

ACWA Power Sirdarya 1,500MW CCGT
Power Plant (IPP)
Republic of Uzbekistan



ESIA: Volume 3 –
Framework for
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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
CESMP	Construction Environmental and Social Management Plan
CoESMP	Commissioning Environmental and Social Management Plan
EPAP	Equator Principles Action Plan
EPC	Procurement and Construction
ESAP	Environmental & Social Action Plan
ESIA	Environmental & Social Impact Assessment
ESMP	Environmental & Social Management Plan
ESMS	Environmental and Social Management System
HSSE	Health, Safety Security and Environment
OESMP	Operation Environmental and Social Management Plan
SEP	Stakeholder Engagement Plan
5 Capitals	5 Capitals Environmental & Management Consultancy

1 INTRODUCTION

This document presents the Framework for Environmental & Social Management following on from the ESIA for the ACWA Power 1,500MW Sirdarya CCGT Project ("the Project").

This framework has been informed by the outcomes of the ESIA and has been developed to establish structures for the management of Environmental and Social risks, impacts, opportunities and compliance associated with both the construction, commissioning and operational phases of the Project. The Framework is intended to outline systematic structures and management programmes that will comprise the respective construction, commissioning and operational phase Environmental and Social Management Systems (ESMS).

In order to implement the mitigation and management measures established in the ESIA (Volume 2), specific management programmes will be developed to incorporate these mechanisms, as well as the requirements of the local regulator, State Committee on Ecology and Environmental Protection and the Project Lenders. Such documented information will be in the form of Project-specific Construction Environmental and Social Management Plan (CESMP) and Operation Environmental and Social Management Plan (OESMP) (and complimentary plans/procedures); to be developed prior to the commencement of construction, commissioning and operations respectively.

This framework has also been prepared to ensure alignment with applicable elements of the established ACWA Power corporate level Health, Safety Security and Environment (HSSE) Management System Framework, which is intended to ensure consistent and structured HSSE project management between ACWA Power projects.

It should be noted that the Project ESMS documentation will be 'living' and will need to be updated in relation to changes in project circumstances, activities, environmental sensitivities and future requirements defined by respective regulatory authorities and Project Lenders.

2 ENVIRONMENTAL & SOCIAL MANAGEMENT SYSTEM (ESMS)

2.1 General Approach to the Development of the ESMS

The aim of the ESMS is to provide a systematic structure to enable the effective implementation and management of environmental and social risks, impacts, opportunities and compliance throughout the Project lifecycle.

Effective management of environmental & social issues should include the following fundamental components as part of a robust ESMS:

- Development of Project specific policies related to the environmental, social considerations (including labour, HR and external stakeholders & affected communities). Note: Occupational Health & Safety elements may fall under a separate policy, but can also be integrated with the above;
- Identifying applicable environmental & social legal requirements and other compliance obligations (such as those required by lenders);
- Identifying environmental & social aspects/risks and potential impacts as early as possible for construction, commissioning and operation phase planning, including the incorporation of environmental and social considerations into staffing requirements, process plans, programming, work orders, required authorisations, and site layout;
- Involving environmental & social professionals, who have the experience, competence, and training necessary to assess and manage environmental impacts and risks, and carry out specialised environmental social management functions including the preparation of Project or activity specific plans and procedures that incorporate the technical requirements presented in this document;
- Prioritising management programmes/ strategies with the objective of achieving an overall reduction of risk to human wellbeing and the environment, focusing on the prevention of irreversible and / or significant impacts;
- Favouring strategies that eliminate the cause of the impact at its source, for example, by selecting less hazardous materials or processes that avoid the need for environmental controls;
- When impact avoidance is not feasible, incorporating controls to reduce or minimise the possibility and magnitude of undesired consequences, for example, with the application of pollution controls to reduce the levels of emitted contaminants;
- Preparing workers, nearby communities and relevant stakeholders to respond to emergencies, accidents, including providing technical and financial resources to effectively and safely control such events, and restoring workplace and community environments; and

- Improving environmental performance (i.e. for continual improvement) through a combination of ongoing monitoring of facility performance and effective accountability.

Initial implementation of the ESMS should focus on setting and reviewing requirements, determining custodianship within the project team, identifying budgets, establishing target ranges for performance and establishing appropriate data gathering techniques and controls.

Performance ranges should be refined on a regular basis as more data becomes available, in turn enabling more accurate strategy development and benchmarking. It is important that the ESMS documents are treated as living documents, to be updated and refined within a continuous process of improvement.

A proposed implementation process for ESMS is illustrated in the figure below.

Figure 2-1 Implementation Process



2.2 ESMS Scope

The Project will develop and implement ESMSs for the respective construction and operational phases. The scope will need to include:

- Applicable activities and timescales for construction, commissioning and operation;
- Compliance with applicable national regulation, lender requirements and loan covenants;
- Detailed mitigation and management measures required following construction, commissioning and operational impacts identified from the ESIA;
- Roles and responsibilities for appropriate management organisational units;
- Boundaries of the ESMS (i.e. this will include the project site and may include associated facilities, temporary storage areas or other storage areas, warehouses etc.);
- Key risks and management requirements related to primary supply chains (which can reasonably be managed), and;
- Requirements for monitoring and reporting, including measures for inspection, audit, review and preventative action.

2.3 Development of Construction Phase ESMS

The construction phase ESMS will be developed and implemented by the Engineering, Procurement and Construction (EPC) Contractor and will cover all potential environmental and social risks, impacts, opportunities and related compliance associated with the Project's construction (including potential impacts from subcontractors and the supply chain that can be influenced by the principal contractor).

