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1 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Background

Al Husainiyah Power Generation (hereafter referred to as ‘the Developer’) has been selected by the Ministry of Energy and Mineral Resources (MEMR) for the development of a 50 Mega Watt (MW) Solar PV Power project (hereafter referred to as ‘the Project’).

The Project is located within Ma’an Governorate in the south of Jordan approximately 170km south of the capital city of Amman. More specifically, the closest organized boundaries and community settlements to the Project site include the following:

- Al-Mohamadiyah which located around 5km to the west and which is administratively under Athroh Sub-district, and from a municipal perspective is under Al-Asha’ri Municipality;
- Hashmiyeh which is located around 10km to the northwest and Husainiyah which is located around 20km to the northwest, both of which administratively are under the District of Husainiyah and from a municipal perspective are under Husainiyah Municipality; and
- Jafer which is located around 30km to the east and which is administratively under Jafer Sub-district and from a municipal perspective under Jafer Municipality.

In addition, the Project is located around 5km to the east of Highway #15 (also known as the Desert Highway), which is the main highway in Jordan that connects the capital city of Amman with southern governorates (including Ma’an Governorate). The total Project area is around 1.4km².

The Project area is located within the premises of the “Mohamadiyah Development Project” that is owned by the Hashemite Fund for Development of Jordan Badia (HFDJB). The “Mohamadiyah Development Project” extends over an area of 50km² consisting of several development projects. The Developer has secured a Land Lease Agreement (LLA) with the Government of Jordan for development of the Project within 1.4km² of the “Mohamadiyah Development Project” area as presented in the figure below.

Al Husainiyah Power Generation has undertaken a comprehensive Environmental and Social Impact Assessment (ESIA) for the development of the Project. The ESIA was undertaken in accordance with the Jordanian “Environmental Impact Assessment Regulation No. (37) of 2005” as well as good international industry practice and standards – this includes mainly the International Finance Corporation’s (IFC) Environmental & Social Sustainability Performance Standards and EHS Guidelines. The ESIA has been approved by the Ministry of Environment (MoEnv) and an environmental permit has been granted for the Project in August 2018.

