



EIA GUIDELINES 2020

RULES AND PROCEDURES FOR CONDUCTING AND REVIEWING ENVIRONMENTAL IMPACT ASSESSMENTS

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List of Abbreviations

AOI	Area of Influence
CI	Cumulative Impact
EPA	Environmental Protection Agency
EAB	Environmental Assessment Board
EAT	Environmental Appeals Tribunal
NCEA	The Netherlands Commission for Environmental Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESIA	Environmental & Social Impact Assessment
GHG	Green House Gas
LCA	Life Cycle Analysis
OP	Operational Permit
ST	Screening Tool
SEP	Stakeholder Engagement Plan
T&S	Terms & Scope
The Act	The Laws of Guyana, Environment Protection Act Chapter 20:05
TI	Transboundary Impact
VCs	Valued Components
WWF	World Wildlife Fund

1.0 Foreword

In 2000, then subsequently in 2004, following the amendment of the Guyana Environmental Protection Act (1996), the Environmental Protection Agency (EPA) prepared a Manual providing guidance for the conduct, preparation and review of EIAs. These guidelines included general and sector specific rules and procedures for conducting, preparing and reviewing Environmental Impact Assessments (EIAs).

From 2000 to now, the economic, social, technological and physical landscape of Guyana has changed significantly. Consequently those guidelines became obsolete and required updating. In 2020, the EPA through the generous financial assistance of World Wildlife Fund (WWF) and technical support from the Netherlands Commission for Environmental Assessment (NCEA), acquired the services of **Mr. Tomas Cathal Healy-Singh of Nuada Consultancy** and **Dr. Heike Pflasterer of ECONCEPT** to update and develop these guidelines. The updated Manual consists of the generic guidelines and seven (7) sector Specific guidelines that addresses climate vulnerability, international treaties, opportunities for renewable energy and the emerging Petroleum sector. With these gaps being filled, the EPA should now be able to more accurately assess new and complex projects and monitor and mitigate their social and environmental impacts. Additionally the updated guidelines will now be able to meet international best practices for EIA conduct, preparation and review.

The EPA takes this opportunity to acknowledge and thank **WWF, NCEA** and **NUADA Consultancy** and **ECONCEPT** for their generous financial and technical support and provision of services towards the successful completion of these documents.

2.0 Background

The Environment Protection Act Chapter 20:05, Laws of Guyana (the Act) is the cornerstone of Guyanese environmental legislation, enacted in 1996. The Act provided for the establishment of the Environmental Protection Agency (EPA) to commence the steps necessary for the management, conservation, protection and improvement of the environment, the prevention and control of pollution, the assessment of the impact of economic development on the environment, and the sustainable use of natural resources.

The Act requires the EPA to ensure that any developmental activity which may cause an adverse effect on the natural environment be assessed before such activity is commenced. Such adverse effects are to be considered in deciding whether or not such activity should be authorised. In carrying out its functions, the EPA is to promote the participation of members of the public in the process of integrating environmental concerns in planning and development decision making.

Part IV of the Act requires all developers of any Project listed in the Fourth Schedule or any other Project that may significantly affect the environment to apply to the EPA for an Environmental Permit¹. The application requires submission of information on the nature, scale and location of the proposed Project. If the EPA determines effects are going to be significant or the impacts are unknown, an Environmental Impact Assessment (EIA) is required.

EIAs are to be carried out by independent and suitably qualified person(s) approved by the EPA. The EIAs identify, describe and evaluate the direct and indirect effects of the proposed Project on the environment, the use of natural resources, the emission of contaminants, the creation of nuisances and a description of the measures which the developer intends to use to mitigate any adverse effects. A statement of reasonable alternatives (if any), and reasons for their rejection is required as well as a statement of the degree of irreversible damage along with an explanation of how the damage is assessed. An emergency response plan for containing and cleaning up pollution and the developer's programme for rehabilitation and restoration of the environment are also required. A non-technical summary of the information provided in the EIA must also be submitted to the EPA.

The Act requires that the EIA be prepared in consultation with members of the public, interested bodies and organisations. The resultant EIA and supporting statements are public documents. It was evident that the EPA needed clear guidance on what constitutes a good Environmental Impact Assessment (EIA). This has resulted in the development of several documents over the past 20 years.

Beginning with the development of EPA's 'Generic and Sector Specific EIA Guidelines (2000) and 'Rules and Procedures for Conducting and Reviewing EIAs (2004)'. To support the 2004 EIA Guidelines, the EPA developed 'Environmental Guidance for the Development, Implementation and Operation of Projects (2006)', which outlines the procedures for identifying the general or specific circumstances that require an EIA. To assist with managing proposed and existing developments and ensuring adequate mitigation measures are included in the preparation of Environmental Authorisations, the EPA developed 'Guidelines for Preparation of an Environmental Management Plan (EMP, 2013)'. The EMP Guidelines provide a description of the methods and procedures for mitigating and monitoring impacts.

¹ The Act, Part IV, Requirement for environmental impact assessment 11. (1)

In 2017, the EPA began developing draft Environmental Impact Assessment (EIA) Guidelines for Off-shore Oil Exploration and Production, these were intended to cover all stages of off-shore hydrocarbon development – exploration (seismic surveys, exploration drilling), development (delineation drilling, site development, servicing), operations and closure (including progressive rehabilitation). However these were never completed.

In 2019, the EPA developed draft EIA Screening Criteria for identifying general and specific circumstances in which proposed Projects would be subject to an EIA. These Criteria were designed as a tool to distinguish between Projects whose anticipated impacts are not likely to be significant and those Projects whose anticipated impacts are likely to be significant and hence, would be required to undergo an EIA. In 2020, the EPA developed a numerical Screening Tool using environmental and social criteria to facilitate the process for determining impact significance and when to proceed with an EIA.

The economic, social and technological landscape of Guyana has changed significantly since the Act was established. The emerging oil and gas sector and potential for introduction of associated downstream industries suggests major economic opportunities and at the same time present a challenge for pollution control regulators, resource managers, environmental civil society organisations and those potentially affected by these new types of industries.

To address these challenges, the EPA reviewed international standards and best practice procedures for conducting EIAs and the EIA requirements of the International Finance Corporation (World Bank Group) and the Inter-American Development Bank, for securing Project financing.

These EIA Guidelines 2020 are an update of existing EPA EIA rules and procedures for permitting the development, implementation, and operation of Projects. Additionally, sector Guidelines for Mining, Forestry, Electricity Generation (Thermal and Hydropower), and Electricity Transmission have been updated and consolidated in the annexes of these 2020 EIA Guidelines. The Offshore Petroleum Exploration and Production Guideline were also developed and have been consolidated in the Annexes of these 2020 EIA Guidelines. These Oil and Gas Guidelines were developed through a separate consultancy by Dr. Heike Pflasterer of ECONCEPT, Germany.

Please note that these 2020 Guidelines use the term “ESIA” to reflect the significance of ‘social’ as well as ‘environmental’ impacts associated with development Projects. For all regulatory intents and purposes, the term means the same thing as “EIA”.

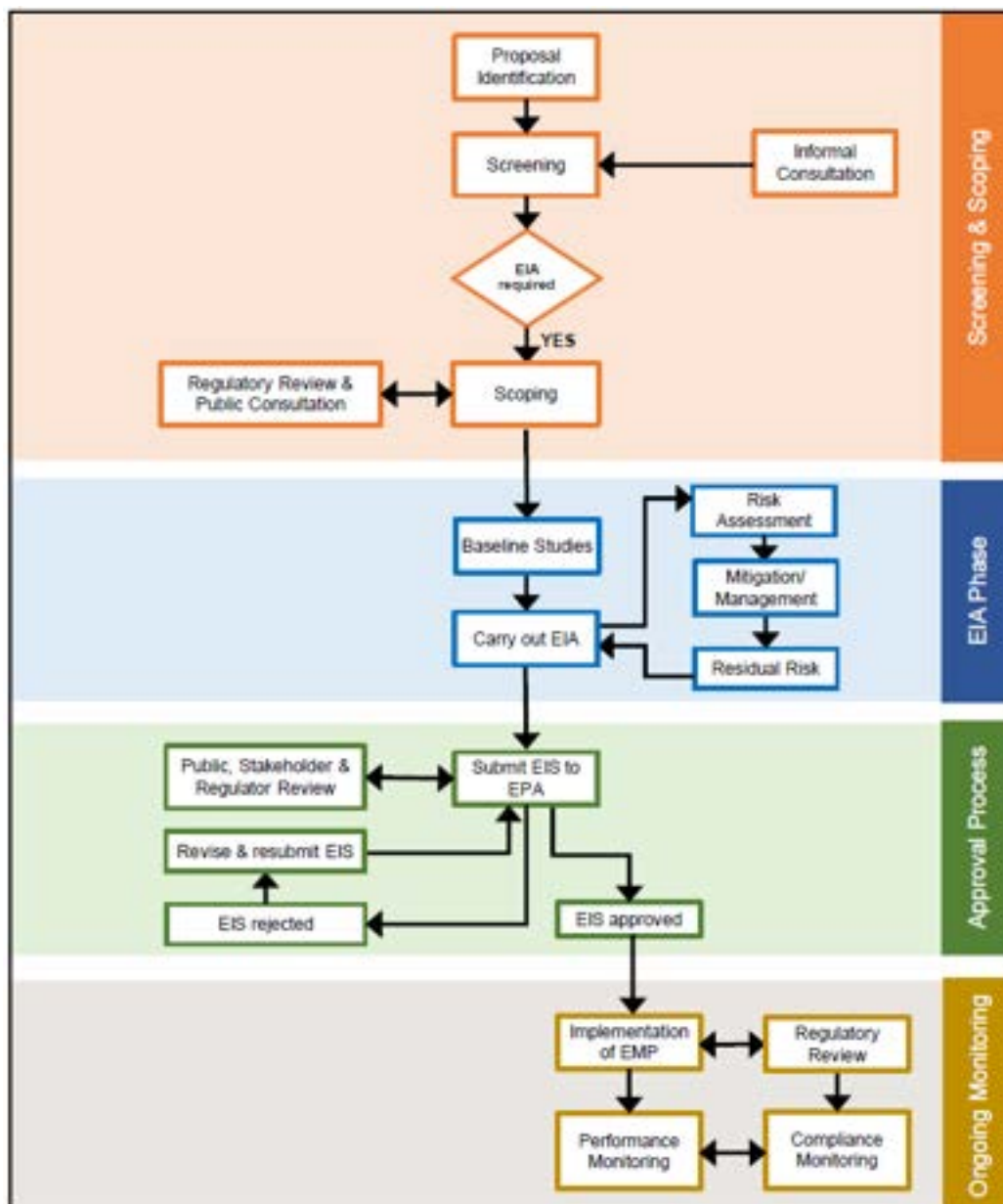
The intention of these 2020 Guidelines is to provide the Environmental Protection Agency, the Environmental Assessment Board, Sector Agencies, Developers, the Private Sector, non-Governmental Organizations, Members of the Public and Consultants and any other stakeholders, a set of approved guidelines for the conduct and review of Environmental & Social Impact Assessments (ESIAs) in Guyana.

These Guidelines are the vehicle for implementing the statutory requisites of Part IV of the Act. They are also a resource to support the development of future regulatory instruments by the EPA.

2.0 Defining the ESIA

An ESIA is both a tool and a process for decision-makers to identify, scope and assess the nature and scale of potential environmental and social impacts of proposed Projects, to evaluate alternative approaches, and to design appropriate measures to prevent, mitigate, and monitor adverse effects.

In accordance with the Environmental Protection Act, Cap. 20:05 the EIA process is initiated by the project proponent via the preparation of an application and project summary and the submission to EPA for screening. A generic flowchart of the overall process from screening to monitoring the project implementation is provided in Fig. Below:



There are three main phases in the process: impact screening, scoping and assessment. The recently developed numerical Screening Tool is used to determine the potential significance of foreseen impacts. The Tool evaluates the nature, scale and location of the Project and quantifies the characteristics of the impacts and their significance. If an ESIA is required the scoping phase begins.

The purpose of scoping is to identify:

- Important stakeholders and issues to be considered in the ESIA Report
- Time and space boundaries of the ESIA
- Information necessary for decision making
- Significant effects and factors to be assessed
- Feasible alternatives to the proposed Project

Details of the scoping and assessment phases are presented in Chapter 8.3 below.

ESIAs are the international standard for identifying and planning for the avoidance or minimization of environmental and social risks and impacts that may arise from the development and exploitation of resources. ESIAs are meant to foster resource efficiency and equity among stakeholders using principles of sustainability. As each Project is different, ESIAs will be customized to reflect issues that are site relevant and Project specific.

In some cases, the outcome of the ESIA process may require a developer to redesign, relocate or even in some cases, abandon the Project. The experience of ESIAs in other countries shows that although an ESIA takes time and has associated costs, these are out-weighed by the overall benefits achieved through public consultation, early identification of potential alternatives and avoidance of likely problems at the implementation stage of the Project.

Public consultations are essential to the process to make accurate information about the Project available and to allow for the identification of areas of concern or controversy. By considering and responding to the public (particularly people living in the area or interest groups with particular skills and knowledge) the developer will be able to improve the Project. Modifying a Project early in the process is usually easier and less expensive than trying to do it later. Responding properly to criticism and comments from the public can improve a developer's image as well as make a Project more cost-effective, socially acceptable, and less environmentally damaging.

A key output of the ESIA is an Environmental Impact Statement (EIS). The EIS is an easily accessible yet broadly encompassing summary of the content of the ESIA Report presented without technical jargon, hence understandable to anybody without a background in the environment or the Project. This summary needs to be concise and engaging enough to enable all relevant stakeholders and the public to get a proper sense of the key issues at stake and the proposed way forward.

These Guidelines contain the roles and responsibilities and rules and procedures of all stakeholders involved in the ESIA process. Chapter 6 provides details of the components of a generic ESIA and EIS applicable to all Project types. Annex 1 contains a Checklist to enable the EPA to appraise ESIA applications and a Summary Table to report the outcome. A list of specific ESIA guidelines for the Forestry, Mining and Electricity Generation Sectors (Hydropower and Thermal power) and Electricity Transmission are also annexed to these Guidelines and appear as standalone documents.

3.0 The Role of the EPA

The functions of the EPA stated in the Act fall into three broad categories, namely:

1. regulation,
2. coordination, and
3. promotion of public awareness and participation in environmental protection.

The EPA's regulatory function obligates it to monitor and enforce the Act and associated regulations. This function of the EPA ensures that development integrates measures for environmental impact avoidance, mitigation, remediation, and protection.

The EPA has a major coordinating function for the sustainable use and conservation of Guyana's natural resources. The work of the EPA is complex, spanning a range of interconnected issues, making coordination with private, public sector and non-governmental organisations necessary for the accomplishment of its mandate.

The EPA has a responsibility to promote the participation of the public in the process of integrating environmental concerns in planning for sustainable development. This is achieved by providing information to the public on EPA's procedures and processes, environmental issues, and problems. The EPA intends to strengthen public participation in the ESIA process by expanding the opportunity for public engagement in the development decision making process.

The key guiding principles for environmental management in Guyana are described in the Environmental Protection Act, Cap. 20:05 and consequently reflected in these generic EIA Guidelines. These five principles include:

1. *Polluter Pay Principle*: the polluter should bear the cost of the measures to reduce and remediate pollution decided upon by public authorities to ensure the environment is in an acceptable state and should compensate citizens for any harm they suffer from pollution
2. *Precautionary Principle*: when there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing measures to prevent or mitigate environmental degradation
3. *Strict Liability Principle*: any person who contravenes the Act or regulations shall be liable for to the penalties prescribed
4. *Avoidance Principle*: it is preferable to avoid environmental damage as it can be impossible or more expensive to repair than prevent damage
5. *State of Technology Principle*: measures protecting the environment are restricted to what is technologically feasible and as technology improves, the improved technology should be used to prevent and repair environmental damage.

From the perspective of good international industry practice perspective, the principle of substitution (i.e. assessing and replacing a potentially harmful or hazardous method/technique with a less harmful or hazardous option) is part of Guyana's Avoidance Principle. The principle of applying Best Available Technique (BAT) falls within the State of Technology Principle and the principle of the use of sanctions is covered by the Strict Liability Principle. Additional principles implemented by the oil and gas industry usually cover adopting a risk-based approach and recognized requirements for public consultation, engagement and transparency.

3.1 General Functions

- a) take such steps as are necessary for the effective management of the environment, to ensure conservation, protection, and sustainable use of its natural resources
- b) promote the participation of members of the public in the process of integrating environmental concerns in planning for development on a sustainable basis
- c) co-ordinate the environmental management activities of all person, organisations and agencies
- d) establish, monitor and enforce environmental regulations
- e) prevent and control environmental pollution
- f) produce sectoral guidelines on what may constitute significant effects on the environment
- g) ensure that developmental activity which may cause an adverse effect on the natural environment be assessed before such activity is commenced and that adverse effects be accounted for when deciding whether such activity should be authorized
- h) promote and encourage a better understanding and appreciation of the natural environment and its role in social and economic development.