The construction phase ESMS will also comprise other plans, documents, data, forms, records etc. affiliated with the construction phase of the Project that are supplementary to, and defined by the CESMP.

The CESMP will be prepared, reviewed and submitted to the Project lenders prior to the commencement of construction

2.3.1 Development of a CoESMP

The Commissioning Environmental and Social Management Plan (CoESMP) should be prepared as the overarching, principal document that identifies scope, objectives, risks, responsibilities, desired outcomes and associated monitoring requirements of the ESMS associated with the commissioning phase of the Project.

The commissioning phase ESMS is likely to have plans, documents, data, forms, records etc. affiliated with the commissioning phase of the Project that are supplementary to, and should be defined by the CoESMP.

The CoESMP should be developed and implemented by the party or parties responsible for the commissioning of the Project and should cover all potential environmental and social impacts associated with the Project's commissioning phase such as waste water management, acid cleaning, steam blowing etc (including potential impacts from contractor subcontractors and the supply chain).

The CoESMP should be prepared, reviewed and where necessary approved by the relevant Statutory Authority (if required) and Project Lenders in advance of the commencement of commissioning activities.

Note: The responsibility of developing the CoESMP will be under the EPC Contractor.

2.4 Development of Operational Phase ESMS

The operational phase ESMS will be developed and implemented by the Operational and Maintenance Company and will cover all potential environmental and social risks, impacts, opportunities and relate compliance associated with the Project's operational phase (including potential impacts from subcontractors and the supply chain that can be influenced by the Operations and Maintenance Company).The operational phase ESMS will also comprise other plans, documents, data, forms, records etc. affiliated with the operational phase of the Project that are supplementary to, and will be defined by the OESMP.

The OESMP will be prepared, reviewed and where necessary approved by Project lenders prior to the commencement of operation.

2.5 ACWA Power Corporate HSSE Management System Framework

ACWA Power has developed a corporate level Health, Safety Security and Environment (HSSE) Management System Framework, which outlines the approach taken by ACWA Power with respect to HSSE issues, and what should be implemented by Project Companies. The intention of the framework is to ensure consistent and well-structured HSSE management between all Projects. The HSEE Management System Framework also provides oversight for Corporate Social Responsibility (CSR) issues.

The framework established by ACWA Power includes the following 12 elements:

- Element 1 – Leadership Commitment
- Element 2 – Measurement, Planning and Improvement

- Element 3 – Effective Communication
- Element 4 – Organisation and Resources
- Element 5 – Risk Management
- Element 6 - Suppliers, Contractors and Partners
- Element 7 – Project Design, Construction and Commissioning
- Element 8 – Operations and Maintenance
- Element 9 – Emergency Response and Crisis Management
- Element 10 – Incident Investigation and Analysis
- Element 11 – Auditing
- Element 12 – Management of Change

The Project ESMS shall mirror the corporate structures and benchmarks established in the ACWA Power corporate HSSE management framework, whilst ensuring any additional provisions specific to the ESIA and/or requirements of the Project lenders and local regulatory context are also captured.

3 POLICY

The construction, commissioning and operational phases of the Project will need to develop clear statements that define policy with regards to environmental and social issues.

3.1 ACWA Power Corporate Policies

ACWA Power has an established HSSE and CSR Policy. This policy will need to be adapted by the Project Company to ensure full inclusion of any relevant 'social' elements. As per the ACWA Power HSSE Management System Framework, this policy is required to be signed by the Executive Managing Officer/CEO of the Project Company and displayed at the site at all times.

3.2 Project Policies

It is separately expected that the Project Company (and possibly EPC Contractor and O&M Company) will establish Project specific policies that will provide the overarching direction for environmental & social management during construction, commissioning and operations respectively.

Notwithstanding any policies that may be established, the policy documents for the implementing entities (i.e. Project Company, EPC Contractor or O&M Company) will need to ensure alignment with the ACWA Power corporate level policy, whilst ensuring:

- Appropriate context of the Project, including the nature, scale and impacts as defined from the ESIA;
- A suitable framework for establishing appropriate environmental and social objectives;
- A commitment to fulfil all Environmental and Social compliance obligations;
- A commitment to the protection of the environment, including prevention of pollution and requirements established by the ESIA process;
- A commitment to the fair and just treatment of all staff including a commitment to:
 - Provide of a safe and healthy workplace environment;
 - Ensure fair and just remuneration in accordance with employment law and agreed contracts; and
 - Vehemently condemn and ensure against forced or compulsory labour, child labour or discrimination.
 - Zero tolerance to gender-based violence and harassment.
- Be available in English and other appropriate languages (in the geography of the Project (i.e. Uzbek and Russian), or for relevant stakeholders) in order for all personnel and visitors to understand.
- Include a commitment to continual improvement of the Environment and Social Management System.

During the construction, commissioning and operational phases, the policy should be established and signed by top management, appended to the CESMP/CoESMP/OESMP report and should be made available to all staff, contractors and sub-contractors. It will be important for the Project Company to ensure that this is undertaken, whilst ensuring that any lower level policies (i.e. those of the EPC Contractor or O&M Company) also ensure appropriate consistency.

4 IDENTIFICATION OF COMPLIANCE OBLIGATIONS

4.1 Identification of Legal Requirements

During the development of the ESMS, the applicable environmental and social legal requirements should be identified and documented, including:

- Uzbekistan Legislation and Regulations; and
- Applicable International Treaties and Conventions, signed and/or ratified by Uzbekistan.