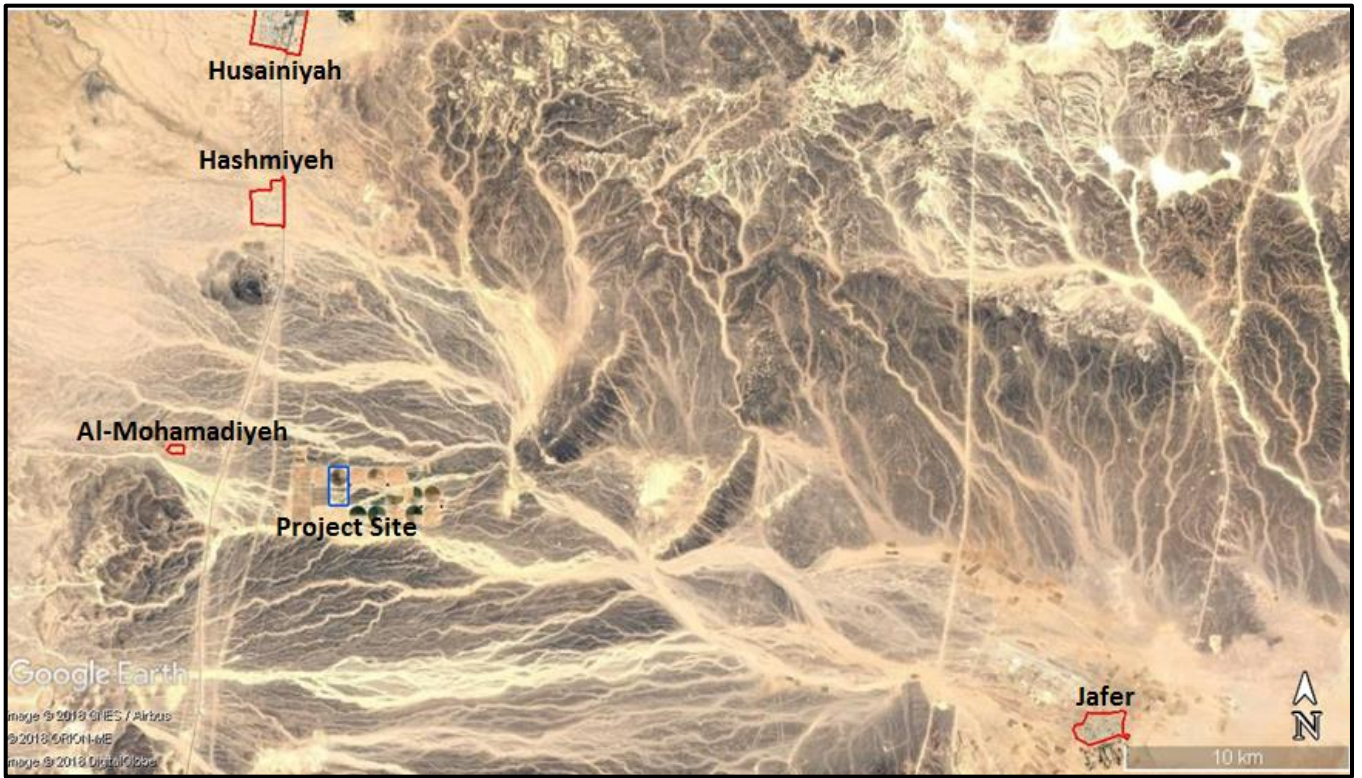


Figure 1: Project Site Location

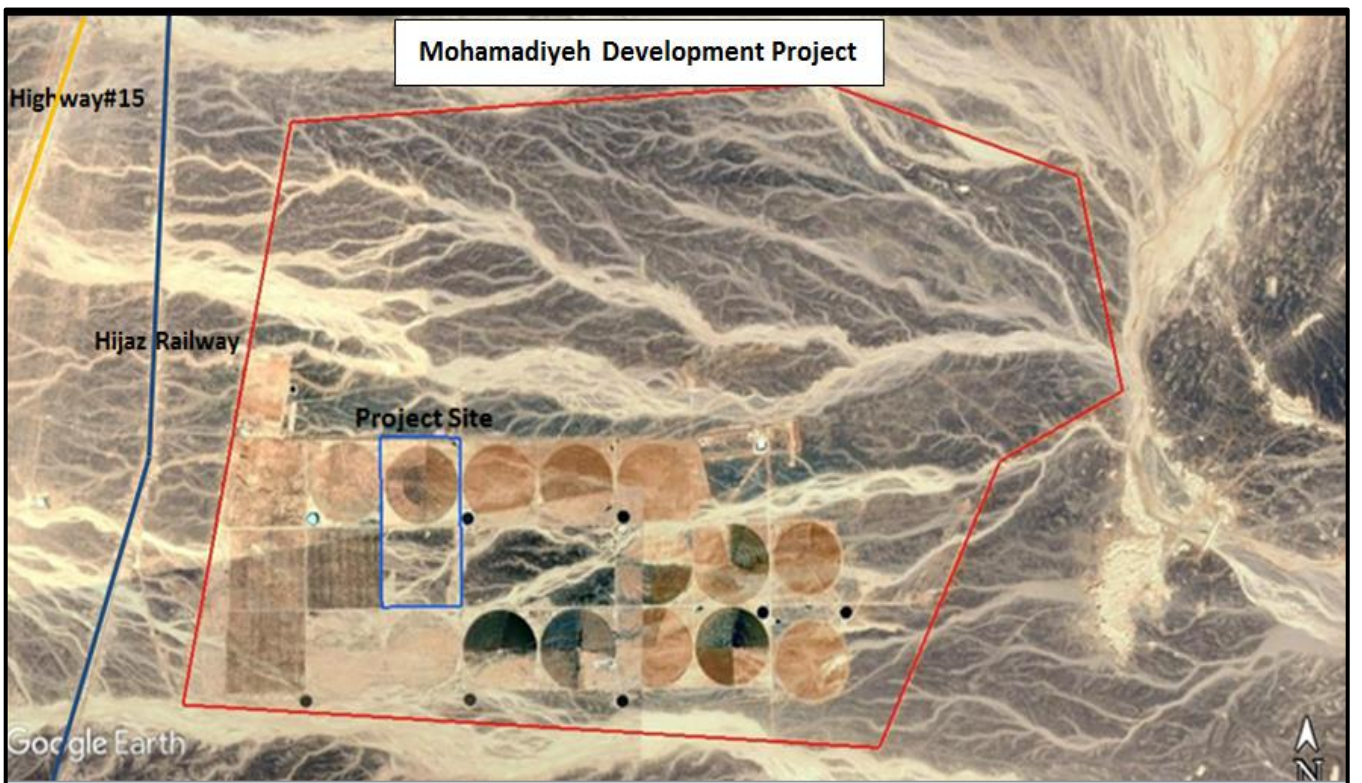


Figure 2: Project Location within the HFDJB Area

1.2 Project Components

The table below provides a summary of Project components that are discussed below in detail.

Table 1: Summary of Key Project Components

Component	Description
Project Nominal Capacity	50 MW (at AC current)
Technology Type	PV
PV Cell Type	Polycrystalline Silicon
PV Module Dimensions	1960 x 991 x 40 mm
Infrastructure and Utilities	Underground cables, central inverter stations, substation, warehouse and office, water reservoirs

1.2.1 PV Power Arrays

The Project will be divided into respective zones, where each zone will be composed of PV Power arrays (typical structure of power arrays is presented in the figure below). Each array consists of the following components:

- PV panels: each array is made of PV panels. For this Project each panel will have a capacity of 330Wp. Each panel is of 1,960mm length, 991mm width, 40mm thickness, and weighs around 22kg. The panel requires protection from the environment and is usually packaged tightly behind a 3mm glass sheet which has an Anti-Reflective Coating (ARC) layer to capture maximum sunlight and to minimize reflections. The panel is a polycrystalline solar module technology which utilizes silicon as a semiconductor material for generation of electricity. Silicon is considered a non-hazardous material;
- Each array is equipped with a single-axis beam tracker which carries the array and orients it towards the sun throughout the day to maximize the amount of energy produced.



Figure 3: Typical Power Arrays Composed of PV Panels

1.2.2 Infrastructure and Utilities

- Each of the zones will be connected to a central inverter station through underground cables. The total number of central inverter stations within the Project site will be 30. The inverter station converts the electricity produced from the panels from Direct Current (DC) to Alternating Current (AC).

- Each of the central inverter stations will then connect through underground cables to a substation that is located onsite. The substation converts the voltage from 33kV to 132kV that is appropriate for connection with the national grid (132kV).
- Building Infrastructure will mostly include offices for normal daily operational related work, as well as a warehouse for storage of equipment and machinery.
- Road network an internal road network for ease of access to the arrays for operation and maintenance purposes.
- Fencing around the entire facility and security will be required to ensure safety from criminal activity and trespassing of unauthorized personnel.
- Monitoring System: Provides information of the plant equipment performance for operation and maintenance.
- On-site water reservoirs are most likely to be utilized for the water requirements of the Project. Water will be used mainly for potable purposes as well as for the occasional cleaning of the panels to prevent dust build-up as this would affect their performance.