3.2 Management Functions

- Formulate standards and codes of practice to be observed for the improvement and maintenance of the quality of the environment and limits on the release of contaminants into the environment
- Request, examine, review, evaluate and approve or reject environmental impact assessments and risk analyses and make suitable recommendations for the mitigation of adverse effects of any proposed activity on the environment
- Make use of the current principle of environmental management through Environmental Management Plans
- Investigate complaints, conduct investigations and inspections to ensure compliance with the Act
- Carry out surveys and obtain baseline information on the natural resources including ecosystems and micro eco-systems, population counts, species identification, location and condition and make such surveys, studies, and information available to members of the public.

3.3 Public Engagement functions

- Promote the participation of members of the public in the process of integrating environmental concerns in planning for development on a sustainable basis.
- Provide information and education to the public regarding the need for and methods of protection of the environment, improvement of the environment where altered directly or indirectly by human activity, and the benefits of sustainable use of natural resource.
- Provide general information to the public on the state of the environment by regular reports produced at least annually.

3.4 Public Register

The EPA will maintain, open to the public, registers containing particulars of:

- a. each application for an Environmental Authorisation made, including the name and address of the person making the application, and the location at which any activity is proposed to be or is undertaken pursuant to the environmental authorisation
- b. each environmental authorisation granted and the terms and conditions included therein
- c. Each cancellation, revocation, variation or transfer of an environmental authorisation
- d. Enforcement and prohibition notices served under Sections 26 and 27 (of the Act)
- e. Each incident or occurrence causing or threatening serious or material environmental harm that comes to the notice of the Agency
- f. Each order made under Section 19, Prevention and Control of Pollution (of the Act)
- g. Prosecutions and other enforcement action under the Act

The register must be kept available for inspection by any member of the public during ordinary office hours at the principal office of the EPA. A member of the public may obtain a copy of any part of the register subject to payment of the determined or prescribed fee.

3.5 Development Projects

The Environmental Protection Agency is responsible for ensuring that developmental Projects conform to the goal of sustainable development. To ensure that these goals are met, it administers the process of Authorisation and ensures that polluters remediate the environments they have polluted through the process of inspection, pollution control and enforcement. This administration includes:

- Authorising New Developments: Any new development that may have a significant effect on the environment is required to conform to the EPA's authorisation process which involves application, screening and publication of the decision as to whether an ESIA is required or not. Where ESIA's are required, the Terms and Scope (T&S) is prepared by the EPA in collaboration with the project proponent.
- Monitoring of Authorised Activities: As part of EPA's responsibility to ensure that developments mitigate against pollution and remediate when necessary, compliance monitoring of operations and ambient environment is conducted
- Investigating Unauthorised Activities: When pollution complaints are reported, the EPA acts by writing to and visiting the premises about which the complaint arose. Where necessary, the EPA writes to the owner/operator of existing facilities informing them of the need to register and subscribe to the Authorisation process
- Authorising Existing Facilities: The EPA through the Act has implemented a registration process to regularise existing industrial facilities. The EPA conducts audits/site inspections of registered existing operations which may be significantly damaging the environment. If corrective action is required, the EPA may prepare a compliance schedule. Once the schedule is implemented by the Owner/Operator, the EPA may issue an authorisation.

3.6 Environmental Authorisation

The Act requires that developers of new Projects deemed by the Agency to have potentially significant impacts on the environment or listed in the Fourth Schedule (of the Act) apply to the Agency for Environmental Authorisations.

The Authorisation process varies depending on the type, scale and location of Project, potential environmental impacts and whether it is new or existing. Existing operations listed in the Fourth Schedule and those likely to have negative social and environmental effects are required to be authorised by the EPA.

For large scale Projects in the extractive sector whose negative impacts are known, ESIA's are likely to be mandatory and if approved a Permit is issued. In smaller scale Projects as well as Projects outside of the extractive sector, ESIA's are conditional. The EPA's introduced numerical Screening Tool that is used to evaluate Project characteristics and impact significance. The screening results establish the potential significance of social and environmental impacts and whether an ESIA must be conducted by the developer for approval.

The EPA's standard Application Form for New and Existing Development indicates what information is necessary for a developer seeking authorisation. The Form must be accompanied by the Application Fee, a Project summary and include information on the developer, the investment, a site plan, a description of the nature and scale of the Project, materials to be used, produced and disposed of, also information regarding the proposed location, proof of ownership, surrounding conditions, proximity to infrastructure, resource use requirements and likely environmental effects.

The EPA will review the application, visit the proposed location, and determine whether the Project should be subjected to or exempted from the ESIA requirement.

Application Forms for Existing and New Developments are available on EPA's website.

3.6.1 *Permitting of Existing Operations*

Existing operations listed in The Fourth Schedule of the Act that do not have environmental authorisation are required to register their operations with the EPA for an Operational Permit (OP) by completing and submitting the standard Application Form for Existing/Registered Operations along with the required Fee.

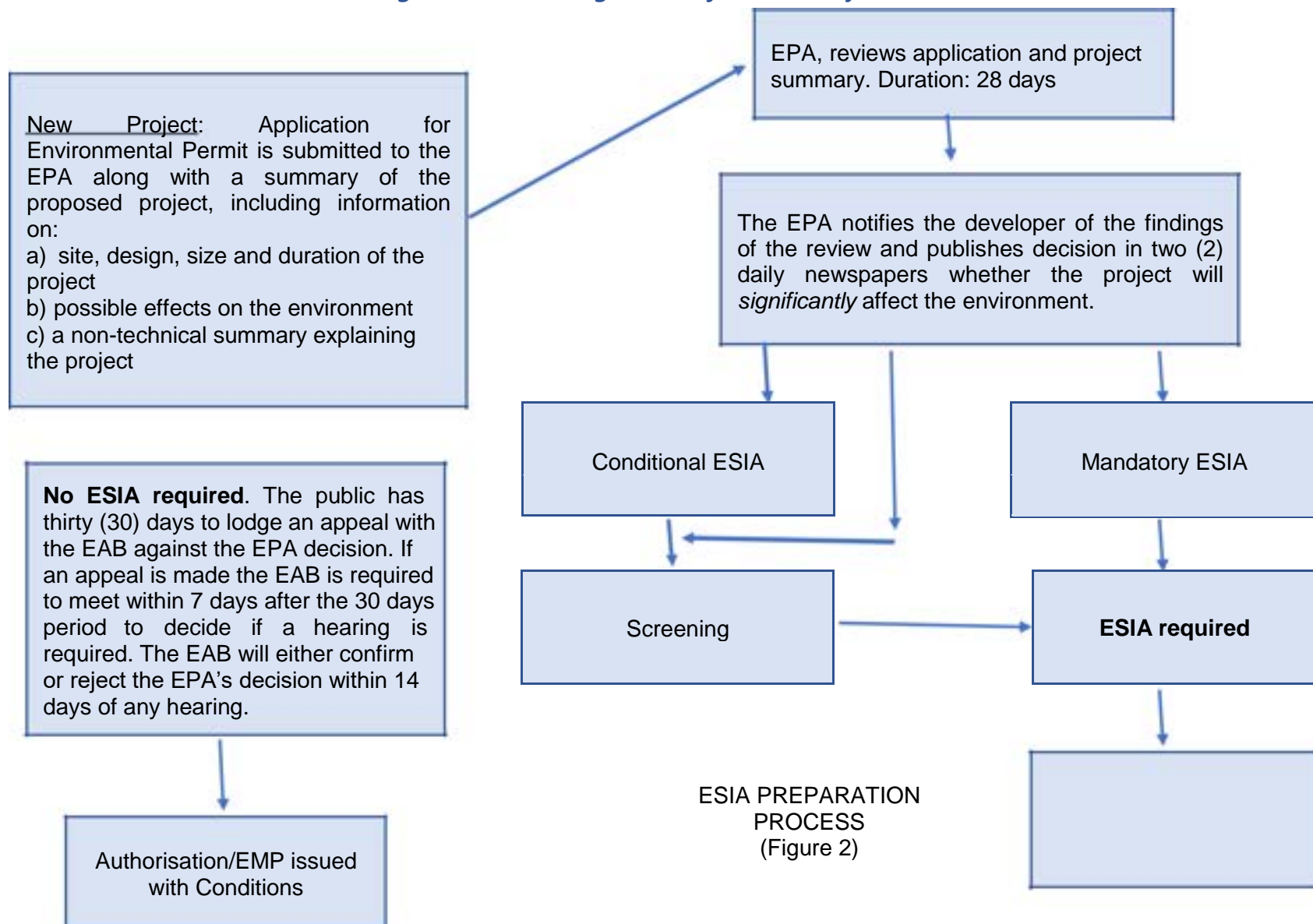
Once the application is made, the EPA responds by indicating a time and date for the conduct of verification/site audits of the operations with the intention of identifying areas of concern that require environmental improvements. If these areas are identified, a Corrective Action Plan including a compliance schedule for environmental improvement is developed by the EPA and implemented by the developer. Once the improvement is achieved an OP is granted. If no corrective actions are required an OP is issued. An OP may include the requirement for the preparation of an Environmental Management Plan.

Registration for existing Projects commenced in 2001 after the passing of the Environmental Protection Regulations of 2000.

3.6.2 Permitting New Projects

For new Projects the EPA may screen, request, examine, review, evaluate and approve or reject ESIAs and make suitable recommendations for the mitigation of adverse effects of any proposed activity on the environment. For new development Projects there are generally two processes based on whether or not an ESIA is deemed necessary. *Figure 1: Permitting Process for New Projects* illustrates the decision-making process for determining new Project applications.

Figure 1: Permitting Process for New Projects



Permitting New Projects – No ESIA required

If the EPA decides that an ESIA is not required, the EPA will publish a notice to the public, in at least two daily newspapers informing them of the EPA's position, thereby allowing public review of the decision. Appeals against the EPA's decision may be made to the Environmental Assessment Board (EAB) within 30 days of the publication of the notice. Once there are no objections, Authorisation is issued with conditions for environmental management against which developments are to report when submitting an annual report to the EPA by the 31st March each year. Authorisation may include the need for the creation and implementation of an on-going Environmental Management Plan at the discretion of the EPA.

Permitting New Projects – ESIA Required

Projects determined to have significant associated impacts are subject to the most rigorous process for environmental permitting - the ESIA. Specialized consultants are required to support the Developer in preparing the ESIA.

The determination of ESIA is made by the EPA within 4 weeks of having received and reviewed a fully completed Application Form for new Projects. It is essential that Developers provide all the required information in their application. The 4-week decision-making period only commences after all requisite information is received and the applicant is notified that the decision process has begun. A site visit will also be conducted by the EPA prior to making the decision.

Once the decision is made that an ESIA is required for the Project, the EPA informs the developer and publishes the decision at the Developer's cost, in at least two newspapers. A Project summary is also made available to members of the Public. Members of the public have twenty-eight days from the date of publication to make written submission to the Agency setting out questions and matters which they require to be answered or considered in the ESIA.

3.6.3 Stakeholder Engagement

In the first step of the ESIA process, the developer submits to the EPA, the qualifications and experience of the consultants proposed to undertake the ESIA for approval. Once approved the consultants are formally engaged by the developer.

The consultants then prepare and submit a Project Description to the EPA (the EPA may request modifications to the Project summary presented in the Application to make it more appropriate for public consultations). The Description will be in non-technical format. It will include information on the nature, scale, location and likely social and environmental impacts of the Project to be scoped, including alternatives, and focus on issues of potential concern, as well as Project benefits (details of the Project Description are presented at beginning of Chapter 8).

Once agreed, the Project Description is made available to the public by the developer. This commences a twenty-eight (28) day consultation period. The Description is made available to the public at National Libraries and to Regional Democratic Councils, Neighbourhood Democratic Councils, Village Council, Indigenous groups, women's groups and Non-governmental organisations etc, and in the area where the Project is proposed and likely to influence directly, as recommended by the EPA. It is also posted on the EPA's website and other communication channels deemed necessary by the EPA. Project descriptions should be presented to members of the public in user-friendly and appropriate formats.

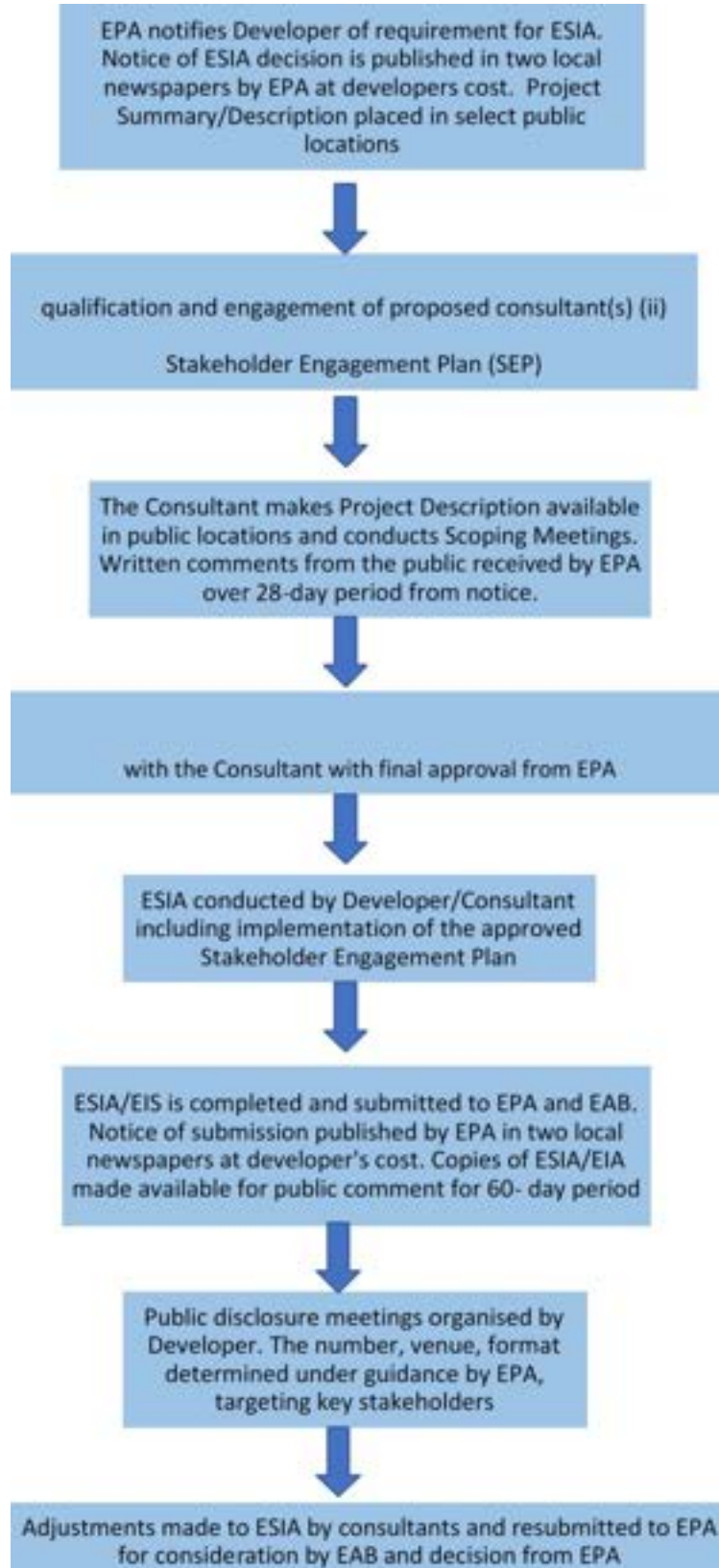
The next step in the ESIA process is for the consultant to prepare a draft Stakeholder Engagement Plan (SEP) with guidance from the EPA. The draft Plan will cover the initial Scoping Meetings. The EPA Agency will recommend to the Developer, the number, dates and most appropriate locations for these Meetings, as well as identify the stakeholders who should be consulted with.

Scoping Meetings are usually conducted within 28 days of the public notice being published in local newspapers. This period may be extended by the EPA if further inputs from specific stakeholders is deemed vital to the Project and additional time is necessary. These meetings are expected to be interactive where the developer presents information and receives feedback. The objective of Scoping Meetings is to provide stakeholders with the opportunity to determine some of the major issues and impacts to be addressed in the ESIA as well as indicate their interest in participating in the SEP.

The Terms and Scope (T&S) of the ESIA Report is to be prepared by the EPA and informed by stakeholder contributions at the scoping meetings.

The SEP is finalised by the developer after the Scoping Meetings and submitted to the EPA for approval. The approved Plan will be included in the T&S prepared by the EPA. Implementation of the SEP will form part of the ESIA Report and include all records including, minutes of meetings, attendance sheets, main matters discussed, outcomes and follow up actions which took place during the conduct of the ESIA. The Report will be accompanied by an Environmental Impact Statement (EIS). Detailed requirements for the Report and Statement are presented in Chapter 8. The permitting process for when an ESIA is required is illustrated in *Figure 2: Stages in ESIA Process*.