4.2 Identification of ESIA Requirements

Volume 2 of the ESIA has developed Project and/or site-specific mitigation, management & monitoring measures that must be incorporated into the respective construction, commissioning and operational phase of the project. Assuming approval of the ESIA by the regulatory authority and/or project lenders, these stated measures are conditions of the approval.

4.3 Identification of Requirements from the Statutory Authority

The environmental clearance/permit/approval issued by State Committee on Ecology and Environmental Protection to the Project must be reviewed to ensure that all construction, commissioning and operational related conditions established are managed accordingly. Non-compliance with the State Committee on Ecology and Environmental Protection clearance/permit/approval conditions may result in a breach of legislation and permitting requirements. The environmental clearance/permit/approval shall be maintained as part of the ESMS.

4.4 Identification of Requirements from the Project Lenders

In response to the ESIA, the Financial Institutions providing finance to the project will establish an Action Plan that identifies Environmental and Social requirements for the project commensurate with or supplementary to the ESIA. This is commonly known as the Environmental & Social Action Plan (ESAP), or may also relate to an Equator Principles Action Plan (EPAP). Requirements of the action plan will be a covenant of the Project loan.

During the development of the ESMS¹, the lenders action plan for the Project must be reviewed to ensure that all related conditions are included for compliance management. It is highlighted that non-compliance with the lenders' requirements could impact financial disbursement and other factors.

5 IDENTIFICATION OF RISKS, IMPACTS & OPPORTUNITIES

One of the principal stages in the development of the Project's ESMS will be the development of a Project specific aspects/risks register linking to potential environmental or social impacts associated with the relevant activities being undertaken at that phase of the project.

Once environmental & social aspects and associated risks have been identified and documented (i.e. specifically in accordance with the required construction methods statements or operational activities), associated controls should be developed that are commensurate to the level of anticipated severity, likelihood and any statutory or lender requirements. The identification of risks and impacts is expected to be primarily aligned with the items identified in the ESIA.

When identifying the aspects/risks and associated environmental or social impacts the following should be taken into account:

- Risks, impacts and opportunities linked to the Project activities;
- Change, including planned or new development and or new/modified activities;
- Abnormal conditions and reasonably foreseeable emergency situations;
- Project timescales and potential impacts associated with seasonality;
- Stakeholder perception;
- Compliance obligations;
- Risks inherent in the supply chain in addition to those on-site; and
- Linkages with the Project's Health and Safety Management System.

The identification of aspects/risks and impacts should be documented, linked to associated proposed controls and updated as and when Project or environmental & social circumstances change.

6 COMPLIMENTARY PLANS & PROCEDURES

The CESMP, CoESMP and OESMP will also clearly define associated plans and procedures required to manage other significant environmental and social risks/impacts. The requirement for these plans are based on the mitigation and management measures as developed from the Volume 2 of the ESIA.

In alignment with the expected Project impacts, the following table provides a list of plans and procedures that are expected as a minimum to be linked to the CESMP, CoESMP and/or OESMP. This includes some key requirements for inclusion to each plan. The specific content of each plan will be dependent on the potential for environmental and social impacts for the Project as identified during the preparation of the CoESMP and OEMSP, which will directly relate to specific working methodologies.

Table 6-1 ESIA Required Plans and Procedures

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
Waste Management Plan	Construction, Commissioning & Operation	To identify site specific requirements for waste and wastewater treatment, containment of wastes (segregation, storage area specifications and locations), collection methodologies & transport (identification of licensed contractors and the process to engage), treatment/disposal (identification of licensed treatment and disposal sites), record keeping and reporting requirements related to waste and wastewater. To include measures to limit instances of contamination to soils and groundwater.
Occupational Health & Safety Plan	Construction, Commissioning & Operation	Identify the required controls for worker health and safety during the construction, commissioning and operational phases. As a minimum, this plan shall include: <ul style="list-style-type: none"> • Means of identifying and minimising, so far as reasonably practicable, the causes of potential hazards to workers. • Provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances. • Provision of appropriate equipment to minimise risks, and requiring and enforcing its use. • Training of workers, and provision of appropriate incentives for them to use and comply with health and safety procedures and protective equipment. • Documentation and reporting of occupational accidents, diseases and incidents. • Emergency prevention, preparedness and response arrangements.
Emergency Preparedness and Response Plan	Construction, Commissioning & Operation	To identify the contingencies put in place for a variety of potential emergency situations relevant to the construction, commissioning & operational phases. The plans should outline the response mechanisms, roles and responsibilities,