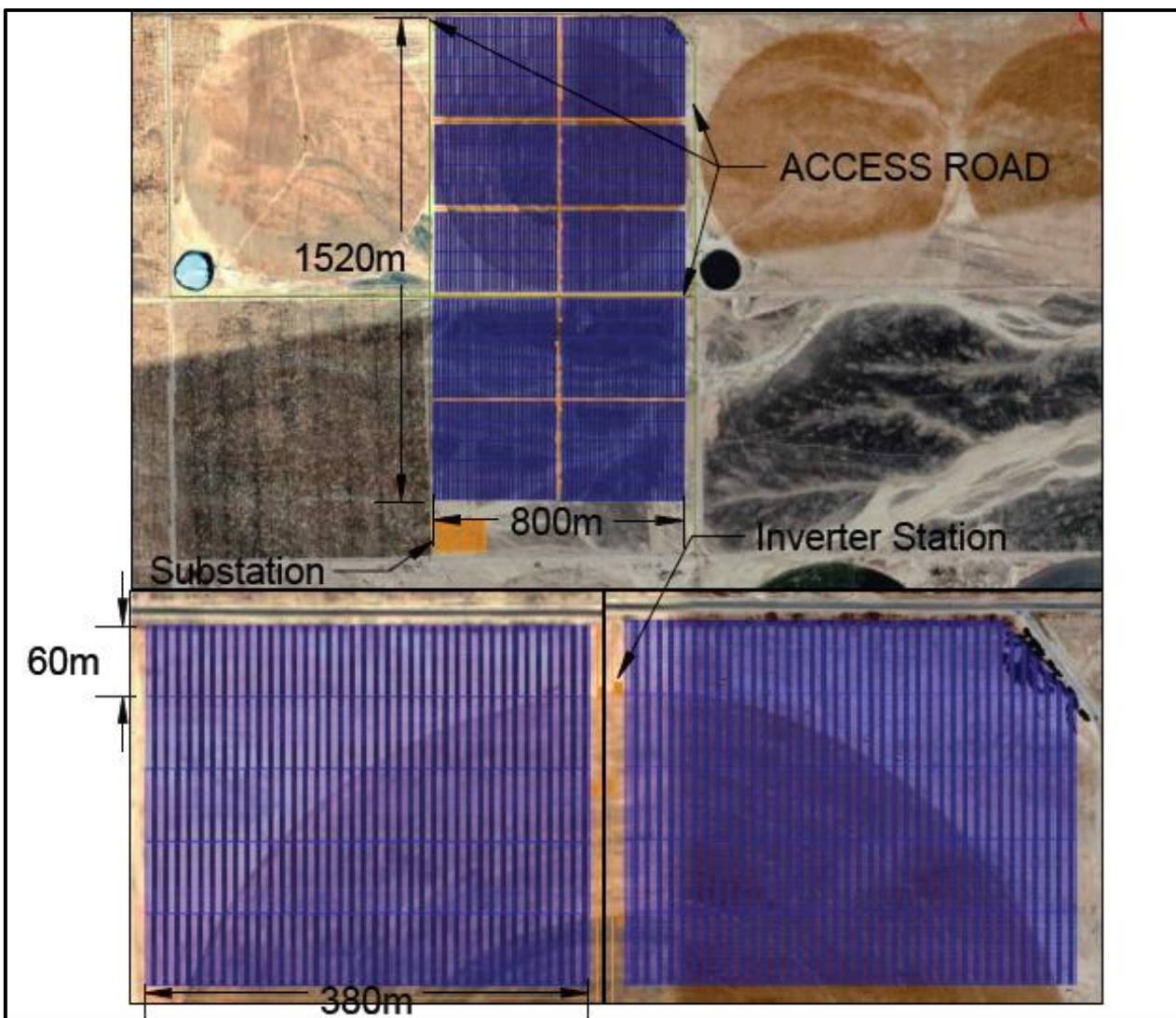


Figure 4: Preliminary Layout of Project Components

1.3 Overview of Construction Phase and Schedule

They key phases anticipated for the construction phase of the Project are summarized below.

- Phase 1: Engineering and Documentation

This involves obtaining the permits required for the project and undertaking studies for development (e.g. geotechnical, topography, etc.) as well as preparing the detailed design for all project components. Duration: July 2019 – April 2020.

- Phase 2: Procurement of Materials

This involves the procurement of all materials required for the project development to include those required for civil works (fence, water tanks, etc.), mechanical works (PV modules, mounting structures, tracker structures, etc.) and electrical works (cables, conduits, etc.). Duration: December 2019 – June 2020.

- Phase 3: Assigning of Subcontractors

This includes tendering and selection of all subcontractors for the Project to include civil, electrical and mechanical contractors. Duration: January 2019.

- Phase 4: Mobilization and Early Works

This includes undertaking all mobilization and early works to include fence installation, installation of site offices, preparation of laydown area, preparation of site storage and workshop area and other as appropriate. Duration: December 2019 – February 2019.

- Phase 5: Construction of PV Zones

As discussed earlier, the Project site will be divided into zones. Under this phase, this will involve all civil works (grading, foundations, drainage, etc.), mechanical works (mounting structure installation, PV modules installation, etc.), and electrical works (underground works, DC works, Low Voltage works, earthing and lightning protection, etc.) under each zone. Duration: February 2019 – November 2020.

- Phase 6: Construction of Substation

This includes the civil and electrical works for construction of the substation located onsite and which will include civil works (grading, foundations, drainage, etc.) and electrical works (AC works, Medium Voltage works, etc.). Duration: February 2019 – November 2020.

- Phase 7: Construction of Control Building and Warehouse

This includes the civil works, mechanical, and electrical works for construction of the control building and warehouse. Duration: February 2019 – July 2020.

- Phase 8: Testing and Commissioning

Commissioning tests involve standard electrical tests for the electrical infrastructure as well as the panels, and inspection of routine civil engineering quality records. Careful testing at this stage is vital if a good quality PV farm is to be delivered and maintained Duration: October 2020 – November 2020.

1.4 Involved entities

Different entities are involved in the construction phase of the project. Responsibilities of each entity are listed in the text below along with a general description of their roles.

- Al-Husainiyah Power Generation: Project Proponent and will be the owner and developer of the Project. Al-Husainiyah Power Generation is owned by Philadelphia Solar and AMEA power;
- German Investment Corporation (DEG) and Netherlands Development Finance Company (FMO): The Developer will be seeking financing for the Project from prospective lenders, including international Financial Institutions (IFIs). DEG and FMO will be the lenders for this Project;
- Sterling and Wilson: appointed as the EPC Contractor and will be responsible for preparing the detailed design and layout of the Project; supply of the material and equipment; construction of the Project and its various components (PV arrays, internal roads, building infrastructure, etc.);
- Subcontractors: this will involve subcontractors for civil, electrical and mechanical works on the project. Subcontractors have not been selected at this stage.

2 OBJECTIVE AND OVERALL STRUCTURE FOR EHSS MANAGEMENT

2.1 Objective

This document presents the Environment, Health, Safety and Social (EHSS) Manual that will be implemented for the construction phase of the Project by Al Husainiyah Power Generation. The objective of this EHSS Manual includes the following:

- Identification of the overall structure for the EHSS management that will be implemented for the Project by Al Husainiyah Power Generation;
- Identification of all environmental, health, safety and social impacts and risks anticipated throughout the construction phase of the project;
- Identification of appropriate procedures and management measures to handle each identified impact/risk to ensure it is eliminated or reduced to the greatest extent possible; and
- Identification of an institutional framework to ensure that such procedures and measures are implemented effectively and efficiently. This includes identification of roles and responsibilities, training requirements, monitoring and reporting requirements, and other as applicable.

2.2 EHSS Policy

Al Husainiyah Power Generation is committed to the protection of the environment and to the health and safety of its employees, contractors and the local community through all stages of the project life cycle.