Figure 2: Stages in Obtaining Environmental Permit – ESIA required



3.6.4 ESIA Review

Once the ESIA Report and EIS are completed and submitted by the Developer's consultant, the EPA will give notice in two daily newspapers that the documents are received and available for public review (at the Developer's cost). Notice will also be posted on EPA's website and in any other forum as determined by the EPA. The submitted documents should be made easily available to affected and concerned stakeholders as well as the general public.

Public Disclosure Meetings will be organised and conducted by the Developer and consultants during a 60-day review period, with guidance from the EPA. Key stakeholders are to be invited from the Project's immediate zone of influence. Other stakeholders will also be invited based on their level of interest in and exposure to Project impacts. Written comments may also be submitted by interested stakeholders during this period.

During the review period, the EPA, Environmental Assessment Board (EAB) and Sector Agencies will review the ESIA Report to ensure its consistency with the Terms and Scope of the Project, relevant plans, guidelines, regulations and codes of practice. Written comments will be provided to the consultant.

Following the receipt of comments, the ESIA report should be updated by the consultant to reflect outcomes of this consultation process addressing key issues raised, and all concerns and comments made by stakeholders, Sector Agencies, the EPA and the EAB prior to approval. The comments should be addressed in the form of an addendum listing each comment and how it was addressed.

The Environmental Assessment Board (EAB) will be invited to attend all Scoping and Public Disclosure Meetings. The cost of these meetings is covered by the Developer.

3.6.5 Approvals

The EPA shall submit the finalised ESIA and EIS documents to the Environmental Assessment Board for its consideration and recommendation as to whether the environmental impact assessment and the environmental impact statement are acceptable.

The Agency shall approve or reject the Project after taking into account:

- (a) all documents received
- (b) the recommendations of the Environmental Assessment Board and,
- (c) the views expressed during the consultations

The EPA Agency shall publish its decision and the grounds on which it is made. A decision by the Agency to issue an environmental Permit for a Project shall be subject to mitigation and monitoring conditions which are reasonably necessary to protect human health and the environment. The Permit will capture the need for ongoing stakeholder consultation during Project implementation and should be reported upon in the annual reports provided to the EPA by the Developer.

The EPA shall not issue an environmental permit unless it is satisfied that:

1. The developer can comply with the terms and conditions of the environmental permit
2. The developer can pay compensation for any loss or damage which may arise from the Project or breach of any term or condition of the environmental permit
3. The EPA reserves the right to independently verify any data included in ESIA/EIS in the case where there appear to be significant discrepancies or where there is cause to question the reliability of the data provided

Each Permit shall contain the following implied conditions:

- (a) the Agency shall have the right to cancel or suspend the environmental permit if any of the terms or conditions of the environmental permit are breached
- (b) the developer shall have an obligation to use the most appropriate technology
- (c) the developer shall have an obligation to comply with any directions by the Agency where compliance with such directions are necessary for the implementation of any obligations of Guyana under any treaty or international law relating to environmental protection, and
- (d) the developer shall have an obligation to restore and rehabilitate the

environment. Alternately, the EPA may refuse to grant approval for an ESIA if:

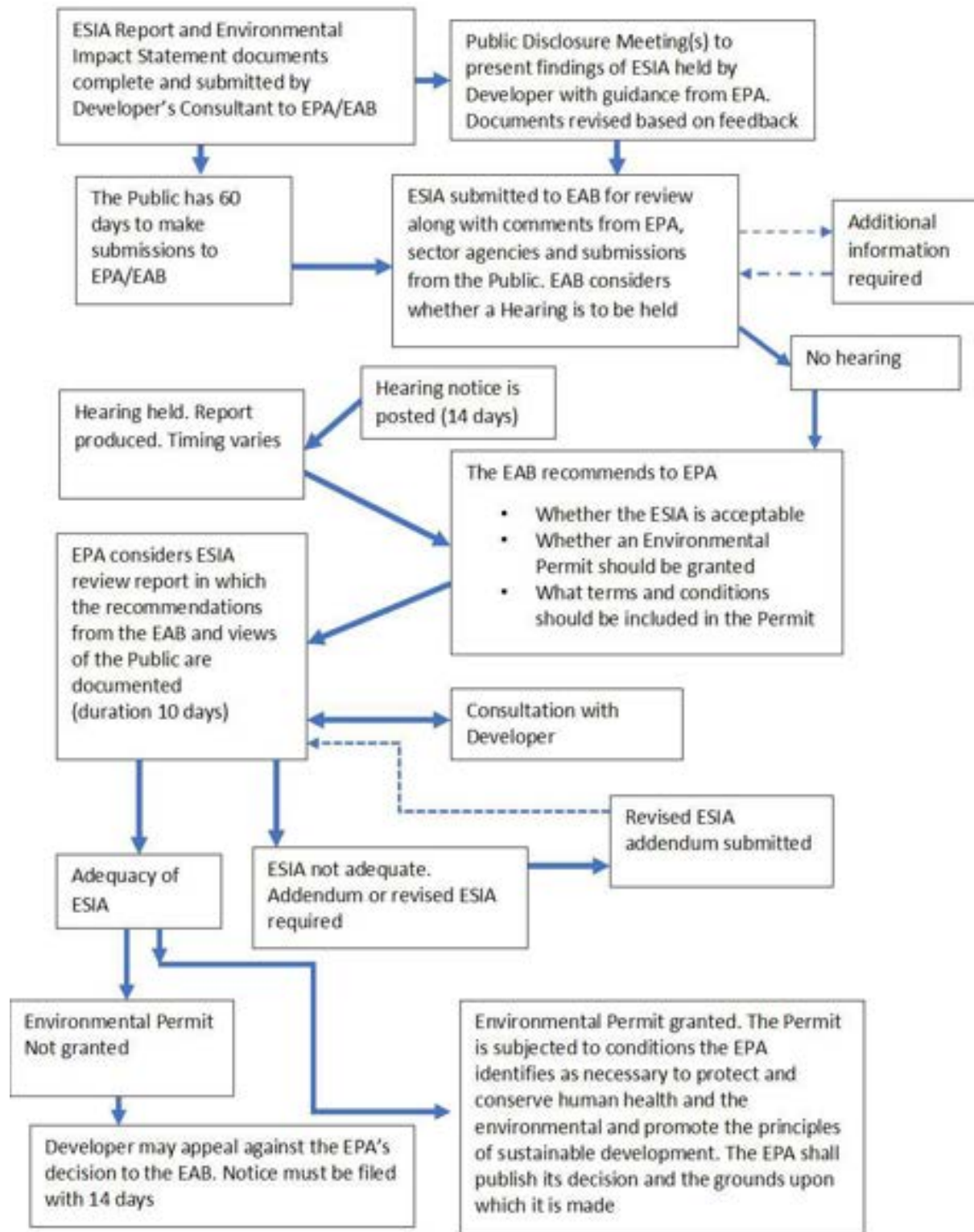
- The ESIA/EIS intentionally contains false or misleading information,
- The developer goes bankrupt
- The EPA determines that Authorisation would not be in the best interest of Guyana, having regard for the protection of human health or the preservation of the character of the environment, including animals and plants.

The Developer may appeal the decision by the EPA. It must do so in writing, within 14 days.

The ESIA approvals process is shown below in *Figure 3: Review of ESIA: Final Stages in Obtaining Environmental Permit*.

The environmental impact assessment and the environmental impact statement shall be public documents and the developer and the Agency shall make such documents available for the duration of the Project and five years thereafter for inspection (subject to the deletion therefrom of such information as may disclose intellectual property rights) during normal working hours at their respective offices and shall supply on request and on payment of cost of photocopying copies of such documents.

Figure 3: Review of ESIA: Final Stages in Obtaining Environmental Permit



*Depending on the significance of the information requested, the ESIA may need to be resubmitted either as a revised document or as an addendum. The review timeline for a resubmitted ESIA is to be determined by the EPA and depends on the extent of required revisions.

4.0 The Role of Sector Agencies

Agencies responsible for Forestry, Mining and Electricity Production/Transmission Sectors have their own legislation, licencing processes and codes of practice. These and other sector specific agencies are recognised as key stakeholders and are invited by EPA to attend scoping meetings. Full Applications for Environmental Authorisations often contain confidential commercial information and therefore remain within the sole purview EPA however, Project summaries, scoping details and other technical information are often shared with Sector Agencies for their comment and input.

The SEP will likely include further engagement with relevant Agencies during the conduct of the ESIA. Once the ESIA Report is submitted the EPA will invite these Agencies to make formal comments in the 60-day Public Disclosure period.

5.0 The Role of the Environmental Assessment Board (EAB)

The Environmental Assessment Board (EAB) is an autonomous body which provides an independent review for the development and finalisation of the ESIA and makes recommendations which uphold the principles of the Act in the context of the interests of the developer, the public and the regulatory agencies (illustrated in Figure 3: Stages in Obtaining ESIA Permit).

5.1 The functions of the Environmental Assessment Board

1. To conduct hearings into all appeals submitted to the EAB against a decision of the EPA to exempt a Project from the requirement for an ESIA
2. To conduct hearings into the conduct of ESIAs as may be necessary
3. To recommend to the EPA whether an ESIA should be accepted, amended or rejected
4. To recommend to the EPA whether an environmental permit should be issued
5. To recommend to the EPA what terms and conditions, if any, should be included in the environmental permit
6. To ensure a participatory and consultative approach to ESIA by being present to hear the contributions of the public and regulatory agencies in the scoping exercises which are facilitated by the EPA to develop the scope of work and Terms of Reference for the ESIA.

EAB's Review of ESIAs: All hearings by the EAB are open to the public. The EAB is required to meet within seven (7) days following the sixty (60) days ESIA review period to deliberate on the ESIA and render a decision.

Such decisions are to be categorised as:

1. Acceptance of the ESIA submitted
2. Acceptance of the ESIA with minor changes²
3. Non-acceptance as submitted with substantially revised resubmission

The EAB shall meet and render a decision within thirty (30) days of a resubmitted ESIA.

5.2 EAB Rules of Procedure

Under paragraph 6 (1) of the Third Schedule of the Environmental Protection Act 1996, the EAB may determine its own procedural rules. Those procedural rules are subject to the approval of the Minister.

Hearings before the EAB are intended to be inquisitorial where the various parties are able to present scientific and technical evidence and information, to alert the EAB to risks and trends which may not yet be scientifically certain and to enable the EAB to make the best decision it can, on the available information. It is not intended that parties are represented by lawyers, since the information to be presented is technical rather than legal, but their right to be represented by lawyers, is nevertheless preserved by the Act.

As a public body with a statutory duty to conduct hearings, the EAB is bound to observe the principles of natural justice, as developed by the English common law (and applied in Guyana, until Independence in 1966) and by the courts of Guyana since Independence.

There are two key elements of natural justice:

- (i) the right to a fair hearing; and
- (ii) freedom from any bias in the adjudicator.

In recent developments the common law has added a general requirement for fairness. This means that, not only must the EAB follow the procedure prescribed by statute; the EAB must also ensure that it acts fairly to all persons involved in the hearing. Otherwise there may be procedural grounds for challenging the decision of the EAB.

Under Section 28 of the Act, any person who is not satisfied with a decision of the EAB may appeal against that decision to the Environmental Appeals Tribunal (EAT). It is important that the decision itself is set out so that the EAT is able to deal efficiently with the appeal and unnecessary duplication of the work can be avoided.

These rules are therefore formulated to ensure that:

- (1) the procedure of the EAB complies with:
 - the requirements of the Environmental Protection Act.
 - the common law requirements of natural justice.
 - the common law requirements for fairness.
- (2) if a decision of the EAB is challenged on substantive grounds, the EAT is able to hear the appeal without having to duplicate work by the EAB. The Act does not draw a distinction between

² As per Annex 1: Project Evaluation Summary Table (Evaluation Outcome (ii))

the ESIA as a process and the EIS as the documentation of the information and impacts obtained in the process. It refers to the submission of both an ESIA and an EIS.

A key component of the procedural rules is the mechanism for ensuring that the correct procedure has been followed under the Act and that the ESIA has covered all the matters required by law. The use of tables and checklists makes this a comprehensive and transparent exercise and assists in ensuring an objective review process.

5.3 EAB Procedures for Review

1. Compliance requirements.

The EPA shall submit to the EAB at least 5 copies of the ESIA, which will include:

- (i) Environmental Impact Statement (EIS)
- (ii) Environmental Assessment (ESIA)

The developer shall submit to the EAB, through the EPA, five copies of:

1. The Terms and Scope of the ESIA as set by the EPA and a confirmatory copy of the qualifications of the consultant(s) carrying out the ESIA / EIS
2. The decision of the EPA approving the appointment of the consultant(s) under Section 11(4) of the Act
3. The Project summary submitted to the EPA under Section 11(1) of the Act (at the beginning of the process)
4. Extracts from the newspaper of the notices published under Section 11(6) and Section 11(10) of the Act.

The EAB shall not begin the review of an EIA/EIS unless it is reasonably satisfied that the developer and the EPA have complied with the procedural requirements of the Act.

2. Conflict of interest

Any member of the EAB who has an interest directly or indirectly in any ESIA will inform the EAB of that interest at the first meeting or if he does not attend the meeting at the first opportunity thereafter. A person who has an interest in the ESIA will not take part in the review of the ESIA and a replacement may be appointed for that review. Members of the EAB taking part in the review of the ESIA may not be in the developer's employ for a minimum of two (2) years after the review of the ESIA by the EAB is concluded.

Indirect or direct interest includes:

- taking part in the preparation of the ESIA
- being directly related to the developer
- owning any shares in the developer other than shares held in a public company by way of investment and which do not amount to a significant holding
- having professional interest in the development of the Project, other than in the area of environmental management

3. Undue Influence

Any member of the EAB who receives any communication from any developer, any representative of the developer, any government agency or any other person whatsoever with a view to influencing that member of the EAB, shall immediately notify the other members of the EAB who shall decide what action to take.

4. Impartiality

When an ESIA is before the EAB for review, members of the EAB will not discuss the ESIA with anyone, other than in the meetings and public hearings called for that purpose under these rules.

5.4 Review of the EIA / EIS

1. When the EAB receives the ESIA the Chairman will call a meeting at which the EAB will review the documents and decide on the procedure to be used
2. The EAB may obtain secretarial and administrative support from the EPA, but any person providing such support must not take any part in the review process nor offer any opinion or advice on the ESIA being reviewed to any person
3. The EAB will assess the ESIA using the Review Checklist found in Appendix 1.
4. The EAB will hold meetings for the review of the ESIA as the need arises and will notify members of the public by notice in two (2) national newspaper, with two (2) weeks' notice. Notice will be posted on EPA website and communicated directly to stakeholders. These meetings are open for the public to attend
5. The EAB will hold statutory meetings once monthly.

5.5 Public Hearings

The EAB may conduct public hearings to support a recommendation to the EPA whether the ESIA should be accepted, amended or rejected.

1. The EAB will give members of the public not less than 14 days' notice of the hearing. The notice will state the time, date and place of the hearing, and in general terms, the subject matter of the hearing so as to enable members of the public to obtain a fair assessment of the issues to be covered
2. Each hearing will be chaired by the Chairman of the EAB, and in his absence by the Vice-Chairman
3. At the hearing, members of the public may make submissions or comments in accordance with the terms of reference for the hearing, or where no terms of reference have been specified, on any matter raised in the ESIA or any other issue which may be relevant or of concern as a result of the Project
4. To facilitate participation by the public, the EAB may accept evidence or information from any person irrespective of whether that evidence or information would be admissible in a court of law
5. The EAB will try to ensure that each person has a reasonable opportunity to be heard and that the hearing is not dominated by any person or group. The EAB will also try to ensure

that a good cross-section of those attending is able to ask questions and make comments (see Chapter 7 for hearing protocols)

After the public hearing the EAB will prepare a publicly available report on the issues raised.

5.6 Procedures for Appeals

1. Appeals under Section 11(3)(a).

- 1.1 Any person who may be affected by a decision of the EPA to exempt a Project from the requirement for an EIA may lodge an appeal with the EAB within thirty (30) days of the date of publication of the EPA's decision
- 1.2 The appeal must be in writing and must set out the reasons why the person appealing believes that an ESIA is necessary. A copy of the appeal must be sent to the EPA and the developer
- 1.3 The EAB shall fix a date for hearing the appeal and shall give not less than 14 days' notice in writing to the developer, the appellant and the EPA of the date fixed for the hearing
- 1.4 The EAB is required to meet at the end of the fourteen (14) days period of notification for a public hearing
- 1.5 The EAB shall also publish a notice in at least one daily national Newspaper giving members of the public not less than fourteen (14) days' notice of the date of the appeal
- 1.6 The EAB shall meet no later than seven (7) days after the end of the thirty (30) days period to determine if hearing(s) into the appeal(s) is required
- 1.7 The EAB shall render a decision within seven (7) days of a public hearing.

2. Hearings

- 2.1 At the hearing of the appeal, the person appealing may make oral representations or a written submission to the EAB stating:
 - (i) the reasons why the decision of the EPA is wrong
 - (ii) the risk of damage to the person appealing or to his property or that of any other person
 - (iii) the risk of damage to the environment
 - (iv) that the Project may significantly affect the environment.
- 2.2 The EPA shall have a right to reply and to explain the grounds on which its decision is based, but no new evidence or facts shall be relied on to justify the decision of the EPA.
- 2.3 The EAB may ask the developer for clarification of the Project.