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
		<p>training requirements, internal communication, equipment and relevant engagement with external stakeholders.</p> <p>Requirements for on-site equipment shall be established based upon the potential emergency risks, including training provisions for site personnel in regard to such equipment. This plan is to include spill response and contingency in the event of accidental leaks and spills.</p>
Hazardous Material Storage Plan	Construction, Commissioning & Operation	<p>Should identify locations for hazardous material storage, storage requirements (specifications of bunds and buildings/warehouses to ensure environmental and H&S protection, segregation requirements etc.) and handling procedures to minimise environmental risk. The plan shall outline record keeping as per chain of custodies, requirements for MSDS and roles & responsibilities. Staff involved in chemical management, procurement or overseeing on-site deliveries shall be specified in the plan and provided with training for the provisions of this plan (all training to be linked to the training plan).</p>
Environmental Monitoring Plan	Construction, Commissioning & Operation	<p>Monitoring is required to demonstrate compliance with national environmental standards and lender requirements. The monitoring plan is to specify monitoring requirements for all ESIA parameters (as specified in ESIA Volume 2 – as a minimum). The plan will therefore need to include:</p> <ul style="list-style-type: none"> • What parameters need to be monitored and measured and at what locations. • The methods for monitoring measurement, analysis and evaluation to ensure valid results. • The criteria against which compliance and performance should be measured. • When and at what frequency monitoring needs to be performed. <p>How the results from monitoring and measurement should be analysed and evaluated (independent or internal).</p>
Traffic Management Plan	Construction, Commissioning & Operation	<p>The plan will identify any specific requirements for heavy, or oversize loads, including timings of deliveries, specific routes (to minimise disruption), engagement mechanisms with external transport authorities (as per the SEP, e.g. local government). To include measures to minimise congestion, fuel use and risks to the public and site staff.</p> <p>Deliveries will be guided by a Traffic Management Plan.</p>
Working Conditions and Terms of Employment Procedure	Construction, Commissioning & Operation	<p>The EPC contractor and O&M Company will provide a plan detailing how working conditions and terms of employment are compliant with national labour, social security and occupational health and safety laws.</p> <p>The EPC Contractor and O&M Company shall ensure that the following documents are prepared prior to the employment of workers.</p> <ul style="list-style-type: none"> • Employment agreements and recruitment policies; • Equal opportunities and non-discrimination policy (incorporating maternity policies and policies associated with GBVH); and

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
		<ul style="list-style-type: none"> Child and forced labour policies / procedures (covering recruitment fees and arrangements, as well as document (e.g. passport) retention).
Human Resources Policy (and related Procedures)	Construction, Commissioning & Operation	Human resource policies and procedures will be adapted appropriate to the size of the workforce required for operation and maintenance requirements. Policies and procedures must be prepared to demonstrate consistency with the requirements of national legislation and lenders requirements.
Retrenchment Plan	If required (Construction, Commissioning & Operation)	If collective dismissals are expected, the applicable Project party will develop a plan to mitigate the adverse impacts of retrenchment, in line with national law and good industry practice and based on the principles of non-discrimination and consultation. Without prejudice to more stringent provisions in national law, such consultation will involve reasonable notice of employment changes to the workers' representatives and, where appropriate, relevant public authorities so that the retrenchment plan may be examined jointly in order to mitigate adverse effects of job losses on the workers concerned. The outcome of the consultations will be reflected in the final retrenchment plan.
Stakeholder Engagement Plan (SEP)	Construction, Commissioning & Operation	To identify project stakeholders, identify communication protocols for engagement with stakeholders. To identify frequency or event-based communication with stakeholders (i.e. for emergencies and specific grievances). To detail the grievance mechanism, or provide a reference to a separate grievance mechanism for external parties.
Human Rights Policy	Construction, Commissioning & Operation	The statement policy will: <ul style="list-style-type: none"> Be approved at the most senior level of the company; Informed by relevant internal and external expertise; Stipulate the EPC's & O&M's human rights expectations of personnel, local communities, sub-contractors and other suppliers directly linked to the construction and operational phase of the project; Be publicly available and communicated internally and to the relevant stakeholders; Be reflected in the other policies and procedures to embed it throughout their construction and operational phase activities.
Grievance Mechanism	Construction, Commissioning & Operation	To be included within or be linked to the SEP. To identify the procedure for external parties and all site staff to be able to raise issues, concerns and opportunities for improvement for any aspect of their employment on the project including issues relating to GBV/H and sexual exploitation. The mechanism shall be easily accessible (including for any vulnerable groups), non-discriminatory and provide a transparent process to raise concerns or complaints, which may be issued in an anonymous nature. The mechanism shall specify the roles and responsibilities of internal staff with regard to the grievance mechanism and the procedure for

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
		responding to received grievances, including the timeline for response, engagement mechanisms and record keeping.
Security Plan	Construction & Operation	The security plan should be based on a security risk assessment of the reasonably foreseeable security risks (linked with security risks in the Emergency Preparedness and Response Plan), and tailored with the necessary management provisions, staffing requirements, equipment, training and defined processes to implement effective mitigation to manage or prevent these risks. The security plan should ensure applicable alignment to the necessary codes of conduct required by law enforcement under the United Nations principles for Law Enforcement Officers.
Community Action Plan	Construction & Operation	This plan shall define the site action to support community stakeholders in planning, responding and recovering from the COVID-19 outbreak especially when outbreaks are directly linked to the Project workers.
Influx Management Plan	Construction	The EPC Contractor will develop an Worker Influx Management Plan to provide a clear set of actions that will be undertaken for the management and mitigation, monitoring and evaluation of impacts related to worker influx in the Project area.
Chance Find Procedure	Construction	To identify the process for identifying and responding to a potential find of archaeology in the construction working area. It will include the process for halting works in that area, sectioning off potential artefact and external communication with relevant regional authorities as consistent with SEP.

6.1.1 Other Recommended Plans and Procedures

Besides the required ESIA plans and procedures stated above, the following plans and procedures are also recommended for development and implementation as part of the ESMS.

Table 6-2 Recommended Plans and Procedures

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
Pollution Prevention and Response Plan	Construction, Commissioning & Operation	Identify site specific requirements for the prevention of pollution and how to manage pollution incidents. To include the identification of high-risk areas on a plan and the location of spill kits (and contents of spill kits). To identify required contact details in the event of an incident and contractors that are available on a quick response contract to assist with clean up. Where necessary this should link with the SEP for any external communications. To identify staff that require training in regard to the plan. The plan should include provisions for recording of any incidents in a separate register, to ensure close out and implementation of corrective and preventative actions.

