

DEWA Mohammed Bin Rashid Al
Maktoum Solar Park – Phase V
900MW Solar PV IPP
Dubai, UAE



Environmental and Social
Impact Assessment (ESIA)
**Volume 3 – Framework for
Environmental and Social
Management**

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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
CESMP	Construction Environmental and Social Management Plan
CSR	Corporate Social Responsibility
DM	Dubai Municipality
EPAP	Equator Principles Action Plan
EPC	Engineering, Procurement and Construction
ESAP	Environmental & Social Action Plan
ESIA	Environmental & Social Impact Assessment
ESMS	Environmental and Social Management System
ESMP	Environmental & Social Management Plan
HSSE	Health, Safety Security and Environment
OESMP	Operational 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 ESIA Volume 2 for the DEWA Mohamed Bin Rashid Al Maktoum Solar Park – Phase V: 900MW Solar PV IPP 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 and operational phases of the Project. The Framework is intended to outline systematic structures and management programmes that will comprise the respective construction and operational phase Environmental and Social Management Systems (ESMS).

To implement the mitigation and management measures established in the ESIA (Volume 2), specific management programmes will be developed to incorporate these mechanisms, including the requirements of the UAE, the Emirate level regulator (Dubai Municipality) 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 before the commencement of construction 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 concerning 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 ESMS aims to provide a systematic structure to enable the effective implementation and management of environmental and 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 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 a project or activity-specific plans and procedures that incorporate the technical requirements presented in this document;
- Prioritising management programmes/ strategies to achieve 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.

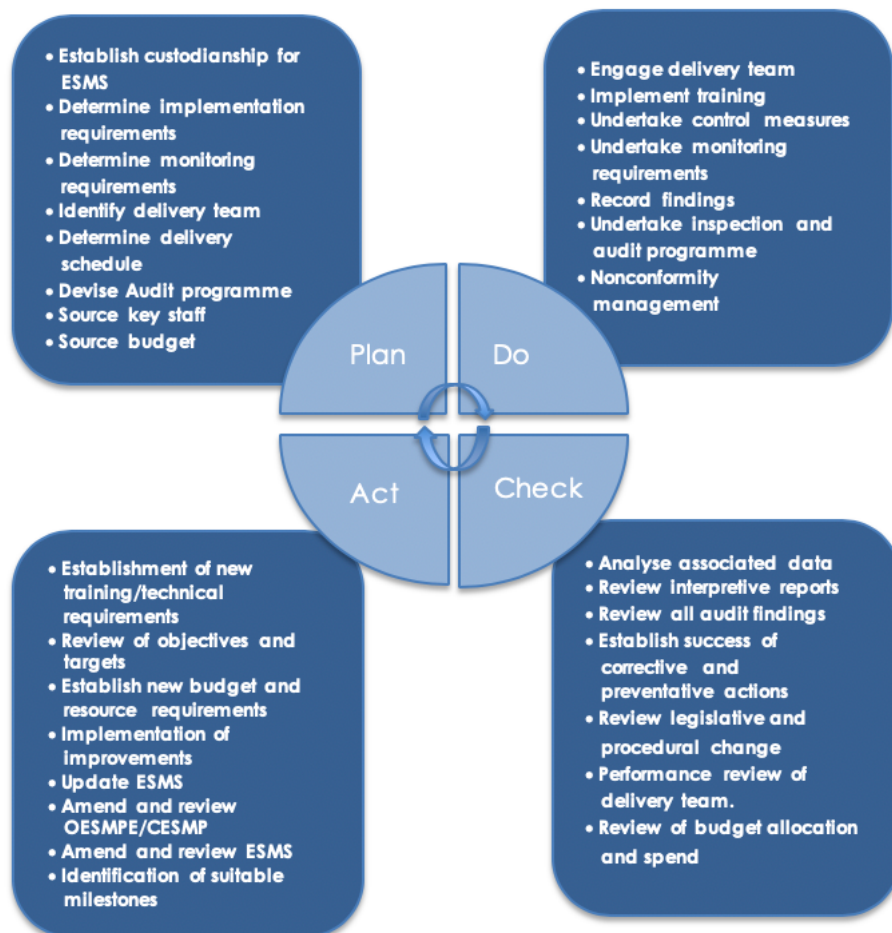
Initial implementation of the ESMS should focus on setting and reviewing requirements, determining custodianship within the project team, identifying budgets, establishing target ranges for performance and establishing appropriate data gathering techniques and controls.

Performance ranges should be refined regularly as more data becomes available, in turn enabling more accurate strategy development and benchmarking.