3. Matters to be raised

- 3.1 The person appealing against the decision of the EPA shall not be required to show that the Project will significantly affect the environment, but only that upon the evidence submitted to the EPA, the Project may significantly affect the environment.
- 3.2 Members of the public may be permitted to make submissions to the EAB showing why they may be affected adversely by the Project or why there may be significant effects on the environment.

4. Decision.

- 4.1 The EAB shall within fourteen (14) days of the close of the hearings publish its decision either confirming the decision of the EPA or setting aside the decision of the EPA
- 4.2 The EAB shall set out the reasons for its decision
- 4.3 The decision of the EAB shall be a public document and shall be available to members of the public
- 4.4 The EAB will charge a fee for copies of its decision but the fee will not be more than the reasonable cost of photocopying.

6.0 The Role of the Environmental Appeals Tribunal (EAT)

The EAT is a superior court of record and will have in addition to the jurisdiction and powers conferred by the Act, all the powers inherent in such a court. The Tribunal will have the power to enforce its own orders and judgements and the same power to punish violations as the High Court of Justice.

The Tribunal shall be a superior court of record and have an official seal which shall be judicially noticed, and shall have in addition to the jurisdiction and powers conferred on it by the Act, all the powers inherent in such a court. The Tribunal shall have the power to enforce its own orders and judgement, and the same power to punish contempt as the High Court of Justice.

The Tribunal shall have jurisdiction to hear and determine appeals:

- a) from the refusal of the grant of a construction or operation permit or a prescribed process licence
- b) against the conditions attached to any construction or operation permit or prescribed process licence
- c) against the revocation or variation of a construction or operation permit or prescribed process licence
- d) against an enforcement notice or a prohibition notice
- e) against the refusal of an environmental permit
- f) against the requirement of an environment permit
- g) against the refusal of an environmental authorisation or the cancellation or suspension thereof

- h) in respect of such other matters as may be prescribed by the Minister or arise under the Act or any other written law where jurisdiction in the Tribunal is specifically provided.

7.0 Approach to Stakeholder Consultations³

Consultations with stakeholders include:

- a) Scoping Meetings prior to finalising the SEP and T&S of ESIA
- b) Consultations during the conduct of the ESIA as described in the SEP
- c) Public Disclosure Meetings after the ESIA and EIS are submitted to the EPA

The Stakeholder Engagement Plan should contain the following:

- Publication of public notices (format, venues, how many, notice time given)
- Identification of priority issues to be discussed during Scoping Meetings
- Summary of the initial interests, priorities and concerns expressed by stakeholders during Scoping Meetings or through submission of written comments
- Identification of stakeholder groups that need to be consulted, when and how they will be reached out to and their potential involvement in the ESIA
- Dissemination of Project information to the stakeholders (in the most appropriate format for the public audience's efficient understanding of information)
- Key steps and mechanisms of consultation during the ESIA with focus groups, communities and other representative individuals
- Summary of the consultation outcomes/concerns and how they were integrated into preparing the ESIA
- Design and implementation of decisions considering stakeholder perspectives
- Grievance Redress mechanism perspectives
- Summary of the follow-up and future engagement
- Documentation and approach to Public Disclosure Meetings

All Consultations must adhere to the following:

1. Be conducted in good faith through appropriate procedures, through the representative bodies of the various groups. Good faith refers to an open and genuine dialogue between all parties and measured by the content of the minutes/notes taken
2. All groups should have the opportunity to participate freely at all levels of decision making, implementation and evaluation. Indigenous groups living within the affected area or who access resources within that area must be consulted
3. Information must be accurate, timely and appropriate (and simplified where necessary, using appropriate language and graphics to aid comprehension by relevant stakeholder audiences)
4. Issues and topics to be submitted under the consultation process must be comprehensive

³ Public Consultation and Participation. Source: <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Public-participation.pdf>

5. Provide equal opportunity in participation to all participants
6. Be transparent about information including but not limited to: activities, materials, potential impacts, information gaps, benefits, longevity of the Project
7. Allow autonomy and representation through appropriate Indigenous organisations
8. Be accessible in terms of location and venue
9. Be culturally appropriate, following norms and customs of indigenous and other groups
10. Allow accountability for individuals responsible for bad faith
11. Provide freedom for all parties to speak and share opinions

All expenses associated with the conduct of the ESIA including stakeholder engagements, printing, photocopying, advertising and dissemination of documents are borne by the developer.

8.0 Components of an ESIA

These Guidelines aim to help Developers and Consultants alike prepare good quality ESIA Reports and to guide the EPA and other interested parties as they review the ESIA.⁴

The ESIA Report serves as a tool to:

- (i) communicate the results of the assessment of significant impacts of a proposed activity (Project) on the environment/society and
- (ii) enable the EPA to reach a reasoned decision regarding these impacts and whether and under what conditions the Project should be Authorised.

The ESIA is an iterative process (a feedback loop between stakeholders, ESIA consultants and the Project's planning/ design team) to inform and optimize the Project design from an environmental and social perspective. It is therefore important that the ESIA consultants are an integral part of the overall Project team, feeding back valuable information to influence siting/routing/design/technical options and alternatives. Feedback is particularly important after the results of scoping are known and after stakeholder comments are received on the completed ESIA.

8.1 Essential Elements of the ESIA

1. Project Description
2. Scoping
3. Legal, Policy and Planning Frameworks
4. Baseline Conditions
5. Environmental Components Affected
6. Use of Resources
7. Assessing Impacts (determining 'significance' & including cumulative)
8. Mitigation & Compensation
9. Monitoring
10. Environmental Management Plan
11. Environmental Impact Statement

Describing the Project and scoping of impacts take place and feed into the preparation of the Terms and Scope for the ESIA.

8.2 Project Description

The ESIA Report typically begins with an introduction describing the purpose of, and need for, the proposed Project and intended location. This provides the framework for identifying Project alternatives. Whereas the Project developer will articulate the purpose and need, feedback should ideally be obtained from stakeholders, including businesses, citizens, and non-governmental organisations. This enables the Project proponent to understand and consider the priorities and concerns of the local community and government agencies early in the planning process.

⁴ Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)

The Project Description should include the following:

- (a) location of the Project – footprint (area of immediate disruption), area of influence (AOI - defined for Project features to provide context for assessment of effects), transport routes (raw materials and delivery lines), inclusive of closest human habitation, valuable natural assets, archaeological/historic feature, using GPS coordinates and scaled maps
- (b) the physical characteristics of the whole Project, including where relevant any demolition works, land use requirements during the construction and operational phases
- (c) the main characteristics of the operational phase of the Project (in particular any production processes), energy demand and energy use, nature and quantity of the material and natural resources to be used (including water, land, soil and biodiversity)
- (d) an estimate of the type and quantity of expected releases and emissions (such as water, air, soil and subsoil, pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operations phases
- (e) relevant legal and policy frameworks, national strategies for sustainable development, relevant sectoral Action Plans and international treaties and protocols
- (f) reference to specific industry and international standards ('state of technology' principle) the Project intends to comply with to ensure best practice and sustainability.

8.3 Scoping

Scoping is an activity designed to identify the key stakeholder concerns associated with a Project. These issues are included in the Stakeholder Engagement Plan which forms part of the Terms and Scope (T&C) of the ESIA. Scoping is to be carried out at a stage when alternatives are still being considered and mitigation measures can be incorporated into the (T&C) of the ESIA. In addition, scoping provides an opportunity to highlight the benefits of Projects, while opportunities for environmental enhancement measures may also be identified.

Thus, the initial scoping should be carried out as part of the site-selection process for a particular

Project and include:

- Project Description, including any timescales (e.g. for construction), ancillary features (such as pipelines or highway improvements), plans/maps/photos to aid description of the site and the proposed development
- Feasible alternatives and others that have been discounted
- Strategic background, for example, development plans and other related Projects
- List of stakeholders, their views and how they might be involved in the ESIA process (these are captured in SEP)
- Methodologies to be adopted for the assessment of issues raised
- The extent of the Project's study area, the area of influence (AOI), data availability
- The time horizon for which impact predictions are made
- Key environmental constraints and opportunities
- Valued Ecosystem Components (VECs)
- Likely key impacts, both positive and negative
- Gaps in information
- Proposed further surveys
- Preliminary mitigation and enhancement measures
- Proposed ESIA implementation programme, including timescales and milestones (e.g. implementation of SEP and production of the EIS).

An essential part of scoping is consultation between the Project developer, consultants, relevant experts, public interest groups, directly affected communities, Sector Agencies, the EPA and the EAB, and any other stakeholders, to identify concerns and potential opportunities for partnership approaches and for enhancement.

At the outset it will therefore be necessary to identify those stakeholders who have an interest in the Project under consideration and who will therefore be consulted in addition to the statutory consultees.⁵

All stakeholders are important to the identification of VECs. These are components of an ecosystem having ecological, cultural, economic, historical, scientific, or archaeological importance. Where indigenous peoples may be affected by a projects their value system should be included in defining VECs.

8.3.1 Identification of Alternatives:

Developers should provide the main reasons for selecting the option chosen. Alternatives are different ways of carrying out the Project to meet the agreed objective. Alternatives can take diverse forms and may range from minor adjustments to complete realignment of the Project. Ultimately, alternatives must be able to accomplish the objectives of the Project in a satisfactory manner, and should also be feasible in terms of technical, economic, political and other relevant criteria.

Alternatives to the Project must be described and compared, with an indication of the main reasons for the selection of the option chosen being provided. Types of alternatives to be considered can include Project design, technology used, location, layout and scale.

Methods for assessing Alternatives

The method for assessing alternatives will depend on the type of alternatives and a comparison of their corresponding environmental effects. This section covers the selection, description, and assessment of the reasonable alternatives to the Project as proposed.

Identifying and considering alternatives can provide a concrete opportunity to adjust the Project's design to minimise environmental impacts and, thus, to minimise the Project's significant effects on the environment. Additionally, the proper identification and consideration of alternatives from the outset can reduce unnecessary delays in (i) the ESIA process, (ii) adoption of the ESIA decision and (iii) in the implementation of the Project.

During Scoping the Developer's consultants should:

Provide a description of the reasonable alternatives studied and an indication of the main reasons for selecting the chosen option with regards to their environmental impacts. 'Reasonable Alternatives' must be relevant to the proposed Project and its specific characteristics. Resources should only be spent assessing these Alternatives. In addition, the selection of Alternatives is limited in terms of feasibility. On the one hand, an Alternative should not be ruled out simply because it would cause inconvenience or cost to the Developer. At the same time, if an Alternative is awfully expensive or technically or legally difficult, it would be unreasonable to consider it to be a feasible Alternative

Developers should be flexible during the assessment of Alternatives. During the assessment, a preferred Alternative may be considered 'unreasonable'; while another may inspire other Alternatives. The level of detail concerning the description of the environmental effects of the Alternatives may be less than for the chosen option. Nevertheless, the aim of the exercise is to provide a transparent and well justified comparison

Where considered necessary by the EPA, scoping should be supported by socio-economic impact analysis of project alternatives and as applicable, by conducting economic cost - benefit assessments of the project's environmental impacts. Major infrastructure type investment (e.g. ports, roads, irrigation systems, dams) will normally have major long - term impacts on the environment and significant conversion of natural habitat. These projects will require an ESIA and may benefit from a CBA. Where CBAs are considered necessary Inter-American Bank Implementation Guidelines can be referred to⁶.

Additionally, where projects propose extraction and allocation of large quantities of finite resources (oil/gas) a cost-benefit analysis is useful when assessing and comparing options for resource allocations. While this appears to be a more *strategic* type of assessment, commitments to use large quantities of non-renewables for specific purposes and long periods of time, should be made strategically, with the cost-benefits of reasonable alternatives in mind.

Local knowledge and interests are important during the assessment of Alternatives and, therefore, dialogues with any concerned Public on Alternatives are encouraged where appropriate (e.g. when deciding on an electricity line's route planning). In addition, after the ESIA Report has been drafted, the public should be made aware that Alternatives have been considered, providing clear reasons why the final choice was made (at consultations).

⁵ Environmental Impact Assessment (EIA) A handbook for scoping projects, UK, Environment Agency, 2002

Ensuring early participation with the public concerned about Alternatives is a good practice that could not only save resources, but also reduce delays as a result of challenges arising from the public or other organisations/authorities.

Assessing the 'do-nothing' scenario

The 'do-nothing' scenario or 'no Project' Alternative describes what would happen should the Project not be implemented at all. In some cases, however, the 'do-nothing' scenario cannot be considered a feasible policy option, as the Project may well be very clearly needed. The 'do-nothing' scenario is heavily based on a thorough understanding of baseline conditions.

Alternatives are to be identified and assessed by the developer and discussed with the EPA and at the first Public consultation. It is especially important that the identification and consideration of Alternatives should not be treated as a mere formality.

⁶ Economic Cost - Benefit Analysis (CBA) of Project Environmental Impacts and Mitigation Measures: Implementation Guideline, IADB, 2012 [[https://publications.iadb.org/publications/english/document/Economic-Cost-Benefit-Analysis-\(CBA\)-of-Project-Environmental-Impacts-and-Mitigation-Measures-Implementation-Guideline.pdf](https://publications.iadb.org/publications/english/document/Economic-Cost-Benefit-Analysis-(CBA)-of-Project-Environmental-Impacts-and-Mitigation-Measures-Implementation-Guideline.pdf)]

8.4 Legal, Policy & Planning Frameworks

This section should demonstrate that a proposed Project requiring an ESIA recognises and is following all applicable legislation, policies and guidelines in Guyana.

At the national level a description of Guyana's national legal framework, focusing on laws that apply to environmental issues in a general context such as the Constitution of Guyana, as well as specific national laws and regulations that focus on environmental issues such as the Act (Cap. 20:05), the Environmental Protection (Authorisation) Regulations of 2000 as well as resource specific laws to be complied with for example:

- Environment Protection Act, Cap. 20:05
- Mining Act, Cap. 65:01
- Guyana Forestry Commission Act, Cap. 67:02
- Forests Act, Cap. 67:01
- Protected Areas Act, Act No. 14 of 2011
- Guyana Wildlife Conservation and Management Act of 2016
- State Lands Act, Cap. 62:01

Relevant National Policy Frameworks, Development Strategies, Environmental Action Plans, Climate Change Adaptation and Mitigation Policies/Plans should be referenced.

Guyana is also signatory to a number of International Conventions, Protocols and multi-lateral Agreements relating to labour, public health, safety, pollution prevention, climate change, ecological and environmental quality, amongst others. Where relevant these should be referenced and complied with.

8.5 Baseline Conditions

The environmental and social setting for the proposed Project is normally described as an area of influence (AOI) within which the baseline information on biophysical and socioeconomic parameters will be gathered and the Project's impacts assessed (the baseline).

The AOI distinguishes between the area directly affected, where most of the impacts will occur (for instance the actual footprint of a facility), the Project's area of direct influence (e.g., the mixing zone of effluents discharged into a receiving water body) and the area of indirect influence (e.g., an impacted watershed, forest plantations that supply a timber or pulp mill). The AOI may be different for different potential impacts. The AOI is the area likely to be affected by:

- (i) the Project and related activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the Project
- (ii) impacts from unplanned but predictable developments caused by the Project that may occur later or at a different location and,
- (iii) indirect Project impacts on biodiversity or communities, or on ecosystem services upon which affected communities' livelihoods are dependent

The AOI should consider associated facilities, which may not be directly part of the Project but would not have been constructed or expanded if the Project did not exist and without which the Project would not be viable.

Additionally, the AOI should consider those areas affected by cumulative impacts that result from the incremental Project impact, on areas or resources used or directly impacted by the Project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.

The Baseline is a description of the current status of the environment in and around the AOI. It is intended to provide information on potential Project - environment interactions. The description should be tailored to the scope and scale of the undertaking relevant to the identified areas within the AOI and focused on potential pathways for impacts. The Baseline Study forms the foundation upon which the ESIA will rest.

Developing a robust Baseline scenario for the ESIA serves three key purposes, it:

- provides a description of the status and trends of the Valued Ecosystem Components (VECs) against which significant effects can be compared and evaluated
- forms the basis on which ex-post monitoring can be used to measure change once the Project has been initiated and
- establishes an outline of what is likely to happen to the environment should the Project not be implemented – the so-called ‘do-nothing’ scenario.

The state of the environment and the nature of impacts such as pollution rates or emission limits change over time. These should be accounted for in the Baseline assessment.

The Baseline should also consider Projects in the vicinity that exist and/or that have been approved. The Baseline should, therefore, be dynamic, going beyond a static assessment of the current situation. This is especially important for issues where there is considerable uncertainty, such as climate change, or for longer-term developments, such as large infrastructure Projects. Predicting uncertain elements can be challenging, particularly concerning the availability of information, as well as ensuring that the assessment is carried out with reasonable effort.

The development of the Baseline can often comprise the bulk of the ESIA process and can occupy a significant proportion of the final ESIA Report. However, care must be taken to ensure that data collection efforts are focused on those aspects of the environment and society most likely to be significantly impacted, and that relevant data and scientific knowledge are reasonably available.