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
Site Inspection & Audit Plan & Procedure	Construction & Operation	<p>To specify the timing and frequency of inspections (e.g. daily, weekly walkovers) and audits (including internal & external independent audits for the lenders as appropriate).</p> <p>To detail the methodology of such inspections and audits to ensure Environmental and Social Issues required in Uzbekistan and required by project lenders are adequately covered.</p> <p>For internal audits, the procedure should identify the audit scope (site, laydown areas, accommodation areas, sub-contractor areas etc.), audit criteria (e.g. CESMP, OESMP, ESMS), selection process for audit evidence, reporting format and auditor competence requirements.</p> <p>The Procedure should specify definitions of non-conformance, observations and best practices, as well as detailing the mechanisms for issuance and follow up of Non-Conformance reports, including time periods for action and the implementation of corrective and/or preventative measures.</p> <p>The process to engage with the external independent lenders' auditors should also be listed and linked with the SEP as appropriate.</p>
Material handling and Storage Procedure	Construction, Commissioning & Operation	Should identify locations for material storage, storage requirements and handling procedures to minimise environmental and H&S risks. As appropriate this plan should be linked to or inclusive of the Hazardous Material Storage Plan and H&S Plan. Specific method statements regarding the handling of materials shall be detailed, as well as training requirements for staff involved in such activities.
Fuel & Chemical Unloading Procedure	Construction, Commissioning & Operation	To identify locations for fuel and chemical unloading, associated training requirements and associated pollution attenuation/spill response equipment that are to be in place regarding any unloading of fuel to larger tanks or chemicals to storage areas on-site. This should be linked or inclusive to the pollution prevention plan.
Environmental & Social Training Plan	Construction, Commissioning & Operation	To identify specific staff members for training and the type (i.e. classroom, practical, toolbox talks) how/when this is to be delivered, the frequency of training and whether follow up training provisions are required. The training should be linked to the specific content of the listed plans and procedures, or key risk activities that may be identified from on-site method statements.

7 MONITORING

Environmental monitoring is required during both construction, commissioning and operation to evaluate whether the project is in compliance with the applicable Uzbekistan regulations/standards and applicable lender requirements.

7.1 Monitoring Requirements from the ESIA

The specific Environmental & Social Monitoring Plan to be developed for construction, commissioning and operation shall include measures recommended in parameter specific chapters of ESIA Volume 2 and supplemented by detailing:

- What parameters need to be monitored and measured and at what locations;
- The methods for monitoring measurement, analysis and evaluation to ensure valid results;
- The criteria against which compliance and performance should be measured;
- When and at what frequency monitoring needs to be performed;
- How the results from monitoring and measurement should be analysed and evaluated (independent or internal);

The outcomes of the monitoring regime should ensure;

- The timing of monitoring and measurement is coordinated with the need for analysis and evaluation of results;
- The results of monitoring and measurement are reliable, reproducible and traceable; and
- analysis and evaluation are reliable and reproducible and enable the project to report trends.

7.2 Monitoring Data

Monitoring results should be compared against relevant standards, permit requirements, required thresholds, received complaints, audit findings, CESMP, CoESMP and OESMP requirements. The Environmental and Social Management team for the EPC Contractor or O&M Company will need to define appropriate action to follow in the instance that any exceedances in monitoring limits are confirmed or adverse impacts identified, including:

- Communication protocol in the event that an exceedance is identified;
- Internal review process of recently performed maintenance and inspection;
- Review of previous monitoring data to identify any potential associated variations or trends in results;

- Recommendations for quarantine of equipment or change in work practices; and
- Review of monitoring frequency to ensure the issue does not re-occur.

The repetition of measurements is an essential part of monitoring as it detects changes over time and should alert to potentially positive or negative effects of an activity. Adverse effects should trigger a review of mitigation measures and determination of the likely source of the impact. Should no effect be detected it may demonstrate a lack of effect, success of mitigation measures or the requirement to continue monitoring over a longer period of time.

Data from the monitoring for comparison against baseline and all previous monitoring efforts to identify trends in condition and make inferences on the success of implemented mitigation measures.

8 ORGANISATIONAL CAPACITY AND COMPETENCY

8.1 Roles and Responsibilities

The ESMS' will require competent personnel to ensure effective implementation in practice.

8.1.1 Project Company (Accountable Party)

It is recommended that the Project Company specifies a staff member who will have overall accountability for environmental and social management, compliance and implementation of related Project Company policies.

This is required at the Project Company level, as the project company is the ultimate permit holder and party that is accountable for the Project.

8.1.2 EPC Contractor / O&M Company (Responsible Party)

It is expected that the Project Company will contractually delineate responsibility for environmental & social management and compliance to the EPC Contractor/O&M Company for the respective project phases.

It is therefore expected that the EPC Contractor and O&M Company will specify certain roles and responsibilities for ESMS implementation to Project staff, as recommended below.

PROJECT MANAGEMENT

In order to effectively implement the Project ESMS, management will need to:

- Ensure that resources needed for the implementation of the ESMS are available (human and financial resources);
- Communicate the importance of effective environmental & social management for all those involved in the day-to-day management of the Project;
- Direct and support employees to contribute towards the effective implementation of the ESMS;
- Ensure appropriate lines of communication on environmental and social issues, including providing of any required data to statutory bodies and lenders; and
- Ensure regular performance monitoring (such as inspections and audits) and review of the ESMS are undertaken to ensure that it remains appropriate to the purpose and context of the project, and that any change of direct and indirect impacts is identified and managed accordingly.