To achieve this goal, Al Husainiyah Power Generation is committed to the following:

- Comply with all applicable national and local EHSS laws and regulations as well as permitting requirements;
- Meeting internationally-accepted industry best practices, requirements of the relevant International Financing Institutions (IFIs), applicable international standards, and Equator Principles III (2013);
- Assessing and minimizing potential impacts to the community and the environment;
- Establishing and maintaining an Environment, Health, Safety and Social (EHSS) Management System which identifies objectives and targets, risks and hazards, responsibilities, and includes systems of monitoring and reporting as well as incident and accident reporting and investigation;
- Realizing continual improvement in EHSS performance by developing indicators, through monitoring and auditing performance, and by implementing corrective actions where needed;

- Reporting externally on EHSS performance and encouraging dialogue with employees, local communities and other stakeholders to promote awareness;
- Setting and achieving targets that promote the efficient use of natural resources;
- Minimizing and managing all waste streams and where waste is generated ensure that it will be handled and disposed of safely and responsibly;
- The company is committed to recycling of the PV Panels at the end of life during the decommissioning phase of the Project taking into account the relevant local legal requirements and legislations. Noted that this will be integrated into Waste Management Plan for Operation Phase.
- Providing a place of work that is safe for everyone;
- Supporting and protecting internationally recognized human rights; and
- Ensuring that Al Husainiyah Power Generation, and its contractors, are made aware of this Policy and are adequately trained to manage the EHSS risks and impacts of their actions.

Al Husainiyah Power Generation will monitor and review this Policy on a regular basis to ensure that it continues to support and encourage a high standard of EHSS performance.

[insert name],

Al Husainiyah Power Generation

[insert date signed]

2.3 Overall Structure for EHSS Management System

This section identifies the overall structure for EHSS Management for the Project. The table below identifies the associated management plans that have been prepared by Al Husainiyah Power Generation and discusses the overall management approach for implementation of these management plans. Such associated management plans should be read in conjunction with this EHSS Manual.

The EHSS Manual along with the associated management plans identified are collectively considered the EHSS Management System that will be implemented for the construction phase of the Project.

Table 2: EHSS Management Plan Prepared by Al Husainiyah Power Generation

Reference #	Document	Overall Management Approach
N/A	Environmental and Social Impact Assessment (ESIA)	Environmental and Social Management Plan (ESMP) is the key outcome of the ESIA. ESMP requirements are to be implemented by Al Husainiyah Power Generation and EPC Contractor as applicable. Relevant requirements of the ESMP are to be included within the relevant management plans discussed throughout this section.
N/A	Stakeholder Engagement Plan (SEP)	To be implemented by Al Husainiyah Power Generation
REF#0	EHSS Manual	To be implemented by Al Husainiyah Power Generation

REF#1	HR Policy and Procedure	To be implemented by Al Husainiyah Power Generation. EPC Contractor to adopt Policy and Procedure as part of EHSS Management System.
REF#2	HSE Legal Framework	Prepared by Al Husainiyah Power Generation. Requirements of legal framework to be implemented by Al Husainiyah Power Generation and also taken into account by the EPC Contractor as part of the EHSS Management System.
REF#3	Chance Find Procedure	Prepared by Al Husainiyah Power Generation and overall implementation responsibility is under EPC Contractor.
REF#4	Emergency Preparedness and Response Plan	Prepared by Al Husainiyah Power Generation and overall implementation responsibility is under EPC Contractor.
REF#5	CSR Program	To be implemented by Al Husainiyah Power Generation

In addition, the following identifies the components of the EHSS Management System that will be required from the EPC Contractor. The following components identified below will be specifically applicable and are to be implemented by the EPC Contractor and subcontractors involved only.

- EHSS Manual that should be aligned with the requirements of Al Husainiyah Power Generation EHSS Manual (i.e. this document)
- Labour and Working Conditions Management Plan
- Worker Accommodation Plan
- Occupational Health and Safety Plan
- Security Management Plan
- Worker Grievance Mechanism
- Water Management Plan
- Dust and Noise Control Plan
- Waste Management Plan
- Biodiversity Management Plan
- Worker Code of Conduct
- Traffic Management Plan
- Contractor and Supplier Management Plan

The above documents must be submitted to Al Husainiyah Power Generation for approval. In addition, each of the plans discussed above and where relevant must include the components identified below.

- Relevant laws and standards that are applicable to the plan;
- Training requirements to include at a minimum requirement for induction training as well as Toolbox Talks (TBT);
- Monitoring and reporting requirements to the plan including Key Performance Indicators (KPI) as relevant; and
- Identification of roles and responsibilities for implementation of the plan.

The EPC Contractor will ensure that all involved subcontractors in the project are provided with the requirements of the EHSS Management system of both Al Husainiyah Power Generation and the EPC Contractor. In specific subcontractors will be required to:

- Implement and comply with EHSS requirements and conditions as detailed within the EHSS plans and procedures provided by the EPC Contractor;
- Develop and submit relevant EHSS documents and programs (plans and procedures) where required and as applicable for their scope of work. Such documents must be approved by the EPC Contractor; and

- Adhere to all applicable local laws, ordinances, statutes, rules, regulations, and codes governing EHSS as well as international standards (i.e. IFC standards).

3 LEGAL AND POLICY FRAMEWORK

The EHSS Management System has been prepared taking into account all environmental, health, safety, and social legislations that are applicable in Jordan and for the Project – to include laws, regulations, instructions, and standards as issued by the various applicable governmental entities.

In addition, the Project is seeking financing from International Financing Institutions (IFI) to include the German Investment Corporation (DEG) and Netherlands Development Finance Company (FMO). Therefore, the EHSS Manual has also been prepared taking into account international best practice requirements as indicated below.

It is important to note that additional details on the applicable national legislations as well as IFI requirements, are provided in details within the HSE Legal Framework (REF#2). In addition, a summary of the relevant legal requirements is included within each of the associated management plans identified in Section 2.3 earlier.

International Finance Corporation (IFC)

The IFC of the World Bank provides a range of guidance documents related to the assessment and management of environmental and social issues in project development. Not only does IFC guidance provide a generally accepted basis for good practice, but it also provides the technical cornerstone for the Equator Principles which set out the environmental and social requirements of banks for project finance. The IFC requirements have become the *de facto* international environmental and social performance benchmark for project financing.