Relevant baseline data (as applicable):

Physical: Landscape, material assets (infrastructure) topography, geology, bathymetry/ geotechnical character of seabed, oceanography, seismology, sediments, soil types and quality, surface, ground and coastal water quality, coastal zone sensitivity, pollution levels, meteorological conditions, climate trends, etc. (and the interaction between the above should be considered).

The focus should be on those physical environmental features that are important to design and operations of the proposed Project, especially those that may function as transport mechanisms for pollution.

Biological: ecosystems (both terrestrial and aquatic), ecological balance, flora and fauna, habitats, protected areas, mangroves, agricultural land, VECs, etc.

Socio-economic: demography – income, employment, skills, education, health, community history and well-being, local business and industry content, infrastructure public amenities/facilities, economic activities/livelihoods (e.g. fisheries, farming), recreational users of the area, zoning (industrial, residential, protected areas, development plans, cultural/historic resources, indigenous lands and peoples, their practices and areas of resource use).

Key events that have shaped economic and social development should be noted, along with key industries that are presently active (or in the past if relevant). Pressures or vulnerabilities experienced by these industry sectors or livelihoods should be noted.

Cultural: location and state of archaeological, historical, religious sites, etc.

The consultant should identify knowledge gaps and discuss their implications for the impact assessment and predictions of adverse effects. Where necessary, consultants may need to initiate baseline data collection where such gaps are likely to impair the ability to make reliable predictions. In some cases, the gap in knowledge might require long term (seasonal) information collection.

In the collection of environmental data, it is imperative to include a Quality Assurance/Quality Control programme, submit detailed protocols for all field testing and measurement procedures generally accepted in the discipline.

Consultations should be initiated to identify data collection protocols and to ensure compatibility with other on-going or planned data collection efforts. It is imperative to identify and access local knowledge and expertise in the endeavour of baseline data collection. Data collection ideally should cover two wet and two consecutive dry seasons to provide a basis for determining trends.

Information should be provided in the form of maps, graphs, pictures, tables and descriptive analytical text.

8.6 Environmental Components Affected

The ESIA shall identify, describe and assess the direct and indirect significant effects of the proposed Project on the VECs identified in the Baseline including: (a) population and human health, (b) biodiversity with particular attention to species and habitats (c) land, soil, water, air and climate (d) material assets, cultural heritage and the landscape, (e) indigenous peoples and their access to traditional resources, and (f) the interaction between components (a) through (e)

Specific emphasis should be placed on human health and well-being, degradation of ecosystems, resource availability, and the risk of accidents and disasters.

Human Health

These would concern the commissioning, operation, and decommissioning of a Project in relation to the health and well-being of workers on the proposed Project and surrounding population. Human health is a very broad factor that is highly Project specific.

Human health should be considered in terms of the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused

by changes in disease vectors caused by the Project, changes in living conditions, loss of environmental quality, effects on vulnerable groups, exposure to traffic noise, water and air pollutants.

Social Issues

The social consequences of the Project need to be understood and assessed in terms of Baseline information collected. Key existing issues, pressures and vulnerabilities should be properly documented in order for the assessment to be valid. Methods used to gather information on the views and understanding of the Project are important to document.

Degradation of Ecosystems

Attention should be paid to potential impacts on all species of flora and fauna and their habitats listed in the Baseline, especially protected, endangered species and habitats.

A key issue needing to be addressed by consultants in relation to biodiversity concerns is degradation of ecosystem services. These services are understood as the ecosystem's capacity for (i) provisioning, (ii) regulating, (iii) supporting, and (iv) providing cultural benefits. This means, for instance, that if pollution to a water stream is taking place, then this could result in degradation of the stream's capacity to (i) provide clean water, ensuring thereby that fish and aquatic plants are (ii) healthy and (iii) thriving, leading to (iv) the depreciation of the site's value for local fishermen, the loss and degradation of habitats, the loss of species diversity, and the loss of genetic diversity.

Risks of major accidents and disasters

Two key considerations emerge:

- (i) the Project's potential to cause accidents and/or disasters affecting human health, cultural heritage, and the environment and
- (ii) the vulnerability of the Project to potential disaster/accident both natural (e.g. sea level rise, earthquakes) and man-made disasters (e.g. technological hazards) that could significantly impede the Project's activities and objectives, and which might have adverse effects.

The ESIA should include disaster/accident risk assessment and address:

- What can go wrong with a Project?
- What adverse consequences might occur to human health and to the environment?
- What is the range of magnitude of adverse consequences?
- How likely are these consequences?
- What is the Project's state of preparedness in case of an accident/disaster?
- The need for Emergency Response Planning
- The need for resilience to be built into project design

An integrated assessment of vulnerability to disaster risks and hazards aims to assess whether the Project is indeed vulnerable to such events and, if so, to provide recommendations to avoid/minimise those risks. Where relevant, a multi-risk approach should be followed to cover the climate-related hazards.

Prevention tools, monitoring and early warning should be discussed. After the major natural and man-made risks have been identified and assessed, measures to control and manage their significant impacts should then be taken, e.g. to ensure compliance with existing minimum

prevention standards, safety requirements, building codes, improved land use planning, etc. These could be integrated into a coherent Risk Management and Emergency Response Plans.

8.6.1 Climate Change

Climate change refers to shifts that can be attributed directly or indirectly to human activity that alter the composition of the global atmosphere, and which are in addition to natural climate variability observed over comparable time periods⁷.

Identify climate change and biodiversity issues early on in the ESIA

Identifying climate change and biodiversity challenges during the screening and scoping phases of an ESIA will help to better inform the assessment moving forward. Where information is available, historical data to help identify trends to compare to the most current baseline data collected will provide a better idea of the rate of biodiversity loss as well as any extreme changes in climate that may otherwise be regarded as normal.

This data may be available from technical reports from earlier EIAs or from the Office of Climate Change. Where quantitative data is unavailable, interviews and field observations with knowledgeable locals can help to provide a general idea of such trends.

Use trends instead of data at one point in time

As the nature of climate change is just that, change, using static data that provides a baseline for a single point in time leaves way for too much uncertainty in the future. Using trends will help to reduce uncertainty and provide a more informed ESIA report. When indicators are chosen, thresholds or a maximum/minimum level should also be set to identify at what point a significant change in the ecosystem could occur.

Key indicators to follow as drivers of climate change

Indicator Measurement

- Greenhouse Gas Emissions (GHG) Quantity: CO₂, Nitrous oxides, CH₄, O₃- in the atmosphere
- Extreme weather events: Frequency and severity of the events
- Disaster risk Factors contributing to environment vulnerability: risk of soil erosion/landslides, susceptibility to drought/floods, forest health in the face of invasive species and forest fires
- Species at risk habitat: State of the habitat/health and population size of species
- Collection and assessment of baseline survey data as climate changes

As the climate changes, so too will the baseline survey carried out during the screening section of the ESIA. This means that baseline data must be continually updated—and potential impacts reassessed—based on the new information. This will require an evolution in how ESIAs are used.

Traditionally, ESIAs have been undertaken with the intention of obtaining an environmental permit and ensuring impact mitigation. This has meant that once the document has been finished, it is archived. While impact monitoring still occurs, it is meant to address issues if acceptable

⁷ Intergovernmental Panel on Climate Change, 2001

standards are surpassed indicating an impact could occur. When accounting for climate change and biodiversity, the ESIA becomes a living document that is revisited on a regular basis as new baseline data is collected and weighed against the Project.

Collection of data should be undertaken both for climate and biodiversity in the AOI. While it is not explicitly the responsibility of the Project to mitigate biodiversity loss if it is not directly affecting this trend, it is part of a larger responsibility to helping maintain the environmental and social integrity within the area of influence, and the plants and animals therein.

Climate change - mitigation

Climate change mitigation considers the impact the Project will have on climate change primarily through greenhouse gas emissions. Most Projects will have an impact on greenhouse gas emissions, compared to the Baseline through their construction and operation and through indirect activities that occur because of the Project.

The ESIA should include an assessment of the direct and indirect greenhouse gas emissions of the Project, where these impacts have been deemed significant:

- direct greenhouse gas emissions generated through the Project's construction and the operation of the Project over its lifetime (e.g. from on-site combustion of fossil fuels or energy use)
- greenhouse gas emissions generated or avoided as a result of other activities encouraged by the Project (indirect impacts) e.g. transportation infrastructure: increased or avoided carbon emissions associated with energy conservation/use for the operation of the Project.

The assessment should take relevant greenhouse gas reduction targets at the national, regional, and local levels into account, where available (Nationally Determined Contributions). The ESIA may also assess the extent to which the Project contributes to these targets through reductions, as well as identify opportunities to reduce emissions through alternative measures.

A Life Cycle Assessment (LCA) can be used to consider a Project's overall direct and indirect greenhouse gas emissions balance. LCA is a cradle-to-grave or cradle-to-cradle analysis technique to assess environmental impacts associated with all the stages of a product's life, which is from raw material extraction through materials processing, manufacture, distribution, and use.

Climate change – adaptation

This considers the vulnerability of the Project to future changes in the climate, and its capacity to adapt to the impacts of climate change, which may be uncertain.

This aspect of the issue of climate change can be particularly challenging as it requires those carrying out the assessment to consider the impacts of the environment (the climate in this case) on the Project, rather than vice-versa; and it often involves a considerable degree of uncertainty, given that the actual climate change impacts, especially at local levels, are challenging to predict. To this end, the ESIA analysis should take trends and risk assessment into consideration.

The integration of climate change adaptation considerations into ESIA's is challenging; it requires a shift in thinking about assessments and taking possible long-term risks and uncertainty into account.

Key climate impacts include heat waves, droughts, extreme rainfall, storms and winds, landslides, rising sea levels, and others. Risk management approaches should be discussed in ESIAs. Adaptive capacity can be built into Projects through alternative measures, such as changes in the use of materials or construction designs that will be more resilient to expected risks. ESIAs can facilitate adaptive capacity and management in Projects by clearly acknowledging their assumptions and uncertainty in climate impacts and by proposing practical monitoring arrangements to verify the validity of predictions and responses over time.

8.7 Use of Resources

The Developer should assess the use of natural resources and the impacts of the Project resulting from their use/depletion. In this context, the assessment should consider the sustainability of resources as far as possible, in particular land, soil, water, and biodiversity, as well as finite energy such as oil/gas and other extracted materials.

The requirement for the assessment of a Project's impacts on the availability of natural resources is additional to the requirement to assess the impact on the resources - and a slightly different emphasis needs to be taken into account by consultants.

This emphasis reflects a shift in focus from one of protecting natural resources - through assessing and mitigating impacts - to one of preserving the availability of natural resources for human activity. In this sense, assessments should also focus on the efficiency of resource use; can Projects do more with less in terms of energy use, water consumption, land and soil use?

The integration of the use of natural resources into ESIAs should inform not only on the quantities of resources extracted, but also their quality, abundance (e.g. renewable, non-renewable, exhaustible, non-exhaustible), availability and location.

Resource use also impacts the environment and human health through a sequence of changes in the state of the natural environment. Life Cycle Assessment (LCA) methodology provides a framework for describing environmental impacts. A LCA quantifies all of the physical exchanges with the environment, be they inputs (materials, water, land use, and energy) or outputs (waste and emissions to air, water, and soil).

Additionally, resource use should consider access and use of public infrastructure and amenities. This should include for example the availability and capacity of drinking water and electricity supplies, transportation means, waste management facilities and medical services etc. Project impacts on these public goods should be assessed to ensure that stakeholders don't suffer from shortages in availability or supply due to the Project.

8.8 Assessing Impacts (determining significance)

The previous section focused on the identification of the environmental components likely to be impacted upon by the Project. The ESIA report must identify, describe, and assess significant effects that is, identifying which effects are to be considered and which are determined to have only a negligible effect on the environment. It is essential to also consider cumulative impacts, given that effects considered to be insignificant in isolation may have a significant impact on the environment when they interact with other effects.

'Significant' effects must be considered when it comes to assessing the impacts on the environment. The concept of significance considers whether a Project's impact could be determined to be unacceptable in its environmental and social contexts.

The assessment of significance relies on informed, expert judgement about what is important, desirable, or acceptable with regards to changes triggered by the Project in question. This limits the assessment to those impacts that are likely to have a significant or important enough impact on the environment to merit the costs of assessment, review, and decision-making.

The information to be provided by the consultant shall include at least a description of the likely significant effects of the Project on the environment and a description of the features of the Project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.

The description of the likely significant effects on the Valued Components should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term, and long-term, permanent/residual and temporary, positive and negative effects of the Project. The significance of residual impacts are particularly important to define, as they remain after the proposed mitigation measures are taken.

The concept of significance is a core concept for the ESIA it is one that guides the ESIA process. The assessment of significance should be based on clear and unambiguous criteria: significance criteria take both the characteristics of an impact and the values associated with the environmental issues affected into account. Significance is always context specific. Tailored criteria should be developed for each Project and its settings.

Significant effects must be described in the ESIA Report in an appropriate manner so that it ultimately allows for decision-making. For this reason, significance determinations must be substantiated: it is important that the assessors set out a transparent methodology that explains how they approach the assessment and that they then demonstrably apply that methodology in their assessment. The methodology should explain how the assessor deems whether a significant effect will occur, allowing others to see the weight attached to different VCs and can understand the rationale of the assessment.

To provide justifiable results, the consultants should gather evidence to inform and explain the evaluation of an individual effect. Effective ESIA practice ensures that the methods used are clearly explained in the ESIA Report, so that they can be readily understood by the stakeholders and the public consulted.

The assessment's findings are regularly set out as different levels of significance (e.g. major, moderate, minor, etc.). This approach is considered good practice. While recognising the inherent subjectivity of the assessment, it attempts to aid communication of the scale of the impact by introducing a classification. This approach also allows the Consultant to identify and discuss effects that some groups may consider significant, whilst others would not. For example, a negative landscape effect described as being of 'minor significance' might be considered to indicate that a majority of people would not consider the effect to be significant; however, a smaller group, perhaps within the local community, may disagree and consider the effect to be significant.

Significance determinations, therefore, should not be the exclusive prerogative of ‘experts’ or specialists. Significance should be defined in a way that reflects what is valued in the environment by regulators and by public and private stakeholders.

A common approach used in ESIAs is the application of a multi-criteria analysis. Common criteria used to evaluate significance include the magnitude of the predicted effect and the sensitivity of the receiving environment: Magnitude considers the characteristics of the change (timing, scale, size, and duration of the impact) which would probably affect the target receptor as a result of the proposed Project. Sensitivity is understood as the sensitivity of the environmental receptor to change, including its capacity to accommodate the changes the Projects may bring about.

8.8.1 Assessment Methodologies

Consultants are expected to use current best practices in assessing impacts. Several common best practices are included below:

Expert judgment is based on the professional opinion of experts that have considerable experience in the areas of assessed impacts such as on water, soil, biodiversity and communities. Expert judgments can be used when limited data and information are available that did not allow for predictive modelling to explore the impacts. Expert judgments can be used in conjunction with quantitative modelling and to complement modelling. They can also help interpret results and their consequences on social sectors and communities.

Where data are available, quantitative physical and mathematical models linking different aspects of the hydrological cycle, watershed-level impacts, impacts of changes in water and other land and ecosystems available for biodiversity and resources accessible for the surrounding communities, can be used to assess impacts.

The choice and use of quantitative models for impact prediction should be suited to the particular cause-effect relationship being studied, for example, transport and fate of oil spills, sediment loadings and fish growth and pesticide pollution of groundwater aquifers.

Examples of the use of quantitative models include:

- Air dispersion models to predict emissions and pollution concentrations at various locations resulting from the operation of Heavy Fuel Oil power plant.
- Hydrological models to predict changes in the flow regime of rivers resulting from the construction of a reservoir.
- Ecological models to predict changes in aquatic biota (e.g, benthos, fish) resulting from discharge of toxic substances.

Matrices and interaction diagrams: These are the most commonly used approaches in the ESIA. Matrices take the form of a grid or table that allows the assessment of linkages or impacts between the issues listed in the rows and columns. This includes, for example, the impacts at all stages of the Project—development, operation and closure—for each of the elements of the environment and society.

The matrices can be used to display quantitative information by, for example, listing the amount of waste produced, water extracted or qualitative information such as high, medium, low impacts.

Information entered into the matrices can be based on previously mentioned methods. The advantages of using matrices is that they provide an easy-to-understand visual representation across all the impacts. There are several types of matrices have been used in ESIA's:

Rapid Impact Assessment Matrix (RIAM) RIAM is a systematic approach using qualitative data that can be expressed in a semi-quantitative way. The RIAM method uses a multidisciplinary team to organize the analysis process into an interactive and coherent form that encourages participation throughout the process.

The system makes it possible to create an impact profile which allows the consultant to make a rapid comparison to the development options. There are four aspects of the environment that are analysed, physical-chemical, biological, human and economic. The process that RIAM follows is to identify significant changes (positive and negative) caused by the Project, establish a baseline for the monitoring plan, identify mitigation strategies and design a monitoring and evaluation system to determine the effectiveness of the mitigation strategies.