RESPONSIBLE PERSON FOR ENVIRONMENTAL & SOCIAL MANAGEMENT

The EPC Contractor and O&M Company will need to delegate responsibility for implementation of the ESMS and wider environmental and social management and compliance to a full-time member of staff at the Project site.

This person may be the HSE Manager or the Environmental and Safety Manager, a member of the HSSE Team or a specific Environmental & Safety Officer. Regardless of the 'title' of this role, this person will be the primary project contact beneath the Project Company to implement the ESMS and will report to management, who will further report to the Project Company.

It is expected that such a role will be filled by a competent person with ideally 10 years of experience in the environmental & social fields, including at least 3-years of site-based experience.

A guide for the applicable Environmental & Social responsibilities of this role are listed below:

- Implement and manage the ESMS;
- Oversee and ensure execution of the environmental and social management programmes by other project parties;
- Monitor the workplace to ensure environmental and social compliance (including for sub-contractors and supplier- as per the scope of the ESMS);
- Liaise with regulators and/or other authorities on environmental & social matters;
- Advise management on matters pertaining to the environmental and/or social elements;
- Investigate environmental and social issues, incidents and non-conformances, implement corrective actions and report those to the management/relevant authorities;
- Maintain applicable environmental and social records as required by the ESMS (e.g. incident registers, NCR reports, corrective action reports, grievance register etc.);
- Ensure monitoring programmes are implemented by qualified personnel and report the results to the Project management for review and as a basis for continuous improvement;
- Be responsible for communications regarding environmental and social reporting and any third-party audits (e.g. periodic monitoring as required by the projects lenders);
- Display and monitor site bulletin boards to ensure they remain 'live' and 'up-to-date' with relevant environmental & social information;
- Coordinate, plan, formulate and/or deliver environmental and social induction training to all project personnel (including subcontractors) as well as regular toolbox talk environmental training sessions;

- Organise programmes and activities to promote environmentally responsible conduct in the prevention of injury, ill health and environmental impact throughout the workforce;
- Manage the external grievance mechanism, and address inquiries, complaints and other communications received via this mechanism;
- Stop any unsafe activity which is not compliant with environmental legislation or lender requirements, and correct such work practice and/or conditions before allowing work to resume/commence;
- Act as point of contact for any sub-contractor with regard to environmental issues;
- Ensure that each sub-contractor is aware, compliant and implementing the requirements of the ESMPs;
- Review subcontractor's personnel, qualifications, competency and environmental performance; and
- Undertake regular internal ESMS audits to assess compliance and implement corrective & preventative actions – audits are to include all sub-contractors at the project.

ASSISTANT FOR ENVIRONMENTAL & SOCIAL MANAGEMENT

The Assistant to the 'Responsible Person for Environmental & Social Management' will be the second level project personnel (during construction and operation) to implement the ESMS and will report to the responsible manager. It is expected that such a role will be filled by a competent person with relevant qualifications and at least 5 years of experience in the environmental & social field, including at least 2-years of site-based experience.

A guide for the responsibilities of this role are listed below:

- Ensure implementation of requirements and mitigation measures of the ESMS management programmes at all times;
- Implement monitoring programmes as per the applicable Environmental & Social Monitoring Plan and report the results to the responsible E&S manager;
- Supervise and ensure personnel and subcontractors comply and adhere to environmental regulations and lender requirements;
- Conduct daily and weekly site inspections and report the outcomes to the responsible manager including information on: sub-contractors on site, observations, non-compliances, environmental incidents, spills, leaks and volumes, internal and external grievances, emergencies, training conducted and number of staff trained and monitoring records;
- Accountable for the overall environmental and social performance of personnel and sub-contractors and working under their charge and supervision;
- Investigate environmental incidents and communicate the investigation results and proposed corrective action to the responsible person;

- Attend E&S meetings to contribute to a safe and healthy working environment.
- Support the responsible E&S person in delivering environmental and social induction training to all Project personnel (including subcontractors) as well as regular toolbox talk environmental training sessions;
- Check and ensure that the workforce is allocated and provided with adequate training, information and instruction to competently perform work in a safe and controlled manner – specifically in regard to method statement and the required plans and procedures; and
- Stop any activity which is not compliant with environmental legislation or project environmental and social requirements and rectify non-compliance environmental and social conditions promptly.

8.2 Environmental & Social Awareness and Training

In order for environmental and social control measures to be effective, staff will need to be aware of specific responsibilities and required actions associated with their element of work.

Tailored training requirements relevant to elements of works will need to be developed and defined as part of the ESMS (i.e. site personnel associated with waste management should require training on relevant components of the waste management plan).

For a training programme to be successful, it is vital to:

- Select a trainer with appropriate knowledge, skills and experience (often peer-level training is effective);
- Make training specific to the audience;
- Ensure training is engaging and relevant; and
- Follow up and refresh training to keep abreast of changes in site conditions.

In order to record identified training needs, training type and frequency required for each staff role, commensurate with the requirements of the ESMS, should be identified. Records of associated training should be held to include the following.

- Description of training;
- Purpose of training;
- Date;
- Location;
- Attendee; and
- Trainer.

8.2.1 Induction and Orientation

The Contractor (EPC and O&M Company) must ensure that all their employees and subcontractors working on the site are provided with induction and regular training, as frequently as necessary to achieve a level of awareness and competence appropriate to their assigned tasks before they commence their tasks.

All Contractor employees and Subcontractors must be made aware of the regulatory requirements and must be inducted into the requirements of the CESMP, CoESMP and OESMP accordingly. All Contractor employees and Subcontractors must also be made aware that each worker is responsible to make certain that their site activities do not cause pollution to the air, land, or groundwater.