The IFC Performance Standards on Social and Environmental Sustainability set out a framework for managing and improving project performance from planning and assessment, through construction and operations to closure. The Performance Standards include the following:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts
- PS2: Labour and Working Conditions
- PS 3: Resource Efficiency and Pollution Prevention
- PS 4: Community Health, Safety and Security
- PS 5: Land Acquisition and Involuntary Resettlement
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- PS 7: Indigenous Peoples (not applicable in Jordan and therefore not applicable for this Project).
- PS 8: Cultural Heritage

In addition, there are also General EHS Guideline document that are produced by IFC. Such EHS guidance document provides detailed management and technical recommendations with regards to Industry-Best Practice. Those have also been considered as part of the EHSS Management System.

4 KEY IMPACTS ANTICIPATED DURING PLANNING AND CONSTRUCTION

The table below presents the anticipated impacts from the Project during the construction phase of the Project. In addition, the table also identifies the relevant management plan which includes the procedures and measures for handling the identified impact/risk and ensure it is eliminated or reduced to the greatest extent possible, as well as overall implementation responsibility.

Table 3: Key Anticipated Impacts During Planning and Construction

Receptor	Anticipated Impact	EHSS MS Document	Overall Implementation
Hydrology and Hydrogeology	Risk of soil and groundwater contamination during the various construction activities from improper waste management.	Waste Management Plan	EPC Contractor
Biodiversity	Construction activities would disturb existing habitats (flora and fauna). In addition, other impacts could be from improper management of the site (e.g. improper conduct and housekeeping practices).	Biodiversity Management Plan	EPC Contractor
Archaeology and Culture Heritage	Improper management of construction activities could disturb/damage potential archaeological remains which could be buried in the ground (if any).	Chance Find Procedure	EPC Contractor
Air Quality and Noise	Construction activities will likely result in an increased level of dust, particulate matter and pollutant emissions as well as noise levels which could affect workers as well as nearby receptors.	Dust and Noise Control Plan	EPC Contractor
Infrastructure and Utilities	During construction, Project could affect existing capacity of infrastructure and utilities related to water supply, wastewater facilities, solid waste facilities, and hazardous waste facilities.	Water Management Plan	EPC Contractor
		Waste Management Plan	EPC Contractor
	If transportation activities of the various project components to the site are not properly managed beforehand, they could entail risk of damage to the existing roads and could be of public safety concerns to other users on the road as well as workers on site.	Traffic Management Plan	EPC Contractor
Community Health, Safety and Security	This could include but not limited to the following risks on nearby local communities: (i) trespassing of unauthorized personnel; (ii) potential Impacts from presence of security personnel relate to inappropriate management and conduct of security personnel towards the local communities; (iii) potential Impacts from workforce influx during construction.	Labour and Working Conditions Management Plan	EPC Contractor
		Worker Accommodation Plan	EPC Contractor
		Security Management Plan	EPC Contractor
		Stakeholder Engagement Plan and Grievance Mechanism	Al Husainiyah Power Generation

Socio-economic	The Project is expected at a minimum to provide job opportunities for local communities. This, to some extent, could contribute to enhancing the living environment for its inhabitants, elevate their standards of living, and bring social and economic prosperity to local communities.	Labour and Working Conditions Management Plan	EPC Contractor
		CSR Program	Al Husainiyah Power Generation
Occupational Health and Safety	There will be some risks to workers health and safety during the operation and maintenance activities of the Project.	Occupational Health and Safety Plan	EPC Contractor

5 EHSS ROLES AND RESPONSIBILITIES

This section identifies the EHSS roles and responsibilities for key personnel from Al Husainiyah Power Generation involved in the Project. These roles must be included in the job descriptions and be known by the concerned employees. Throughout the Project, project management and employees, all contractors/lower-tier contractors will comply with this plan as relevant.

The Project organization chart which demonstrates the functional units managing the Project and their communication flow lines is presented the figure below.

As noted in the figure below there will be one (1) Senior Project Manager who will be supported by one (1) Health, Safety, Environment and Security (HSES) & Administration Officer. Other key positions also include one (1) Community Liaison Officer (CLO).