Using the RIAM method, public participation is carried out at the data collection and mitigation stages of the process. Both of these stages are directly followed by quality control measures during the analysis and program monitoring stages. A multidisciplinary consulting team allows data from different sectors to be analysed at the same time in one common matrix. A rapid and clear evaluation of the 3 most important impacts the Project may have is thus made possible. Such a matrix also allows the team to compare different development options according to how the four aspects of the environment may react to an action.

In the Battelle Environmental Evaluation System, environmental impacts are split into main categories: ecology, pollution, aesthetics and human interest. This method is helpful to determine alternatives to the proposed Project plan. Indicators are then chosen to measure specific parameters within each category⁹

For a full list of acceptable type of ESIA methods see Environmental Law Alliance Worldwide footnote¹⁰

8.8.2 Cumulative Impacts

The assessment of cumulative impacts (CIs) is essential to the ESIA. Areas of Project influence (AOIs) should include those areas potentially affected by CIs. Cumulative Impacts refer to impacts on the VCs which result from the incremental impact of the proposed Project when added to other past, present, and reasonably foreseeable future Projects/actions regardless of what entity or person undertake such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Cumulative impacts are recognized as important based on scientific concerns and/or concerns from affected communities. Examples of cumulative impacts include: incremental contribution of gaseous emissions to an airshed; reduction of water flows in a watershed due to multiple

⁹ <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Impact-Assessment-Methods.pdf>

¹⁰ <https://www.elaw.org/system/files/8+APPENDIX+B.pdf>

withdrawals; increases in sediment loads to a watershed; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways. The consultant should take these into account by focusing on the Project's incremental contribution to selected impacts.

Large complex Projects often have multiple components, finance sources and different implementation schedules. The Project Description should capture these components and they should be assessed together as a single Project.

Cumulative effects can occur at different temporal and spatial scales. The spatial scale can be local, regional or global, while the frequency or temporal scale includes past, present and future impacts on a specific environment or region. Because of their complex nature, significance thresholds and criteria for the assessment of cumulative effects should be defined early on, through a collaborative approach involving all the interested and affected parties in the process of data collection and analysis.

Cumulative impacts may also need to make greater use of interdisciplinary perspectives and methods, e.g. network diagrams and models that identify the cause-effect relationships which result in cumulative effects, trend analyses that identify historical, current and future trends for a given resource, and interactive matrices that consider the interactions of magnitude of the impacts assessed individually, should be considered.

8.8.3 Transboundary Impacts¹³

The borderline between Guyana and its neighbours is in many places defined by rivers which can receive runoff from land-based sources of pollution. The emerging offshore oil/gas sector makes down current territories vulnerable to major oil spills. Therefore, where relevant, potential Transboundary Impacts (TIs) should be considered when establishing the Terms and Scope of ESIA. This can be a sensitive topic due to sovereignty and territoriality issues.

Assessment of TIs would may involve several actions, including:

- Notification by Guyana of an 'affected country' or countries, informing of a planned activity that may have significant environmental effects on the latter's territory (the notification might also provide information on the planned activity, its likely significant transboundary effects and on the permitting and decision making process)
- A response by the affected country, indicating whether it wishes to be consulted further on the matter
- The sharing of information between the countries concerned
- The preparation of ESIA with T&S that addresses transboundary effects
- The distribution of the ESIA documentation, possibly translated, in the affected country
- Consultation between the authorities in the countries concerned
- Participation of the public in the affected country
- The taking of a decision on the activity by the country of origin, taking into account the ESIA documentation and comments received from the authorities and the public in the affected country

¹³Transboundary impact assessment: frameworks, experiences and challenges Wiek Schrage and Nick Bonvoisin, 2008

- The sharing of information with the affected country on the decision taken and, in some instances, the possibility of an appeal from the affected country against the decision, and
- Possibly, and preferably, monitoring and post-Project analysis.

8.8.4 *Adverse Effects*

The Act defines “adverse effects” as one or more of the following:

- (i) impairment of the quality of the natural environment or an use that can be made of it
- (ii) injury or damage to property or to plant or animal life
- (iii) harm or material discomfort to any person
- (iv) an adverse effect on the health of any person
- (v) impairment of the safety of any person
- (vi) rendering any property or plant or animal life unfit for use by human or unfit for its role in the ecosystem
- (vii) loss of enjoyment of normal use of property and
- (viii) interference with the normal conduct of business.

Note that the terms “impact” and “effect” have so far been used interchangeably. There is a subtle difference: impacts refer to changes resulting from an action while effect refers to the consequences of those changes. However, in assessing impacts, the subtle difference should be noted so that the specific adverse effects that the Project may have can be assessed and reported on as required by the Act.

8.9 Mitigation and Compensation Measures

Measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment should be described in the ESIA Report. These measures are listed below and commonly referred to as the ‘Mitigation Hierarchy’, except for the last action, offsetting, which can be considered to be a Compensation Measure:

1. **Avoidance:** the first step of the mitigation hierarchy comprises measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of infrastructure or disturbance. For example, placement of roads outside of rare habitats or key species’ breeding grounds, or timing of seismic operations when aggregations of whales are not present. Avoidance is often the easiest, cheapest and most effective way of reducing potential negative impacts, but it requires biodiversity to be considered in the early stages of a Project.
2. **Minimisation:** measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided. Effective minimisation can eliminate some negative impacts. Examples include such measures as reducing noise and pollution, designing

powerlines to reduce the likelihood of bird electrocutions, or building wildlife crossings on roads.

3. **Rehabilitation/restoration:** measures taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised. Restoration tries to return an area to the original ecosystem that occurred before impacts, whereas rehabilitation only aims to restore basic ecological functions and/or ecosystem services (e.g. through planting trees to stabilise bare soil). Rehabilitation and restoration are frequently needed towards the end of a Project's life-cycle, but may be possible in some areas during operation (e.g. after temporary borrow pits have fulfilled their use). Collectively **avoidance, minimisation and rehabilitation/restoration**

serve to reduce, as far as possible, the residual impacts that a Project has on biodiversity. Typically, however, even after their effective application, additional steps will be required to achieve no overall negative impact or a net gain for biodiversity.

4. **Offset:** measures taken to compensate for any residual, adverse impacts after full implementation of the previous three steps of the mitigation hierarchy. Biodiversity offsets are of two main types: 'restoration offsets' which aim to rehabilitate or restore degraded habitat, and 'averted loss offsets' which aim to reduce or stop biodiversity loss (e.g. future habitat degradation) in areas where this is predicted. Offsets are often complex and expensive, so attention to earlier steps in the mitigation hierarchy is usually preferable.

Supporting Conservation Actions: enhancement measures taken which have positive – but difficult to quantify – effects on biodiversity. These qualitative outcomes do not fit easily into the mitigation hierarchy but may provide crucial support to mitigation actions. Developers may consider enhancement measures in addition to offset measures.

Figure 4 below, sets out the various mitigative measures:

Type of measure	How it works
Measures to prevent	Impact avoidance by: Changing means or techniques, not undertaking certain Projects or components that could result in adverse impacts. Changing the site, avoiding areas that are environmentally sensitive. Putting in place preventative measures to stop adverse effects from occurring.
Measures to reduce	Impact minimisation by: Scaling down or relocating the Project. Redesign elements of the Project. Using a different technology. Taking supplementary measures to reduce the impacts either at the source or at the receptor (such as noise barriers, waste gas treatment, type of road surface).
Measures to offset	Offset or compensate for residual adverse impacts that cannot be avoided or further reduced in one area with improvements elsewhere with: Site remediation / rehabilitation / restoration. Resettlement. Monetary compensation.

:

Figure 4: Mitigation Measures

In accordance with the precautionary and avoidance principles, a long-term approach should be promoted, and priority should be given to avoiding impacts, prevention measures taken to avoid creating impacts from the outset, while remediation and Compensatory Measures should only be considered as a last resort.

Mitigation and Compensation Measures are assessed on the basis of how effective they are in reducing potentially significant adverse environmental impacts. The 'state of technology' principle refers to the use of best available techniques, in order to ensure that developers use the latest, most effective and economically justified technology to protect the environment.

From this perspective, best available techniques can provide a reliable starting place for Developers to identify risk management approaches and technologies that may be in turn be suggested as Mitigation Measures in an ESIA Report. The Report should clearly describe the adverse impact each measure is intended to avoid, mitigate or compensate when implemented. It should also describe the effectiveness of such measures, their reliability and certainty, as well as the commitment to ensuring their practical implementation and monitoring of the results.

8.10 Monitoring

Monitoring Measures proposed should be included in the ESIA Report, where significant adverse effects have been identified. This monitoring should be carried out during the construction and operation of a Project.

Monitoring Measures must be incorporated in Permitting of a Project if the Project is likely to have significant adverse effects. The description of Monitoring Measures is linked to the description of measures proposed to mitigate significant adverse effects on the environment and should be linked to ensuring these measures are carried out successfully. Monitoring Measures may be developed directly for the Project in question or may arise from other requirements (such as Project financing).

The description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

The type of parameters to be monitored and the duration of the monitoring shall be proportionate to the nature, location and size of the Project and the significance of its effects on the environment.

8.10.1 Objectives of Monitoring Measures

The monitoring requirements can help ensure:

- Significant adverse impacts from the construction and operation of Projects do not exceed impacts predicted in the ESIA Report and that measures taken to offset such impacts are carried out as planned
- The methods with which significant adverse effects can be assessed for robustness. This can help to improve the identification of impacts in future ESIA Reports.

Monitoring ensures the Project meets predicted impacts. These ESIA Guidelines aim to reduce the significant adverse effects of proposed actions on the environment. However, it is recognized that some Projects cannot be implemented without significant impacts on the environment.

During the ESIA process, such impacts are not only identified, but their evolution is also forecasted. The systematic ex-post impact monitoring of adverse significant effects, resulting from the Project, offers an opportunity to identify if forecasted impacts are not developing as predicted, so that steps may be taken for rectification. This monitoring also tracks the effectiveness of measures set in place to mitigate or to compensate for significant effects. Monitoring also allows for additional or unforeseen relevant information to be considered, such as climate change or cumulative impacts for example, again allowing for remedial action.

In addition to evaluating the impacts of a Project, ex-post Project monitoring can also shed light on the effectiveness of the ESIA procedure, with regards to the quality of the data used and the accuracy of the approaches and methods. This can improve the transparency, legitimacy, and effectiveness of the EIA process, especially if documented evidence of the actual environmental impacts of a Project is publicly available.

8.10.2 Developing Monitoring Measures

Developing monitoring indicators is an essential first step for any monitoring activity. These indicators are highly dependent upon the type of Project concerned; however, consultation of the

Baseline may guide Developers in identifying the right indicators. See footnote for comprehensive list of indicators from International Institute for Sustainable Development¹⁴

Monitoring Measures can:

- Make sure that the significant effects identified develop as predicted
- Ensure that the measures in place to mitigate and compensate significant adverse effects are carried out
- Identify unpredicted significant adverse effects.

The types and number of environmental parameters to monitor, and the monitoring frequency, are very Project-specific, and need to be proportionate to the Project's relevant parameters.

The time, effort, and costs put into Monitoring Measures should be justified by how important the potential environmental impacts will be, as well as the complexity of any Mitigation and Compensation Measures recommended in the EIA Report to avoid, prevent, reduce or to offset effects. The cost of monitoring can be a decisive factor when considering not only the Project Alternatives (as mentioned above), but also when developing Monitoring Measures. Other parameters, such as the sensitivity of the local environment, the number and type of affected stakeholders, and the level of uncertainty regarding the assumptions and Projections made in the assessment itself should also be taken into account.

Monitoring data collection and evaluation activities should be frequent enough so that the information generated is still relevant, but not so frequent as to be a burden to those implementing the process. Monitoring need not be difficult or overly technical and could even be as simple as a photo taken from the same vantage point over time, if such a photo clearly documents the relevant indicator.

Where appropriate, developers should consider involving representatives from affected communities to participate in monitoring activities. The developers monitoring program should be overseen by the appropriate level in the organization. For Projects with significant impacts, the developer should retain external experts to verify its monitoring information.

In addition to recording information to track performance and establishing relevant operational controls, the client should use dynamic mechanisms, such as internal inspections and audits, where relevant, to verify compliance and progress toward the desired outcomes. Monitoring will normally include recording information to track performance and comparing this against the previously established benchmarks or requirements in the management program. Monitoring should be adjusted according to performance experience and actions requested by the EPA. The developer will document monitoring results and identify and reflect the necessary corrective and preventive actions in the amended management program and plans. The developer will implement these corrective and preventive actions and follow up on these actions in upcoming monitoring cycles to ensure their effectiveness.

Senior management in the Project's organization will receive periodic performance reviews of the effectiveness of the EMP, based on systematic data collection and analysis. Based on results within these performance reviews, senior management will take the necessary and appropriate

¹⁴ <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Monitoring-indicators.pdf>

steps to ensure the intent of the client's policy is met, that procedures, practices, and plans are being implemented, and are seen to be effective.

Below are some more practical recommendations that consultants should consider when designing Monitoring Measures as part of the ESIA Report:

- Monitoring Measures should be detailed enough to allow for proper implementation – the parameters, frequency, methods, responsibilities, and resources should be identified in advance. Monitoring measures should include immediate, short and long term measures for implementation.
- The section on Baseline recommends developing a database to reduce the time spent on extensive field surveys and to facilitate future environmental assessments for similar Projects. Such a database would also be closely linked to monitoring results from ongoing Projects.
- Discussions with authorities and communities during the Scoping stage would help identify issues requiring monitoring. This can also build trust and partnerships that may become valuable when collecting data for monitoring.
- To the extent that it is reasonable, Monitoring Measures should have the capacity to identify any unforeseeable adverse effects, meaning that they should take the state of the affected environment, as well as the specific impacts (e.g. emissions, resource use) generated by the Project, into account.
- Monitoring results should be readily available to the EPA and to the public.

8.11 Environmental Management Plan (EMP)

An EMP provides a description of the methods and procedures for mitigating and monitoring impacts discussed above. Ideally, all mitigation measures described in the ESIA Report should be listed in a commitment register which is then used to develop the topic specific management plans as part of the EMP. This helps with confirming whether all measures proposed are actually followed through during Project implementation.

The EMP contains environmental and social objectives and targets which the developer needs to meet in order to reduce or eliminate negative impacts. It is important to note that an EMP can be used throughout the Project life cycle. However, the document should be regularly updated in an effort to remain aligned with the Project as it progresses from construction to operation and to decommissioning. An EMP is recognised as a tool that can be used to provide assurance that developers make suitable provisions for counteracting negative impacts that occur through Project implementation and operation.

The EMP should focus on the relevant environmental VCs for the proposed development, and these should be agreed in consultation with the EPA and other stakeholder agencies when necessary. It should contain the following:

- a. A description of the surrounding environment (AOIs), including biodiversity, human habitation, land uses and features.

- b. A summary of the predicted negative and positive impacts associated that require management actions (i.e. mitigation of negative impacts or enhancement of positive impacts) should be summarised. Particular emphasis should be placed on impacts that are of medium and high significance
- c. capacity development for human and other resources that are required to implement the EMP

The EMP should identify feasible and cost-effective mitigation measures to reduce significant negative environmental impacts to acceptable and legal levels. Mitigation measures should be described in detail and be accompanied by designs, equipment descriptions, and operating procedures. The technical aspects of implementing the mitigation measures should be described.

Environmental and Social performance monitoring should be designed to ensure that mitigation measures are implemented. The monitoring programme should clearly indicate the linkages between impacts, indicators to be measured, measurement methods and definition of thresholds that will signal the need for corrective action.

A monitoring programme comprises the following aspects:

- i. Baseline measuring: This should occur prior to the start of the Project or activity in order to determine the level and status of the environmental parameters prior to any impacts associated with the Project or activity
- ii. Impact (or performance) monitoring: This type of monitoring should be ongoing throughout the Project's life cycle. Further, impact monitoring must be implemented to ensure that environmental impacts are within the predicted levels and that specified environmental performance targets are being achieved
- iii. Compliance monitoring: This type of monitoring is implemented to ensure that the prescribed mitigation measures are effective. Further, it ensures that the results of the measurements of environmental parameters are compliant with the Act, conditions under which the Project is approved, and standards stipulated for environmental protection identified in the EMP
- iv. Implementation schedule and reporting procedures: An implementation schedule must be prepared showing the sequence and timing (including frequency and duration – immediate, short and long-term) of the management actions and monitoring activities of the EMP. The measures should be specified in an implementation schedule, showing links with the overall Project. Procedures to provide information on the progress and results of mitigation and monitoring measures should also be clearly specified
- v. Cost estimates: This section provides cost estimates for initial and recurring expenses for implementation of the EMP, including provision for: mitigation and enhancement actions; training and environmental awareness requirements; monitoring; auditing; and corrective actions.