The CESMP, CoESMP and OESMP should identify the necessary Environmental and Social requirements to be covered by site induction. This will include as a minimum:

- Environmental emergency response procedures (e.g. in the event of an explosion or fire; procedures to undertake in the case of oil or chemical spills);
- Key Occupational Health & Safety training and information regarding internal incident and emergency response processes;
- The environmental controls chosen to be implemented by the Contractor;
- Raising awareness for any activities that are known to have the potential to be hazardous to the environment, and how to avoid such hazards;
- Reporting procedures listed in the ESMP (in case of an environmental incident or complaint), and appropriate contact telephone numbers;
- Site-specific issues such as site boundaries, location of waste and recycling bins, refuelling and vehicle maintenance points, storage of plant and equipment;
- The proximity or sensitivity of nearby residents and communities to the Project;
- Cultural awareness training to prevent any conflicts with the local communities;
- Internal grievance procedures and allowances for worker welfare;
- Site monitoring plans; and
- The outcomes and penalties of inappropriate environmental behaviour.

8.2.2 Toolbox Talks

Toolbox talks are a useful way of providing on-site training to disseminate good practice and provide regular reminders on induction and training content. It is recommended that toolbox talks are held regularly for site personnel and supervisory staff.

Required toolbox talks topics and frequencies should be identified within associated risk assessments, method statements plan or procedures.

As a minimum, the toolbox talks will cover relevant updates on health, safety and environmental topics including waste management and waste segregation procedures; correct storage of fuels, oils and chemicals and spill response procedures etc. Employees will also learn how to minimise all potential environmental impacts including noise, air and water pollution, waste minimisation and disposal, and other environmental controls specific to the work activity. The toolbox talks will also include code of conduct to prevent & respond to Gender Based Violence issues (Sexual Exploitation and Abuse/Sexual harassment).

A register stating the topic of training or induction conducted, with the employees' names and the dates of training and induction and trained details, must be kept up to date at the worksite office to ensure that all staff on the site have had the required training.

9 AUDIT PROGRAMME

Auditing is an integral requirement of any management system and should be considered as a continual process to ensure the successful implementation of the ESMS.

9.1 Internal Audits

The ESMS will need to establish, implement and maintain an internal audit programme that identifies the frequency, methods, responsibilities, planning requirements and reporting of audits and inspections.

When establishing an audit and inspection programme, the organisation should consider the potential frequency and significance of environmental and social risks relative to the construction and operational phase and adjust the audit scope and frequency accordingly.

When developing and undertaking audits the following will need to be established:

- Define scope, audit criteria and the objectives of each audit;
- Select audit staff competent in the audit process and subject matter; and
- Ensure that audit results are reported to relevant senior management.

The frequency of audits will be undertaken on a level commensurate to the risks and impacts of the Project, whilst the frequency will be subject to review according to the identified level of compliance and anticipated risks attributable to specific construction and commissioning stage/activities.

During operations, the frequency shall be bi-annual as a minimum (depending on risks attributable to specific operational activities), and the audit criteria may also vary depending on any external certification that may be linked to the ESMS.

9.2 ACWA Power Corporate Audits

It is expected that the ACWA Power corporate HSSE team will audit the Project's management system on an annual basis as a minimum.

9.3 Lenders Monitoring and Reporting

Monitoring requirements will be established with the lenders and monitoring reports will be provided and reported to the lenders. These reports are likely to be based upon site visits to evaluate the implementation of both the ESAP (a covenant to the loan), and the suitability & effective of the established ESMS in practice.

10 EMERGENCY PREPAREDNESS AND RESPONSE

The likelihood of an E&S incident can be minimised by effective risk management planning and development of applicable response plans as part of an ESMS.

All risk assessments and method statements will need to include consideration of the potential for environmental incidents. Suitable incident response equipment, should be maintained at appropriate locations on site and Project staff be suitably trained to use such equipment and respond to such emergencies.

The Project will prepare and implement an Emergency Preparedness and Response Plan to include requirements for co-ordination with the applicable external agencies (i.e. emergency services), impacted stakeholders and statutory authorities in the instance that a pollution incident occurs.

The plan will identify procedures for reasonably foreseeable emergency situations. As per the ACWA Power HSSE Management System Framework, this is required to include drills at the Project site and any relevant training to specifically involved personnel.

When establishing the Emergency Preparedness and Response Plan, the following should be considered:

- The most appropriate method for responding to an emergency situation;
- Internal and external communication process;
- The action required to prevent or mitigate environmental impacts;
- Mitigation and response actions to be taken for different types of emergency situations;
- The need for post-emergency evaluation to determine and implement corrective and preventative actions;
- Periodic testing of planned emergency response actions;
- Training of emergency response;
- A list of key personnel and aid agencies, including contact details (such as fire department, spillage clean-up services);
- Evacuations routes and assembly points; and
- The possibility of the need for mutual assistance from neighbouring organisations/projects.

10.1 Incidents

Incident investigation and analysis will need to be undertaken in co-ordination with the provision of Element 10 established in the ACWA Power HSSE Management System Framework.

In summary, this requires clear processes for incident reporting, response, investigation, analysis, follow up and documentation

11 NON-CONFORMITY AND CORRECTIVE ACTION

All non-conformances identified during audits, inspections and monitoring activities should be recorded and followed up as non-conformity.