The ESMS documents must be 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 ESMS for the respective construction and operational phases. The scope will need to include:

- Applicable activities and timescales for construction/operation;
- Compliance with applicable national regulation, lender requirements and loan covenants;
- Detailed mitigation and management measures required following construction 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 associated facilities [such as the grid connection and access road], including temporary facilities for construction, other laydowns/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 EPC Contractor).

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

2.4 Development of Operational Phase ESMS

The operational phase ESMS will be developed and implemented by the Operational and Maintenance Company (O&M Company) and will cover all potential environmental and social risks, impacts, opportunities and related 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 is supplementary to, and will be defined by the OESMP.

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 concerning HSSE issues, and what should be implemented by Project Companies. The framework intends 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
- Element10 – 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 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 adopted 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 Project Company, EPC Contractor and O&M Company will have established Project policies that will provide the overarching direction for environmental & social management during construction and operations respectively.

Notwithstanding any policies that may be established, the Project level 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 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 the 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 a safe and healthy workplace environment;
 - Ensure fair and just remuneration following employment law and agreed contracts; and
 - Vehemently condemn and ensure against forced or compulsory labour, child labour or discrimination.
- Be available in English and other appropriate languages (in the geography of the Project (i.e. Arabic), or for relevant stakeholders) for all personnel and visitors to understand.

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- Include a commitment to continual improvement of the Environment and Social Management System.

During the construction and operational phases, the policy should be established and signed by top management, appended to the CESMP/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:

- National Legislation and Regulations; and
- International Treaties and Conventions.

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 and operational phase of the project. Assuming approval of the ESIA by the project lenders (note: the Environmental Clearance from DM is already in place for the wider solar park), these stated measures are conditions of the loan (and EC issuance).

4.3 Identification of Requirements from Dubai Municipality

The environmental clearance conditions issued for the wider solar park EIA submission (and updates to the EIA for EC extension by DM) must be reviewed to ensure that all construction and operational related conditions established are managed accordingly. Non-compliance with the clearance/permit/approval conditions may result in a breach of legislation and permitting requirements.

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 ESMS', the lender's 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 lender's 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 following 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 emergencies;
- 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 projects 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 the project or environmental & social circumstances change.

6 MANAGEMENT PROGRAMMES

6.1 Environmental & Social Management Plan (ESMP)

The construction/operational phase ESMP will be the key plan driving environmental & social management at the Project.

Mitigation and Management Measures

Construction and Operational phase requirements established in the ESIA and how they are to be implemented must be included within the CESMP and OESMP for the project and fed into any other applicable plans and procedures.

The EC for the wider solar park has been issued by DM and its extension has since been approved on several occasions. As a condition of the EC, all mitigation and management measures specified in the EIA are required for implementation at the construction and operational phases respectively; as per the statutory requirements. These measures are also mirrored in this ESIA for consistency with local regulatory clearance requirements.

The respective environmental and social assessment sections within Volume 2 of the ESIA has identified these associated mitigation and management requirements for the project.

6.1.1 Construction Environmental & Social Management Plan (CESMP)

The Construction Environmental & Social Management Plan (CESMP) will be the overarching, principal document that identifies scope, objectives, risks, responsibilities, desired outcomes and associated monitoring requirements of the ESMS associated with the construction phase of the project.

6.1.2 Operational Environmental & Social Management Plan (OESMP)

The Operational Environmental Management Plan (OESMP) will be the overarching, principal document that identifies scope, objectives, risks, responsibilities, desired outcomes and associated monitoring requirements of the ESMS associated with the operational phase of the project.

6.2 Complimentary Management Plans and Procedures

The CESMP and OESMP will also clearly define the associated plans and procedures required to manage other significant environmental and social risks/impacts.

6.2.1 ESIA Required Plans and Procedures

Requirements for other complimentary plans & procedures (besides the CESMP and OESMP) are based on the mitigation and management measures stated in the ESIA. These are set out below and include some key content requirements for each plan. The final content of each plan will need to relate to specific EPC and O&M working methodologies, responsibilities and site activities. Some of these may be incorporated/attached to the CESMP and/or OESMP.

Table 6-1 ESIA Required Plans and Procedures

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
Waste & Wastewater Management Plan	Construction & 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 & Operation	Identify the required controls for worker health and safety during the construction and operational phases. As a minimum, this plan shall include: • 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.
Stakeholder Engagement Plan (SEP)	Construction & 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.
Grievance Mechanism	Construction & 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.