8.12 Environmental Impact Statement

This should be an easily accessible summary of the content of the ESIA Report presented without technical jargon, hence understandable to anybody without a background in the environment or the Project. This ESIA summary is, therefore, broadly encompassing as it needs to include the description of the Project, the significant effects, Mitigation Measures, Monitoring Measures, the Baseline, and reasonable Alternatives, as well as the methods used for the assessment including explanations on any hurdles encountered during the analysis.

This summary needs to be concise and engaging enough to enable all relevant stakeholders and the public to get a proper sense of the key issues at stake and the proposed way forward. Execution of the Project should include the overall benefit to the Guyanese People.

Depending on the Project, and the degree of complexity of the environmental issues involved, a Statement of 10 to 20 pages in length is generally considered to be good practice. If necessary, this may be presented in a further simplified form using necessary graphics for relevant stakeholder audiences.

Consultants may also consider providing context about the methodology for carrying out the ESIA, highlighting any significant uncertainties about the outcomes. It may also be useful to describe the Authorisation process for the Project, and the role of the ESIA in this process, to help lay members of the public to understand the context for the ESIA and its findings.

The main aim of an EIS is to provide prudent information for two types of audiences – decision-makers and people potentially affected by a Project.

The information presented in an EIS should enable stakeholders and authorities to form opinions and to take decisions regarding the proposed Project. While there are no formal requirements concerning the format and the presentation of the report, it is recommended that the EIS clearly sets out the methodological considerations and the reasoning behind the identification and assessment of significant effects, so that others can see the weight attached to different Valued Components and can understand the rationale of the assessment.

Qualities of a Good EIS

A good quality EIS contains clear structure with a logical sequence that describes, for example, existing Baseline conditions, predicted impacts (nature, extent and magnitude), scope for mitigation, proposed Mitigation/Compensation Measures, significance of unavoidable/residual impacts for each environmental component. It should also:

- Have a table of contents at the beginning of the document
- Provide a description of the Development Consent procedure and how EIS fits within it
- Read as a single document with appropriate cross-referencing
- Be concise, comprehensive and objective
- Be written in an impartial manner without bias
- Include a full description and comparison of the Alternatives studied
- Make effective use of diagrams, illustrations, photographs and other graphics to support the text
- Use consistent terminology with a glossary
- Reference all information sources used
- Have a clear explanation of complex issues
- Contain a good description of the methods used for the studies of each environmental factor

- Cover each environmental factor in a way which is proportionate to its importance
- Provide evidence and documentation of effective consultations (including recording or verbatim transcripts)
- Make a commitment to mitigation (with a programme) and to monitoring
- Contain, where relevant, a reference list detailing the sources used for the description and assessments included in the report.

9.0 ESIA Review Checklist

A comprehensive ESIA Review Checklist is included in Annex 1: ESIA Review Checklist. It is designed to support users of this ESIA Guidance Document in the preparation and reviewing of an ESIA Report. The checklist can be used at multiple stages of the assessment procedure in various ways:

- for planning and guiding the preparation of an ESIA Report by Consultants
- when reviewing a draft of the ESIA to ensure that it is complete and complies with all requirements of the TOR and can be used for consultation or submission to the EPA;
- when determining if enough information has been provided to allow for the public and stakeholder groups to develop informed opinions and reactions; and
- for the EPA and Sector Agencies to carry out the examination of the ESIA Report once it has been submitted.

The checklist is organised into seven sections that follow the order of presentation of the ESIA as follows:

- Description of the Project
- Description of the environment likely to be affected by the Project (including Baseline)
- Description of the Project's likely significant effects
- Alternatives
- Description of Mitigation and Compensation Measures
- Description of Monitoring Measures
- Quality (presentation, EIS (Non-Technical Summary), and quality of experts).

Instructions for using the checklist have been included at the beginning of the Annex 1 The checklist has been developed as a flexible tool to enable different actors in the ESIA procedure to use it at different stages.

10.0 Monitoring Compliance

Where an Environmental Authorisation is in force it shall be the duty of the Agency to take all necessary steps to ensure the Developer is in compliance with agreed terms.

The EPA will ensure at all times that:

1. implementation of Project activities do not cause pollution of the environment or harm to human health or become seriously detrimental to the amenities of the locality affected by the activities and

2. ensure that the conditions of the environmental authorisation are complied with including the human capacity and resources required to undertake the monitoring activities agreed to in the Permit

Once an Environmental Authorisation is issued, the Agency will monitor the Project on a periodic basis, depending on the operation, for compliance with the conditions outlined in the Permit. An environmental authorisation can be cancelled, suspended or revoked if specified conditions are not being met.

Fines and penalties can be imposed for non-compliance with the requirements of good environmental management and conditions of the Permit. In addition, the Permit holder is required to submit reports to the Agency on environmental performance and compliance with the Environmental Authorisation as stipulated in the permit. Such monitoring reports may be submitted monthly, quarterly or annually.

In monitoring compliance any officer assigned to the Project by the EPA has the right of full access to any area, equipment or materials associated with the Project development at any time.

References/ List of Footnotes

- 1 The Act, Part IV, Requirement for environmental impact assessment 11. (1)
- 2 As per Annex 1: Project Evaluation Summary Table (Evaluation Outcome (ii))
- 3 Public Consultation and Participation. Source: <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Public-participation.pdf> <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Public-participation.pdf>
- 4 Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)
- 5 Environmental Impact Assessment (EIA) A handbook for scoping projects, UK, Environment Agency, 2002
- 6 Economic Cost - Benefit Analysis (CBA) of Project Environmental Impacts and Mitigation Measures: Implementation Guideline, IADB, 2012
[[https://publications.iadb.org/publications/english/document/Economic-Cost-Benefit-Analysis-\(CBA\)-of-Project-Environmental-Impacts-and-Mitigation-Measures-Implementation-Guideline.pdf](https://publications.iadb.org/publications/english/document/Economic-Cost-Benefit-Analysis-(CBA)-of-Project-Environmental-Impacts-and-Mitigation-Measures-Implementation-Guideline.pdf)]
- 7 Intergovernmental Panel on Climate Change, 2001
- 8 <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Impact-Assessment-Methods.pdf>
- 9 <https://www.elaw.org/system/files/8+APPENDIX+B.pdf>
- 10 Transboundary impact assessment: frameworks, experiences and challenges Wiek Schrage and Nick Bonvoisin, 2008
- 11 <https://www.iisd.org/learning/eia/wp-content/uploads/2016/05/Monitoring-indicators.pdf>

APPENDIX 1: ESIA Review and Evaluation

Instructions

The ESIA Report and EIS are reviewed and evaluated using the Check List which comes after the Project Evaluation Summary Table below. The Checklist is designed to cover a wide range of Project types across sectors. The purpose of the checklist is for the reviewer to determine the adequacy of the ESIA submitted. After reviewing the ESIA, the first step in using the checklist is to decide, for each of the questions, whether the question (i) is relevant to the specific Project, (ii) is adequately addressed and (iii) if further information is required.

If the question is relevant, then enter 'Yes' in Column 3. At the end of each of the checklist's sections, consider whether or not there are any special features of the Project that have not been identified in the checklist that could be relevant and add these to the checklist in the spaces provided.

For all of the questions that are relevant to the Project and context, the reviewer may then examine the ESIA Report in more detail and decide whether the particular information identified in the question is provided and is sufficient. If it is complete and sufficient, then enter: 'Yes' in Column 3. If it is not, then enter: 'No'. If the answer is 'Yes' include reference to the section of the ESIA where the information is provided.

In considering whether the information is complete and sufficient the reviewer should consider whether there are any omissions in the information and whether these omissions are vital to the consultation or decision-making processes. If these omissions are not vital, then it may be unnecessary to identify or request further information. This will avoid unnecessary delay to the EIA process.

Factors to consider will include:

- The Project's scale and complexity and the sensitivity of the receiving environment
- Whether the environmental issues raised by the Project are high profile
- The views of the public and consultees about the Project and the degree of controversy.

If the answer to a review Question is 'No', identify what further information is required and note this in Column 4.

Project Evaluation Summary

The checklist sections are summarised in the Project Evaluation Summary Table below. This provides a detailed scale for determining the adequacy of ESIA/EIS and the basis for decision making about the Project.

The decision to approve a Project is based on how well the ESIA has addressed its Terms and Scope, the extent to which adverse effects related to the Project can be mitigated and subjected to conditions which are reasonably necessary to protect human health and the environment. The Summary Table can be used to communicate the decision of the EPA to the developer.

PROJECT EVALUATION SUMMARY TABLE

	Review Section	(A) # Questions	(B) # Adequately Addressed	(C) # Inadequately Addressed	(D) C/A	Comment
1	<i>Project Description</i>					
1.1	Objective and Physical Characterisation	15				
1.2	Size of Project	8				
1.3	Production Processes and Resources Used	10				
1.4	Residues and Emissions	18				
1.5	Risk of Accidents/Hazards	4				
2	<i>Environmental Components Likely to Be Affected</i>					
2.1	Baseline	17				
2.2	Data Collection Methods	13				
3	<i>Description of Significant Impacts</i>					
3.1	Scoping of Impacts	4				
3.2	Prediction of Impacts	23				
3.3	Prediction of Effects on Human Health & Sustainable Development Issues	2				
3.4	Evaluation of Significance of Effects	4				
3.5	Impact Assessment Methods	7				
4	<i>Consideration of Alternatives</i>	13				
5	<i>Description of Mitigation Methods</i>	10				
6	<i>Description of Monitoring Methods</i>	8				
7	<i>Quality</i>					
7.1	ESIA Quality	12				
7.2	EIS Quality	7				
7.3	Consulting Expertise	2				
TOTALS						
OVERALL EVALUATION of ESIA/EIS						
(i)	Acceptable as is and the Project can be approved with conditions					
(ii)	Minor adjustments/clarifications to be made prior to Project approval					
(iii)	Inadequacies to be addressed before a decision on the Project can be made					
(iv)	Not acceptable and there is need to revisit Terms and Scope before a decision can be made					
(v)	ESIA/EIS acceptable. Project not approved due to unacceptable risk to human and environmental well being					

SECTION 1: DESCRIPTION OF THE PROJECT				
#	Review Question	Relevant ?	Adequately Addressed ?	What further information is needed?
THE OBJECTIVES AND PHYSICAL CHARACTERISTICS OF THE PROJECT				
1.1	Are the Project's objectives and the need for the Project explained?			
1.2	Is the programme for the Project's implementation described, detailing the estimated length of time (e.g. expected start and finish dates) for construction, operation, and decommissioning? (this should include any phases of different activity within the main phases of the Project, extraction phases for mining operations For example)			
1.3	Have all of the Project's main characteristics been described?			
1.4	Has the location of each Project component been identified, using maps, plans, and diagrams as necessary?			
1.5	Is the layout of the site (or sites) occupied by the Project described? (including ground levels, buildings, other physical structures, underground works, coastal works, storage facilities, water features, planting, access corridors, boundaries)			
1.6	For linear Projects, have the route corridor, the vertical, and horizontal alignment and any tunnelling and earthworks been described?			
1.7	Have the activities involved in the construction of the Project (including land-use requirements) all been described?			
1.8	Have the activities involved in the Project's			

	operation) all been described? (including land-use requirements and demolition works)			
1.9	Have the activities involved decommissioning the Project all been described? (e.g. closure, dismantling, clearance, site restoration, site re-use, etc.)			
1.10	Have any additional services, required for the Project, been described? (e.g. transport access, water, sewerage, waste disposal, electricity, telecoms)			
1.11	Are any developments likely to occur as a consequence of the Project identified? (e.g. new housing, roads, water or sewerage infrastructure, aggregate extraction)			
1.12	Have any existing activities that will alter or cease as a consequence of the Project been identified?			
1.13	Have any other Existing or planned developments, with which the Project could have cumulative effects, been identified?			
1.14	Has the 'whole Project' been described, e.g. including all associated/ancillary works?			
1.15	Are any activities described as part of the 'whole Project' excluded from the assessment? Are such exclusions justified?			
	THE SIZE OF THE PROJECT			
1.16	Is the area of land occupied by each of the permanent Project components quantified and shown on a scaled map? (including any associated access arrangements, landscaping, and ancillary facilities)			
1.17	Has the area of land required temporarily for construction been quantified and mapped?			
1.18	Is the reinstatement and after-use of the land occupied for the operation of the Project described? (e.g. land used for mining or quarrying)			

1.19	Has the size of any structures or other works developed as part of the Project been identified? (e.g. the floor area and height of buildings, the size of excavations, the area or height of planting, the height of structures such as embankments, bridges or the flow or depth of water)			
1.20	Has the form and appearance of any structures or other works developed as part of the Project been described? (e.g. the type, finish, and colour of materials, the architectural design of buildings and structures, plant species, ground surfaces, etc.)			
1.21	For urban or similar development Projects, have the numbers and other characteristics of new populations or business communities been described?			
1.22	For Projects involving the displacement of people or businesses, have the numbers and other characteristics of those displaced been described?			
1.23	For new transport infrastructure or Projects that generate substantial traffic flows, has the type, volume, temporal pattern, and geographical distribution of new traffic generated or diverted as a consequence of the Project been described?			
PRODUCTION PROCESSES AND RESOURCES USED				
1.24	Have all of the processes involved in operating the Project been described? (e.g. manufacturing or engineering processes, primary raw material production, agricultural or forestry production methods, extraction processes)			
1.25	Have the types and quantities of outputs produced by the Project been described? (these could be primary or manufactured products, goods such as power or water or services such as homes, transport,			

	retailing, recreation, education, municipal services (water, waste, etc.)			
1.26	Have the types and quantities of resources, e.g. natural resources (including water, land, soil, and biodiversity), raw materials, and energy needed for construction and operation been discussed?			
1.27	Have the environmental implications of the sourcing of resources, e.g. natural resources (including water, land, soil and biodiversity), raw materials, and energy been discussed?			
1.28	Have efficiency and sustainability in use of resources, e.g. natural resources (including water, land, soil and biodiversity), raw materials, and energy been discussed?			
1.29	Have any hazardous materials used, stored, handled or produced by the Project been identified and quantified? <ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning. 			
1.30	Has the transportation of resources, including natural resources (including water, land, soil, and biodiversity) and raw materials to the Project site, and the number of traffic movements involved, been discussed? (including road, rail and sea transport) <ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning. 			
1.31	Have the Project's environmentally relevant social and socio-economic implications been discussed? Will employment be created or lost as a result of the Project, for instance? <ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning. 			

1.32	Have the access arrangements and the number of traffic movements involved in bringing workers and visitors to the Project been estimated? <ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning. 			
1.33	Has the housing and provision of services for any temporary or permanent employees for the Project been discussed? (this is relevant for Projects that require the migration of a substantial, new workforce into the area, either for construction or in the long term)			
1.34	Have the types and quantities of solid waste generated by the Project been identified? (including the construction or demolition of wastes, surplus spoil, process wastes, by-products, surplus or reject products, hazardous wastes, household or commercial wastes, agricultural or forestry wastes, site clean-up wastes, mining wastes, decommissioning wastes) <ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning. 			
1.35	Have the composition and toxicity, or other hazards from all solid wastes produced by the Project, been discussed?			
1.36	Have the methods for collecting, storing, treating, transporting, and finally disposing of these solid wastes been described?			
1.37	Have the locations for the final disposal of all solid wastes been discussed, in consideration with the Waste Management Plan(s) concerned?			
1.38	Have the types and quantities of liquid effluents generated by the Project been identified? (wastes, cooling water, treated effluents, sewage)			

	<ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning 			
1.39	Have the composition and toxicity or other hazards of all liquid effluents produced by the Project been discussed?			
1.40	Have the methods for collecting, storing, treating, transporting, and finally disposing of these liquid effluents been described?			
1.41	Have the locations for the final disposal of all liquid effluents been discussed?			
1.42	<p>Have the types and quantities of gaseous and particulate emissions generated by the Project identified? (including process emissions, emissions, emissions from combustion of fossil fuels in stationary and mobile plant, emissions from traffic, dust from materials handling, odours)</p> <ul style="list-style-type: none"> • during construction; • during operation; • during decommissioning. 			
1.43	Have the composition and toxicity or other hazards of all of emissions to the air produced by the Project been discussed?			
1.44	Have the methods for collecting, treating, and finally discharging these emissions to the air described?			
1.45	Have the locations for discharge of all emissions to the air been identified and have the characteristics of the discharges been identified? (e.g. height of stack, velocity and temperature)			
1.46	Have the methods for capturing, treating, and storing these emissions been described?			
1.47	Have the locations for the storage of all emissions identified and the characteristics of the storage unit been identified? (e.g. type of storage unit, storing capacity, methods used)			