Non-conformances are instances where Project compliance obligations (such as a legal requirement, or ESMS requirement) are not being fulfilled, or cannot be evidenced. Examples of non-conformity include, but are not limited to:

- Breach of an environmental standard;
- Commencement of works without an approved risk assessment and method statement that covers environmental issues identified herein;
- No review of risk assessment and method statements following any significant changes in requirements that could adversely impact the environment;
- Appointment of a waste transport/disposal service provider that is not appropriately licensed;
- Failure to comply with waste storage/disposal requirements as identified by risk assessment and/or method statement;
- Failure to comply with chemical storage and/or handling requirements;
- Un-containable or uncontrollable spills of fuels or chemicals;
- Undertaken works outside the scope defined within the risk assessment and method statement; and,
- Discharge of untreated, contaminated waste water to the environment.

Each non-conformance and near miss will be recorded utilising a developed reporting process. All NCRs and near misses shall include the following information:

- Location and description of the non-conformance and the criteria/requirement that has been breached;
- The proposed corrective action including who holds responsibility for undertaking this action;
- The proposed preventative action to ensure against reoccurrence of the non-compliance;
- Any required monitoring and follow up; and
- Key performance indicators and a deadline for the successful completion of the corrective and preventive action.

11.1 Corrective Action

Any situation or condition that is non-conforming or otherwise poses an imminent risk to the environment, or social welfare should be immediately resolved.

It is expected that a corrective action plan will be developed to respond to individual NCRs. The corrective action plan shall include determination of root cause, proposed actions, timelines, required resources and any changes needed to ESMS documentation. The corrective action plan should be approved by a responsible person for managing the ESMS.

Records of implemented corrective actions shall also be maintained.

If a situation or condition cannot be corrected immediately, temporary measures such as necessary for the protection of the environment should be implemented.

12 STAKEHOLDER ENGAGEMENT

The project has developed a SEP, which will be implemented during both construction, commissioning and operations. This will also need to be updated and made applicable prior to the operational phase. The SEP includes a suitable grievance mechanism to allow local community complaints to be raised in a clear process.

Note: All processes relating to Stakeholder Engagement should refer to the Project Specific Stakeholder Engagement Plan (SEP).

Stakeholder engagement can be described as a systematic effort to understand and involve stakeholders and their concerns in the Project activities and decision-making processes. Stakeholders are defined as any group or individual who can affect, or can be affected by, the Project.

The main objectives for stakeholder engagement are:

- To inform the relevant stakeholders about the Project;
- To capture views and concerns of the relevant stakeholders with regard to the project;
- To enhance ownership of the project within the host community;
- To provide a basis for stakeholder participation in impact identification and mitigation.

For Projects that have environmental and social impacts, consultation is not a single conversation but a series of opportunities to create understanding about the Project among those that are likely to be affected or might have an interest in it, and to learn how these stakeholders view the project and its related risks, impacts, opportunities, and mitigation measures. Listening to stakeholder concerns and feedback can be a valuable source of information to help identify environmental and social risks (real and perceived) and improve project management.

12.1 Grievance Mechanism

12.1.1 Internal Grievances

The SEP includes a grievance procedure for workers to raise workplace concerns. The procedure includes an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism allows for anonymous complaints to be raised and addressed.

The grievance mechanism must not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

All staff will need to be informed of the grievance procedure during their induction to the project and the procedure will be made readily available and easily accessible.

12.1.2 External (Third-Party) Grievances

The SEP also includes a procedure for external grievances that establishes methods to receive and register communications from external stakeholders (Project Affected Persons and Interest based stakeholders). This includes:

- A method to screen and assess the issues raised and determine how to address them;
- A method to provide, track, and document responses, if any; and
- A method to adjust the ESMS management program, as appropriate, in response to external grievances.

The grievance procedure shall be reviewed and updated (as applicable) to ensure it remains scaled to the risks and adverse impacts of the project and include consideration of any affected stakeholders.A

It must seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies.

13 COMMUNICATION

The ESMS will establish, implement and maintain processes needed for internal and external communication relevant to environmental and social performance of the Project.

Lines of communication relevant to the construction phase will be clearly defined within the CESMP and CoESMP whilst lines of communication relevant to the operational phase will be clearly defined within the OESMP.

Associated processes will establish:

- What will be communicated
- When it will be communicated
- With whom to communicate
- How to communicate

When establishing communication processes relevant to the ESMS, particular note will be made to

- Compliance obligations, including any reporting requirements to the statutory environmental authority
- Reporting requirements required by the Project lenders.

14 DATA MANAGEMENT AND RECORD KEEPING

The implementation of the ESMS will generate data, that will be required to be managed. The appropriate management of records is a requirement of any successful ESMS and can be used to track progress, review effectiveness and demonstrate compliance.

The ESMS relevant to both the construction, commissioning and operational phases should include the collation of the records including (but not limited to) the following:

- Environmental and Social induction and training records;
- Relevant records of competence/qualifications;
- Accident Investigation Reports;
- Grievance register;
- Internal Audits reports (including close - out);
- Non-Conformance Reports;
- Incident Reports;
- Environmental & Social Inspection & Audit Reports (including corrective action reports);
- Environmental & Social Monitoring Results;
- Waste Manifest Forms and Chain of Custodies;
- Environmental & Social Risk Assessments and Method statements;
- Equipment & Social Inspections/Certifications;
- Independent Audit Reports for Lenders (including corrective action reports); and
- Emergency events.

Such records will need to be included on the ESMS register and updated as applicable.

15 REVIEW

The ESMS should be regularly reviewed according to changes in construction, commissioning or operational activities and in response to results from monitoring, audits and inspection.

Reviews should be undertaken at a frequency to ensure adequacy of the ESMS and to ensure that all potentially significant adverse impacts are identified and that associated control measures are appropriate to the Project.