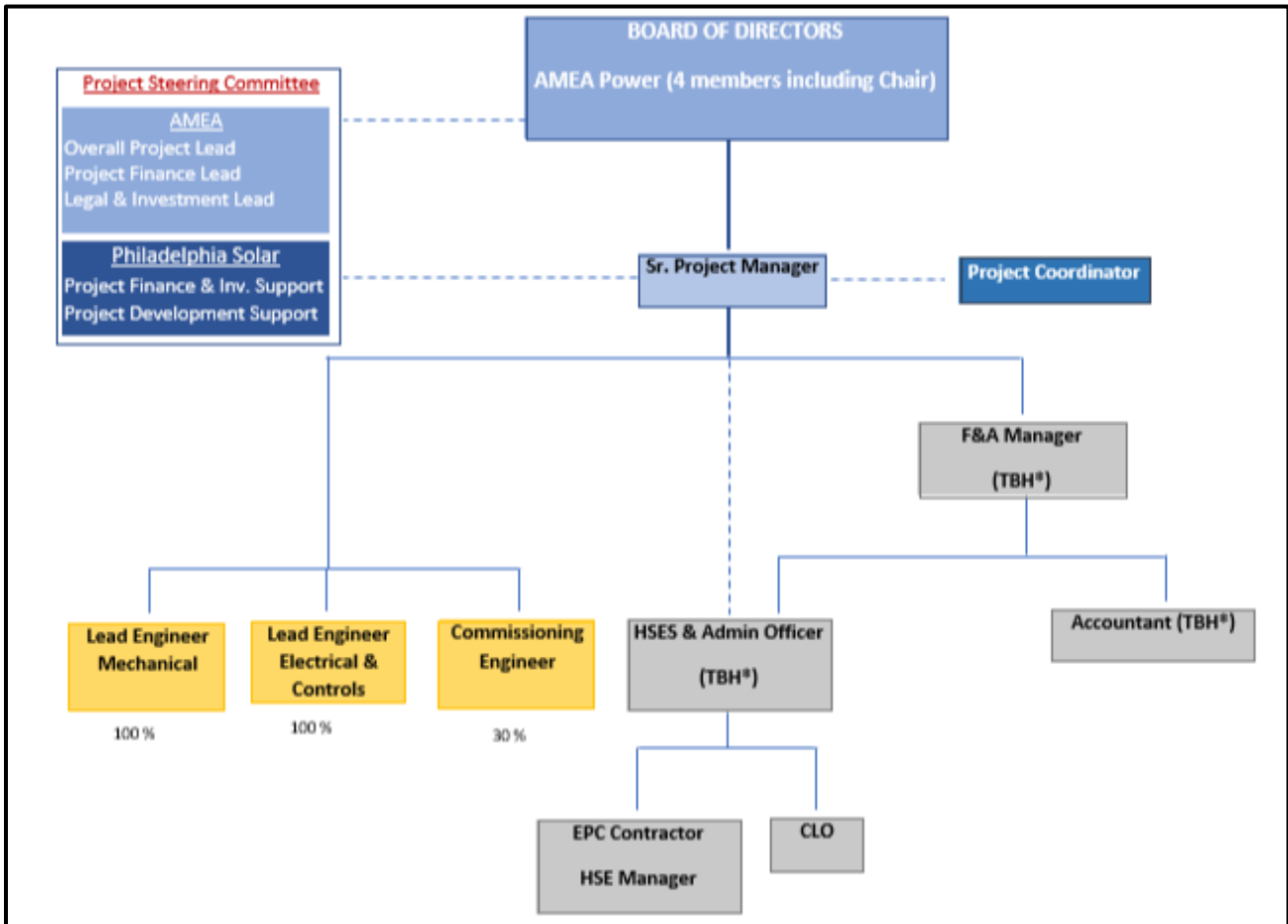


Figure 5: Organizational Structure

5.1 Lines of Authority

Based on the organization structure identified above, this section identifies the lines of authority and roles and responsibilities for those personnel that are involved in the EHSS Management System of the Project.

5.1.1 Senior Project Manager

- Ensures and evaluates Project compliance with the EHSS management system, internal guidelines as well as legal and regulatory requirements.
- Organizes and chair EHSS Management Reviews at least quarterly (as detailed further in Section 6)
- Monitors EHSS performance of the Project and defines feasible and sustainable actions to enhance it
- Ensures EHSS risks are identified and assessed
- Provides the means to control the EHSS risks on all activities of the Projects
- Guarantees that all employees under his/her authority and responsibility are medically fit, trained, accredited, equipped and competent to perform their work
- Ensures the Project is prepared to manage incidents of any severity
- Ensures EHSS communication process is implemented and is effective at the Project level
- Chairs monthly EHSS Committee meetings (as detailed further in Section 6)
- Ensures the availability of required resources to properly implement the EHSS plans and requirements
- Ensures the consistent enforcement and implementation of all programs, policies and procedures
- Ensures that EPC Contractor and subcontractors meet EHSS requirements of the Project
- Enhances the EHSS compliance culture through exemplarity and commitment
- Promotes leadership in EHSS and implement EHSS improvement initiatives
- Ensures proper implementation and review of the project EHSS audit (as detailed in Section8)

5.1.2 HSES & Admin Officer

HSES & Admin Officer reports to the Senior Project Manager. Responsibilities include:

- Supports Senior Project Manager in steering and implementing the EHSS management system
- Focal Point for all Health, Safety and Environmental issues
- Maintains and updates HSE rules, regulations and guidelines, local/international requirements as applicable to the project
- Advises on legislative changes concerning HSE which may affect the Project
- Develop, maintains & monitors the EHSS plans (as identified in Section 2.3)
- Reviews and approves all EPC Contractor and subcontractors HSE plans as required
- Submits incident/accident reports to Senior Project Manager
- Ensures the implementation and verification of corrective and preventive actions
- Supports the management in the promotion and improvement of HSE awareness
- Assists in the investigation of any accident / near miss and compiles the necessary reports
- Verifies that injury logs and reports are completed and submitted to related entities as required
- Communicates with EPC Contractor and subcontractors and advises on their HSE matters

- Participates to all EHSS meetings (as detailed further in Section 6)
- Supports the EPC Contractor and subcontractor managers in identifying and assessing the HSE risks of their activities, as well as in defining mitigation measures to control these risks
- Defines and organizes HSE training programs
- Plans, organizes, participates and conducts internal EHSS audits (as detailed in Section8)
- Keeps all records as required

5.1.3 Community Liaison Officer (CLO)

CLO reports to HSES & Admin Officer. Responsibilities include:

- Monitor and maintain a positive profile of the project with the community and required stakeholders;
- Manage day to day interaction with all stakeholders during the construction phase as indicated within the project Stakeholder Engagement Plan (SEP) including (but not limited to) local community members and other;
- Implement and manage stakeholder grievance mechanism;
- Map local employment and project development activities;
- Monitor and report on the implementation of social requirements and grievances;

5.1.4 Project Personnel

- Cooperates with, and constructively participates in the EHSS plans
- Complies with Project EHSS requirements that apply to an individual's work
- Works within competencies held
- Adheres to procedures to protect safety, the safety of your fellow employees, and the safety of the general public
- Is proactively involved in the EHSS program; this involvement may include some aspects of planning, problem solving, priority setting, training, and improving site specific work practices
- Does not misuse or damage any equipment

5.1.5 EPC Contractor Requirements

The EPC Contractor will be required to nominate an HSE Manager whom should have relevant qualifications and experiences to undertake the following tasks. The Curriculum Vitae (CV) of the HSE Manager should be submitted to Al Husainiyah Power Generation for approval. In general, the HSE Manager will be responsible for the HSE team from the EPC Contractor whom should undertake the following:

- Develop, implement and monitor EHSS plans as relevant (as identified in Section 2.3)
- Ensures the availability of required resources to properly implement the EHSS plans and requirements
- Provides EHSS reporting requirements as relevant (as identified in Section 1010)
- Provides EHSS training requirements as relevant (as identified in Section 7)
- Undertake EHSS inspection and monitoring requirements as relevant (as identified in Section 8)
- Participates in EHSS meetings (as discussed in Section6)
- Reports on EHSS incidents

In addition, it is the responsibility of the EPC Contractor (through the HSE Manager) to ensure that all subcontractors nominate HSE officers for the overall implementation of EHSS plans and requirements as applicable.

6 EHSS MEETINGS

6.1 Weekly EHSS Meetings

The weekly EHSS meeting is organized by the Developer HSES & Admin Officer and involves main EPC contractor and subcontractors' HSE Manager/Officers (as applicable). The agenda of these meetings shall cover at least the following items:

- Summary of items addressed at the previous meeting and determination whether they have been solved or not
- HSE incidents, near misses or situations at risk identified during the previous week
- Special resources needed by EPC Contractor and subcontractors for coming week, especially in terms of safety equipment and supervision
- Specific awareness communication to implement onsite
- Training needs
- Personal Protective Equipment (PPE) requirements

The weekly EHSS meetings may be combined with other meetings (e.g. weekly coordination meeting) as far as the above topics are discussed and addressed and the presence of the required participants is ensured.