1.48	Has the potential for resource recovery from wastes and residues been discussed? (including re-use, recycling or energy recovery from solid waste and liquid effluents)			
1.49	Have any sources of noise, heat, light or electromagnetic radiation from the Project been identified and quantified? (including equipment, processes, construction works, traffic, lighting, etc)			
1.50	Have the methods for estimating the quantities and composition of all residues and the emissions identified and any difficulties, been discussed?			
1.51	Have the uncertainty attached to estimates of residues and emissions been discussed?			
RISKS OF ACCIDENTS AND HAZARDS				
1.52	Have any of the risks associated with the Project been discussed? <ul style="list-style-type: none"> • risks from handling of hazardous materials; • risks from spills fire, explosion; • risks of traffic accidents; • risks from breakdown or failure of processes or facilities; • risks from exposure of the Project to natural disasters (earthquake, flood, landslide etc.). 			
1.53	Have the measures to prevent and respond to accidents and abnormal events been described? (preventative measures, training, contingency plans, emergency plans, early-warning systems, etc.)			
1.54	Is there a plan in place detailing the preparedness for an emergency? (e.g. suggested as part of the EIA Report's Mitigation measures)			
1.55	Is this plan in line with other Guyanese Legislation, Codes of Practice, Policy, on the control of major-			

	accidents, hazards involving dangerous substances, which refers to emergency plans?			
OTHER QUESTIONS ON DESCRIPTION OF THE PROJECT				

SECTION 2: DESCRIPTION OF ENVIRONMENTAL COMPONENTS LIKELY TO BE AFFECTED BY THE PROJECT

#	Review Question	Relevant ?	Adequately Addressed ?	What further information is needed?
BASELINE: ASPECTS OF THE ENVIRONMENT				
2.1	Have the existing land uses on the land to be occupied by the Project and the surrounding area described and are any people living on or using the land been identified? (including residential, commercial, industrial, agricultural, recreational, and amenity land uses and any buildings, structures or other property)			
2.2	Have the topography, geology and soils of the land to be occupied by the Project and the surrounding area been described?			
2.3	Have any significant features of the topography or geology of the area described and are the conditions and use of soils been described? (including soil quality stability and erosion, agricultural use and agricultural land quality)			
2.4	Have any significant features of the topography or geology of the area described and are the conditions and use of soils been described? (including soil quality stability and erosion, agricultural use and agricultural land quality)			
2.5	Have the species (including their populations and habitats), and the habitat types that may be affected by the Project been described? (Particular			

	attention should be paid to any specially protected species and habitats).			
2.6	Have any specially designated sites that may be affected by the Project been described?			
2.7	Has the water environment of the area been described? (including reference to any River Basin Management Plans/Programme of Measures, running and static surface waters, groundwaters, estuaries, coastal waters and the sea and including run off and drainage. N.B. not relevant if water environment will not be affected by the Project)			
2.8	Have the hydrology, water quality, and use of any water resources that may be affected by the Project been described? (including any River Basin Management Plans/Programme of Measures currently in place for water supply, fisheries, angling, bathing, amenity, navigation, effluent disposal)			
2.9	Have local climatic and meteorological conditions in the area been described? (N.B. not relevant if the atmospheric environment will not be affected by the Project)			
2.10	Has existing air quality in the area been described? (N.B. not relevant if the ambient air will not be affected by the Project)			
2.11	Has the existing noise climate been described? (N.B. not relevant if acoustic environment will not be affected by the Project)			

2.12	Has the existing situation regarding light, heat, and electromagnetic radiation been described? (N.B. not relevant if these characteristics of the environment will not be affected by the Project)			
2.13	Have any material assets in the area that may be affected by the Project been described? (including buildings, other structures, mineral resources, water resource)			
2.14	Have any locations or features of archaeological, historic, architectural or other community or cultural importance in the area that may be affected by the Project been described, including any designated or protected sites?			
2.15	Has the landscape or townscape of the area that may be affected by the Project been described, including any designated or protected landscapes and any important views or viewpoints?			
2.16	Have the demographic, social and socio-economic conditions (e.g. employment) in the area been described?			
2.17	Have any future changes in any of the above aspects of the environment, that may occur in the absence of the Project, been described?			
DATA COLLECTION METHODS				

2.18	Has the study area been defined widely enough to include all of the areas likely to be significantly affected by the Project?			
2.19	Have all relevant national and local authorities been contacted to collect information on the Baseline environment?			
2.20	Have all the sources of data and information from existing databases, free services, and other relevant environmental assessments been investigated?			
2.21	Have sources of data and information on the existing environment been adequately referenced?			
2.22	Is justification provided about which particular existing datasets was(were) were relied upon, as opposed to others?			
2.23	Where data collection has been undertaken to characterise the Baseline environment, have the methods used, any difficulties encountered, and any uncertainties been the data described?			
2.24	Were the methods used appropriate for the purpose?			
2.25	Have the methods used to predict the impact of the Project on climate changes been described? (if relevant)			
2.26	Have the methods used to predict climate change's impact on the Project been described?			

2.27	Is the uncertainty attached to the climate change evolution predictions discussed? (if relevant)			
2.28	Did you consider life cycle assessment of the Project to describe the Project's impact on climate change? (if relevant)			
2.29	Have any important gaps in the data on the existing environment/evolution prediction identified (e.g. climate change), and the means used to deal with these gaps during the assessment, been explained?			
2.30	Where data collection would be required to adequately characterise the Baseline environment, but they have not been practicable for any reason, are the reasons explained and have proposals been set out for the surveys to be undertaken at a later stage?			
OTHER QUESTIONS ON THE DESCRIPTION OF THE ENVIIRONMENT				

SECTION 3: DESCRIPTION OF THE LIKELY SIGNIFICANT EFFECTS OF THE PROJECT

#	Review Question	Relevant ?	Adequately Addressed ?	What further information is needed?
SCOPING OF EFFECTS				
3.1	Has the process by which the scope of the information for the ESIA Report defined been described? (for assistance, see the Screening Tool)			
3.2	Is it evident that a systematic approach to Scoping has been adopted?			
3.3	Was consultation carried out during Scoping?			
3.4	Have the comments and views of consultees been presented?			
PREDICTION OF DIRECT EFFECTS				
3.5	Have the direct, primary effects on land uses, people, and property been described and, where appropriate, quantified?			
3.6	Have the direct, primary effects on geological features and characteristics of soils been described and, where appropriate, quantified?			
3.7	Have the direct, primary effects on biodiversity been described and, where appropriate, quantified? (if relevant, are references made to specially designated sites/species/habitats?)			

3.8	Have the direct, primary effects on the hydrology and water quality of water features been described and, where appropriate, quantified?			
3.9	Have the direct, primary effects on uses of the water environment been described and, where appropriate, quantified?			
3.10	Have the direct, primary effects on air quality been described and, where appropriate, quantified?			
3.11	Have the direct, primary effects on climate change been described and, where appropriate, quantified?			
3.12	Have the direct, primary effects on the acoustic environment (noise or vibration) been described and, where appropriate, quantified?			
3.13	Have the direct, primary effects on heat, light or electromagnetic radiation been described and, where appropriate, quantified?			
3.14	Have the direct, primary effects on material assets and depletion of natural resources (e.g. fossil fuels, minerals) been described?			
3.15	Have the direct, primary effects on locations or features of cultural importance been described?			
3.16	Have the direct, primary effects on the quality of the landscape and on views and viewpoints been described and, where appropriate, illustrated?			

3.17	Have the direct, primary effects on environmentally relevant demography, social, and socio-economic condition in the area been described and, where appropriate, quantified?			
3.18	Have the secondary effects on any of the environment's aspects, above, caused by primary effects on other aspects been described and, where appropriate, quantified? (e.g. effects on biodiversity, including any specially protected species and habitats, caused by soil, air or water pollution or noise; effects on uses of water caused by changes in hydrology or water quality; effects on archaeological remains caused by desiccation of soils)			
3.19	Have the temporary, short term effects caused only during construction or during time limited phases of Project operation decommissioning been described? (e.g. emissions produced during the construction)			
3.20	Have the permanent effects on the environment caused by construction, operation or decommissioning of the Project been described?			
3.21	Have the long-term effects on the environment, caused over the lifetime of Project operations or caused by build-up of pollutants, in the environment been described?			

3.22	Have the effects that could result from accidents, abnormal events or exposure of the Project to natural or man-made disasters been described and, where appropriate, quantified?			
3.23	Have the effects on the environment, caused by activities ancillary to the main Project, been described? (ancillary activities are part of the Project but usually take place at a distance from the main Project location e.g. construction of access routes and infrastructure, traffic movements, sourcing of aggregates or other raw materials, generation and supply of power, disposal of effluents or wastes).			
3.24	Have the indirect effects on the environment caused by consequential development been described? (consequential development is other Projects, not part of the main Project, stimulated to take place by implementation of the Project e.g. to provide new goods or services needed for the Project, to house new populations or businesses stimulated by the Project)			
3.25	Have the cumulative effects on the environment of the Project, together with other existing or planned developments in the locality, been described? (different future scenarios including a worst-case scenario should be described, as well as the effects on both climate change and biodiversity)..			

3.26	Have the transboundary effects on the environment of the Project, either during construction or operation, been described?			
3.27	Have the geographic extent, duration, frequency, reversibility, and probability of occurrence of each effect been identified as being appropriate?			
PREDICTION OF EFFECTS ON HUMAN HEALTH AND SUSTAINABLE DEVELOPMENT ISSUES				
3.28	Have the primary and secondary effects on human health and welfare described and, where appropriate, been quantified? (e.g. health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups).			
3.29	Have the impacts on issues such as biodiversity, marine environment, global climate change, use of natural resources and disaster risk been discussed, where appropriate?			
EVALUATION OF THE SIGNIFICANCE OF EFFECTS				

3.30	Is the significance or importance of each predicted effect clearly explained with reference to legal or policy requirements, other standards, and the number, importance, and sensitivity of people, resources or other receptors affected?			
3.31	Where effects are evaluated against legal standards or requirements, have the appropriate national or international standards been used and has relevant guidance followed?			
3.32	Have the positive effects on the environment been described, as well as the negative effects?			
IMPACT ASSESSMENT METHODS				
3.33	Have the methods used to predict the effects described, and the reasons for their choice, any difficulties encountered, and uncertainties in the results been discussed?			
3.34	Where there is uncertainty about the precise details of the Project, and its impact on the environment/climate change, have worst-case predictions been described?			
3.35	Where there have been difficulties in compiling the data needed to predict or evaluate effects, have these difficulties been acknowledged and their implications for the results been discussed?			

3.36	Has the basis for evaluating the significance or importance of impacts been described clearly?			
3.37	Have the impacts been described on the basis that all Mitigation Measures proposed have been implemented i.e. have the residual impacts been described?			
3.38	Is the level of treatment of each effect appropriate to its importance for the Development Consent decision? Does the discussion focus on the key issues and avoid irrelevant or unnecessary information?			
3.39	Is appropriate emphasis given to the most severe, adverse effects of the Project with lesser emphasis given to less significant effects?			
OTHER QUESTIONS RELEVANT TO DEVELOPMENT EFFECTS				
	Have, with a view to avoiding duplication of assessments, the available results of other relevant assessments under Union or national legislation, in preparing the environmental impact assessment report been taken into account? If so, how was this done?			

SECTION 4: CONSIDERATION OF ALTERNATIVES

#	Review Question	Relevant ?	Adequately Addressed ?	What further information is needed?
4.1	Have the different Alternatives suggested during Scoping been considered and assessed, and if not has justification been provided?			
4.2	Has the consultant preparing the EIA Report, identified and assessed additional Alternatives (to the ones suggested during Scoping)?			
4.3	Have the process by which the Project was developed been described and are the Alternatives to the design of the Project considered during this process been described?			
4.4	Have the Alternatives to the design considered during this process been described?			
4.5	Have the Alternatives to technology been considered during this process?			
4.6	Have the Alternatives to the location considered during this process been described?			
4.7	Have the Alternatives to the size considered during this process been described ?			
4.8	Have the Alternatives to the scale considered during this process been described?			
4.9	Has the Baseline situation in the 'do-nothing' scenario been described?			

4.10	Are the Alternatives realistic and genuine Alternatives to the Project? (i.e. feasible Project options that meet the objectives)			
4.11	Have the main reasons for choosing the proposed Project been provided, including an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects?			
4.12	Are the main environmental effects of the Alternatives compared to those of the proposed Project?			
4.13	Are Mitigation Measures considered in the assessment of Alternatives? (more on mitigation in section 5 below)			
OTHER QUESTIONS ON CONSIDERATION OF ALTERNATIVES				

SECTION 5: DESCRIPTION OF MITIGATION

#	Review Question	Relevant ?	Adequately Addressed ?	What further information is needed?
5.1	Where there are significant adverse effects on any aspect of the environment, has the potential for the mitigation of these effects been discussed?			
5.2	Have the measures that the Developer has proposed to implement, in order to mitigate effects, been clearly described and is their effect on the magnitude and significance of impacts clearly explained?			
5.3	Have any proposed mitigation strategy's negative effects been described?			
5.4	If the effect of Mitigation Measures on the magnitude and significance of impacts is uncertain, has this been explained?			
5.5	Is it clear if the Developer has made a binding commitment to implement the mitigation proposed or acknowledged that the Mitigation Measures are just suggestions or recommendations?			

5.6	Do the Mitigation Measures cover both the construction and operational phases of the Project?			
5.7	Have the Developer's reasons for choosing the proposed mitigation been explained?			
5.8	Have the responsibilities for the implementation of mitigation including roles, responsibilities, and resources been clearly defined?			
5.9	Where the mitigation of significant adverse effects is not practicable, or where the Developer has chosen not to propose any mitigation, have the reasons for this been clearly explained?			
5.10	Is it evident that the consultant developing the ESIA Report and the Developer have considered the full range of possible approaches to mitigation, including measures to avoid, prevent or reduce and, where possible, offset impacts by alternative strategies or locations, changes to the Project design and layout, changes to methods and processes, 'end of pipe' treatment, changes to implementation plans and management practices, measures to repair or remedy impacts and measures to compensate impacts?			
OTHER QUESTIONS ON MITIGATION				

SECTION 6: DESCRIPTION OF MONITORING MEASURES

#	Review Question	Relevant ?	Adequately Addressed	What further information is needed?
6.1	Where adverse effects on any aspect of the environment are expected, has the potential for the monitoring of these effects been discussed?			
6.2	Are the measures, which the Developer proposes implementing to monitor effects, clearly described and has their objective been clearly explained?			
6.3	Is it clear whether the Developer has made a binding commitment to implement the proposed monitoring programme or that the Monitoring Measures are just suggestions or recommendations?			
6.4	Have the Developer's reasons for choosing the monitoring programme proposed been explained?			
6.5	Have the responsibilities for the implementation of monitoring, including roles, responsibilities, and resources been clearly defined?			
6.6	Where monitoring of adverse effects is not practicable, or the Developer has chosen not to			

	propose any Monitoring Measures, have the reasons for this been clearly explained?			
6.7	Is it evident that the practitioners developing the ESIA Report and the Developer have considered the full range of possible approaches to monitoring, including Monitoring Measures covering all existing environmental legal requirements, Monitoring Measures stemming from other legislation to avoid duplication, monitoring of Mitigation Measures (ensuring expected significant effects are mitigated as planned), Monitoring Measures capable of identifying important unforeseen effects?			
6.8	Have arrangements been proposed to monitor and manage residual impacts?			
OTHER QUESTIONS ON MONITORING MEASURES				

SECTION 7: QUALITY				
#	Review Question	Relevant ?	Adequately Addressed ?	What further information is needed?
QUALITY OF PRESENTATION				
7.1	Is the EIA Report available in one or more clearly defined documents?			
7.2	Is the document(s) logically organised and clearly structured, so that the reader can locate information easily?			
7.3	Is there a table of contents at the beginning of the document(s)?			
7.4	Is there a clear description of the process that has been followed?			
7.5	Is the presentation comprehensive but concise, avoiding irrelevant data and information?			
7.6	Does the presentation make effective use of tables, figures, maps, photographs, and other graphics?			
7.7	Does the presentation make effective use of annexes or appendices to present detailed data that is not essential to understanding the main text?			
7.8	Are all analyses and conclusions adequately supported with data and evidence?			

7.9	Have all sources of data been properly referenced?			
7.10	Has terminology been used consistently throughout the document(s)?			
7.11	Does it read as a single document, with cross referencing between sections used to help the reader navigate through the document(s)?			
7.12	Is the presentation demonstrably fair and, as far as possible, impartial and objective?			
NON-TECHNICAL SUMMARY (EIS)				
7.13	Does the EIA Report include a Non-Technical Summary?			
7.14	Does the Summary provide a concise but comprehensive description of the Project, its environment, the effects of the Project on the environment, the proposed Mitigation Measures, and proposed monitoring arrangements?			
7.15	Does the Summary highlight any significant uncertainties about the Project and its environmental effects?			
7.16	Does the Summary explain the Development Consent process for the Project and the EIA's role in this process?			
7.17	Does the Summary provide an overview of the			

	approach to the assessment?			
7.18	Has the Summary been written in non-technical language, avoiding technical terms, detailed data, and scientific discussion?			
7.19	Would it be comprehensible to a lay-member of the public?			
EXPERTISE				
7.20	Is the competency of experts, who are responsible for the preparation of the ESIA Report, indicated or otherwise explained in the EIA Report?			
7.21	Has the Developer complied with national or local legal requirements and practices for the selection of experts responsible for the preparation of the EIA Report?			
7.22	Has the EIS addressed all the specific “adverse effects” referred to in the Act?			
OTHER QUESTIONS ON QUALITY OF PRESENTATION				



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