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
		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 concerning the grievance mechanism and the procedure for responding to received grievances, including the timeline for a response, engagement mechanisms and record keeping.
Traffic Management Plan	Construction	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. Deliveries will be guided by a Traffic Management Plan.
Hazardous Material Storage and Handling Procedure	Construction & Operation	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 custody, requirements for MSDS and roles and 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). 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.
Pest Management Plan	Construction & Operation	To outline potential pests that are encountered locally and the methods in place to manage them, including details of service providers for pest management, as well as methods used to deter pests. Any specific protection, training requirements or communications to staff regarding methods used in the plan must also be outlined.
Emergency Preparedness and Response Plan	Construction & Operation	To identify the contingencies put in place for a variety of reasonably foreseeable emergencies relevant to the construction or operational phases. The plans should outline the response mechanisms, roles and responsibilities, training requirements, internal communication, equipment and relevant engagement with external stakeholders. Requirements for on-site equipment shall be established based upon the potential emergency risks, including training provisions for site personnel regarding such equipment. This plan is to include spill response and contingency in the event of accidental leaks and spills.
Security Plan	Construction & Operation	The security plan should be based on a security risk assessment of the reasonably foreseeable security risks

PLAN / PROCEDURE	PROJECT PHASE	PURPOSE AND KEY REQUIREMENTS
		(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. Any use of firearms in the plan should be avoided, where possible.
Biodiversity Action Plan	Construction & Operation	Due to the need to translocate flora and fauna off the site during the construction phase, it is important that this process, as well as future monitoring of survivability and health is undertaken. The BAP is also a requirement of DM-NRCS for submission and must be implemented in co-ordination with them, as well as submitting monitoring reports based on the implementation of the BAP.
Chance Finds Procedure	Construction	To identify the process for identifying and responding to a potential find of archaeology in the construction working area. It shall include the process for halting works in that area, sectioning off the potential artefact and external communication with the applicable UAE cultural authorities.
Environmental and Social Monitoring Plan	Construction & Operation	Monitoring is required to demonstrate compliance with Federal 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: • 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).
Working Conditions and Terms of Employment Procedure	Construction & Operation	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.
Human Resources and Policies Procedures	Construction & Operation	Human resource policies and procedures will be adapted appropriately 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 IFC Performance Standard 2.

6.2.2 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 & 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 regarding the plan. The plan should include provisions for the recording of any incidents in a separate register, to ensure closeout and implementation of corrective and preventative actions.
Environmental & Social Training Plan	Construction & 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.
Site Inspection & Audit Plan & Procedure	Construction & Operation	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). To detail the methodology of such inspections and audits to ensure Environmental and Social Issues required in Oman and required by project lenders are adequately covered. 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. 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 periods for action and the implementation of corrective and/or preventative measures. The process to engage with the external independent lender's auditors should also be listed and linked with the SEP as appropriate.

7 MONITORING

Environmental monitoring is required during both construction and operation to evaluate whether the project complies with the applicable UAE, Dubai regulations/standards and applicable lender requirements.

7.1 Monitoring Requirements from the ESIA

The specific Environmental & Social Monitoring Plan to be developed for construction 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 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;

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- 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 ultimate party that is accountable for the Project.

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

It is intended 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 HSSE/HSE Manager, a member of the HSSE Team or a specific Environmental & Social Engineer. 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 CESMP and OESMP should identify the necessary Environmental and Social requirements to be covered by site induction. This will include as a minimum:

- Key Occupational Health & Safety training and information regarding internal incident and emergency response processes;
- Raising awareness for any significant risks and impacts associated with the project;
- Any valuable resources or protection measures that need to be considered by all staff;
- The proximity or sensitivity of nearby residents and communities to the project; and
- Internal grievance procedures and allowances for worker welfare.

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, plans or procedures.

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 party 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 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 & effectiveness 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 Marine 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

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.

The Project has developed a Stakeholder Engagement Plan (SEP), which will be implemented during construction and operations. The SEP includes a suitable grievance mechanism to allow community complaints to be raised in a clear process.

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

12.1 Grievance Mechanism

12.1.1 Internal Grievances

The SEP includes an internal process for grievances and workplace concerns to be raised. The procedure should involve 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 should also allow for anonymous complaints to be raised and addressed.

The grievance mechanism will 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 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. 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 is scaled to the risks and adverse impacts of the project and include consideration of any affected stakeholders.

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 should 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 should be clearly defined within the CESMP whilst lines of communication relevant to the operation phase should be clearly defined within the OESMP.

Associated processes should establish:

- What should be communicated;
- When it should be communicated;
- With whom to communicate; and
- How to communicate.

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

- Compliance obligations, including any reporting requirements to the statutory environmental authority; and
- 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 evidence compliance.

The ESMS relevant to both the construction 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 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.