6.2 Monthly Meeting

The monthly EHSS meeting is organized by the Developer Senior Project Manager and involves the following personnel (as appropriate):

- HSES & Admin Officer
- CLO
- Contractor and subcontractors HSE Managers/Officers as applicable
- Site Administrator
- Technical Personnel
- Developer Site Engineers
- Owner Engineer

The agenda of these meetings shall cover at least the following items:

- Summary of the items addressed at the previous meeting and determination whether they have been solved or not
- Discussion on work assignments (if they have changed), equipment placement if it is variable, and ensure work flow is efficient and safe
- Conditions of the work place to include housekeeping, hygiene, hazards, etc.
- Overview of accident/incident trends
- EHSS training program
- New and outstanding safety issues

- Audits and inspections outcomes
- Accidents (type, severity, frequency, etc.)

Throughout the monthly EHSS meeting, minutes of meeting shall be taken and circulated after the meeting to attendants.

6.3 Management Reviews (Quarterly)

At least quarterly, the EHSS performance and action-plan of the Project will be reviewed and amended. This review has the following objectives: (i) assess the relevance and effectiveness of the actions implemented during the 3 last months; and (ii) define the objectives and actions that will improve the level of EHSS performance and culture.

This review will be chaired by Senior Project Manager with the support from the HSES & Admin Officer. The topics addressed shall include at least:

- The accidents (type, severity, frequency, etc.)
- EHSS Audits and inspections' outcomes
- Safety training program
- Health of employees
- Management of EPC Contractor and subcontractors
- Return of experience
- EHSS organization

To perform this review, the following inputs are required:

- EHSS Audits reports
- Complaints (related to worker grievances or community grievances)
- EHSS Accident reports
- EHSS Monthly reports
- EHSS Training plan
- Key Performance Indicator (KPI) data

This review will be documented and communicated to the rest of the employees.

7 EHSS TRAINING

To achieve the approach to EHSS management, all personnel will receive the required training. Al Husainiyah Power Generation will be responsible for ensuring that all contractor personnel are aware of their environmental and social responsibilities. Training will not be undertaken as a one-off but instead will be continually refreshed as part of on-going site training programs focused on the training needs of construction personnel. Training will be provided for all new recruits and continual refresher courses will be established for staff to attend as needed.

The HSES & Admin Officer shall establish, amend and follow up on the training plan, recipients of training, frequency of training and records keeping.

7.1 Basic Visitor Safety Induction

Any visitor shall receive a basic safety induction prior to going on site. Each person who completes the induction will acknowledge by signing attendance sheet. This induction shall cover at least the following items:

- Site specific hazards awareness
- PPE instructions
- Basic safety rules to comply with
- Procedure to follow in case of emergency

The basic visitor safety induction training for visitors related to Al Husainiyah Power Generation will be delivered by HSES & Admin Officer. However, the EPC Contractor will be responsible for delivering the basic visitor safety induction training for his/her visitors accordingly as well as that of subcontractors. In addition, event attendance data sheet shall be signed and provided.

7.2 Site Induction Training

All construction staff members will attend an in-house site induction training course. This will be delivered in a specific meeting room on the Project site and in a consistent structure, irrespective of the staff designations attending. The main objective of this type of training is to provide:

- A general understanding of the EHSS risks associated with the construction activities proposed
- Local, national and international requirements
- Clarification of the EHSS Policy and its practical implementation, stressing that it carries implications for the working methods and responsibilities for all employees

The site induction training will be delivered by the HSES & Admin Officer to all staff before they commence work on site. Workers will not be allowed to start working onsite until they have received the site induction training. As a minimum, the induction will include but not be limited to:

- General introduction and purpose and objectives of the EHSS plans
- The reason why the requirements set out in the EHSS plans are important
- The requirements for due diligence and duty of care
- Key EHSS contacts, roles and responsibilities
- Methods for implementing EHSS controls included within the plans
- Procedure for reporting incidents
- Details of site emergency and response plan

Signed attendance sheet shall be retained.

In addition, the EPC Contractor will be required to provide a detailed Site Induction training for his/her employees as well as subcontractors workers. The inductions training will be more detailed to include the requirements of the EHSS plans prepared by the EPC Contractor (as identified and required in Section **Error! Reference source not found.**). Signed attendance sheet shall be provided to the HSES & Admin Officer.

7.3 Emergency Response Training

A standalone Emergency Preparedness and Response Plan (Reference Number: #6) is available to address required emergency response training. However, general response information for fire and weather-related emergencies is included in initial orientation (site induction training) as discussed earlier.

7.4 Regular Tool-Box Talk (TBT)

The EPC Contractor will be responsible to conduct regular Tool-Box EHSS meetings with their respective crews and subcontractors' crews as applicable. Topics and frequency are developed by the HSE Manager/Officer of the EPC Contractor and distributed regularly. Signed attendance sheet shall be retained and provided to the HSES & Admin Officer. The scope of the TBT shall be identified within each of management plans identified in 2.3.

7.5 Other Training Requirements

There are other specific training requirements that must be adhered to and undertaken by the EPC Contractor and which are related to specific topics as applicable. This includes for example specific training for Occupational Health and Safety (OHSP), specific training for workers handling wastes, etc. Such specific training requirements must be included within the detailed management plans identified in 2.3. earlier.

7.6 EHSS Bulletin Board

A bulletin board will be installed at all sites where employees congregate as applicable. All other locations will have the same information available for employees review on demand. Bulletin board information is as follows:

- Map denoting the route to the nearest emergency care facility
- Emergency communication procedures
- List of the most up-to-date EHSS plans and their location
- A sign indicating the number of hours worked since last lost workday incident
- Safety and health warning posters
- Safety Alert

8 EHSS INSPECTION, MONITORING AND AUDITING

Effective reporting is essential for ensuring EHSS is of practical value. Routine independent auditing provides the necessary motivation for continual improvement. EHSS inspection, monitoring, reporting and auditing will be carried out to ensure compliance with national and international best practice requirements as set out in the EHSS plans as appropriate.

A three-tiered approach will be applied to the monitoring of the Project performance, as follows:

- Daily Site Tours to be undertaken by EPC Contractor
- Weekly Site Inspection to be undertaken by EPC Contractor

- Monthly Audits to be undertaken by Al Husainiyah Power Generation

8.1 Daily Site Tours

The EPC Contractor's HSE Manager will be required to undertake a daily safety inspection and monitoring at the site. They shall prepare a daily observation report stating therein the corrective measures on observed safety deficiencies, unsafe acts and conditions. The observations shall be communicated to the concerned partners and subcontractor HSE officers and/or construction supervisors for their action. Copies of the daily inspection reports shall be kept on site at the HSE Manager and provided to the HSES & Admin Officer as required.

