Cultural identity and associations? • Minority rights? • Housing conditions? • Employment and quality of employment? • Economic conditions? • Social institutions?

Criteria for Evaluating the Significance of Impacts

The following table contains a list of questions that proponents can utilize when evaluating the significance of impacts, and are intended to be used in conjunction with 'Scoping Checklist 1'. Please note, this tool is intended as a starting point for assessing significance and should not be interpreted as definitive list. Proponents may require tailored evaluation criterion for their own social, political and environmental context.

Table 4: Scoping Checklist 3: Criteria for Evaluating the Significance of Impacts. Adapted from European Commission (2001)

No.	Question	Output (insert in 'Scoping Checklist 1')
1	Will there be a large change in environmental conditions?	
2	Will new features be out-of-scale with the existing environment?	
3	Will the effect extend over a large area?	
4	Will many people be affected?	
5	Will other social and environmental items (i.e. fauna and flora, businesses, facilities) be affected?	
6	Will valuable or scarce features or resources be affected?	
7	Is there a risk that environmental standards will be breached?	
8	Is there a risk that protected sites, areas, and features will be affected?	
9	Is there a high probability of the effect occurring?	
10	Will the effect continue for a long time?	
11	Will the effect be permanent rather than temporary?	
12	Will the impact be continuous rather than intermittent?	
13	If it is intermittent will it be frequent rather than rare?	
14	Will it be difficult to avoid, or reduce or repair or compensate for the effect?	
15	Will the impact enhance, or degrade, the proponents' (or the community's) ability to adapt to climate change?	
16	Will the impact lead to reactive maladaptive measures (actions which fail to ameliorate the impacts of climate change, whilst also imposing additional social, environmental or financial costs)?	
17	Does the impact (e.g. GHG emissions) exceed the limit outlined in relevant Government policies and/or laws?	

Based on the output of the Scoping assessment, proponents will have an understanding of the priority impacts and considerations to be addressed via detailed assessment in the full EIA.

ANNEX I

Please indicate which documents are missing from the softcopy version of the EIA report

TITLE OF REPORT: ……

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1. ……..
2. ……..
3. ……..
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DESIGNATION: ……..

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