8.2 Weekly Site Inspections

It is the responsibility of the EPC Contractor's HSE Manager to carry out weekly site inspections. These will be carried out through a weekly site inspection checklist.

The checklists will be used as the primary tool for identifying any non-compliance. The non-compliance procedure will be followed and implemented. Hard copies of the checklists will be printed and completed by the HSE Manager during the inspection of the site. The completed checklists will be stored and provided to the HSES & Admin Officer as required.

The inspections will be used to ensure that the contractor and subcontractors are fully implementing the management procedures outlined within the EHSS plans.

The information collected during the weekly site inspections will be made available to the HSES & Admin Officer and others as relevant.

8.3 Audits

The HSES & Admin Officer will be undertaking an audit on a monthly basis. The audit will include the following:

- Check EPC contractor and subcontractor's compliance with the control procedures within EHSS Plans
- Review EHSS plans to ensure that they are relevant to current activities and recommend changes if required
- Review the results of monitoring against the relevant criteria set out in the EHSS Plans
- Review all non-compliances (if any) to determine if additional controls are required
- Review EHSS action register to ensure all issues are dealt with in a timely manner

Based on the above, the HSES & Admin Officer shall prepare monthly reports. These reports shall summarize the following:

- Key outcomes of the EHSS audit
- Progress in implementing the EHSS Plans as required
- Findings of the monitoring programs, with emphasis on any breaches of the control standards, action levels or standards of general site management
- Outstanding incident report forms
- Relevant changes or possible changes in legislation, regulations and international practices

- Reporting on Key Performance Indicators (KPI).
- Number of non-compliance incidences (if any)
- Number of complaints in relation to any environmental or social grievances (if any)
- Details of any corrective actions (if any)
- Overall EHSS performance
- Implementation of the management plans

The monthly reports will be reviewed by the Senior Project Manager to ensure that EHSS practices are being properly implemented. Such monthly reports will also be submitted to the Lenders as required.

9 INCIDENTS MANAGEMENT

This section provides the appropriate actions in the event of a reported incident. For the purpose of this section, the following definitions apply:

- Incident: an unplanned event that does not result in personal injury but may result in property damage or is worthy of recording;
- Accident: an unplanned event that results in personal injury or property damage; and
- Near miss: an unplanned event that did result in injury, illness, or damage, but had the potential to do so.

Al Husainiyah Power Generation considers incident management as a critical element for two purposes:

- To mitigate its direct consequences (injuries, environmental pollution, damage of equipment, etc.) and indirect consequences (affected client satisfaction, lost time on planning, additional repair costs, lack of confidence, etc.)
- To prevent re-occurrence

This section explains the general requirements for incident management and specificities for near miss, critical accidents and crisis management.

9.1 Incident Report

Al Husainiyah Power Generation considers an incident as an unfortunate event for improvement. Consequently, the reporting of incidents is a strategic tool for steering the EHSS process of the Project. Incident report is to be produced and communicated in case of accident.

a. Verbal Report

All incidents (as defined earlier to include incident, accidents and near misses) must be reported verbally immediately to the Developer HSES & Admin Officer. It is then the responsibility of the HSES & Admin Officer to inform respective groups.

Minor issues will not require a written report and investigation (as detailed below) but still need to be recorded to identify recurrent problems.

b. Written Report

For other issues that are not considered minor (i.e. those with potential to cause death or serious injury or property damage) the Developer HSES & Admin Officer will conduct an investigation and a written report. A copy of each completed incident report form will be held on file by Developer HSES & Admin Officer and included in the monthly reporting.

9.2 Investigation

For other issues that are not considered minor as discussed above, an investigation will be undertaken. The investigation of incidents must be performed by the Developer HSES & Admin Officer or the person he/she designates. However, in case of critical accidents (fatality,) the authorities might decide to conduct the investigation.

The investigation aims to collect the maximum of relevant facts in order to ensure a comprehensive analysis of the incident. The key principals for the investigation are:

- It must be thorough and factual
- It must be based on documents, interviews and observations
- It should focus on 4 components:
 - The environment of the incident
 - The methods/procedures/instructions
 - The material and equipment
 - The employee who caused and/or is victim of the incident

The results of the investigation must appear in the Incident Report.

9.3 Analysis

Al Husainiyah Power Generation shall use one of the following root-cause analysis techniques to identify the direct and the fundamental (root) causes of incidents:

- Fault tree analysis for critical incidents (or near miss with a high potential of severity)
- Any other methodologies able to identify the causes of the incident.

This analysis must be conducted by the Developer HSES & Admin Officer with the personnel involved (witness, victim, EPC Contractor HSE Manager subcontractor HSE officer, subcontractor manager, etc.). The analysis shall also focus on the response so that actions for improvement are identified (cf. Return of Experience).

The results of the analysis must appear in the Incident Report. Further to the analysis, corrective measures shall be defined and implemented. These actions shall prevent the reoccurrence of similar incidents as well as incidents with one or more similar causes. Actions for improving the response shall also be defined and implemented.

This return of experience shall be shared internally using the available communication means (cf. Communicate in HSE).

10 EHSS REPORTING AND RECORDS

Based on all of the above the table below provides a summary of all the EHSS requirements discussed throughout this EHSS Manual along with the reporting and record keeping requirements. The table below identifies the requirements for Al Husainiyah Power Generation as well as the EPC Contractor.

The following reports and records will be stored and maintained onsite at all time.

Table 4: EHSS Reporting and Records

No.	Developer		EPC Contractor	
	EHSS Item	Report/Record	EHSS Item	Report/Record
1	EHSS Meetings			
1.1	Overall management of weekly EHSS meetings	Minutes of meeting	Attend weekly EHSS meetings	N/A
1.2	Overall management of monthly EHSS meetings	Minutes of meeting	Attend monthly EHSS meetings	N/A
1.3	Overall management of quarterly management reviews	Minutes of meeting	Attend Management Reviews	N/A
2	EHSS Training			
2.1	Basic visitor safety induction training (for his/her visitors respectively)	Signed attendance sheet	Basic Visitor Safety Induction Training for his/her visitors as well as subcontractors	Signed attendance sheet
2.2	General Site Induction Training	Signed attendance sheets	Specific Site Induction Training Attendance Sheet	Signed attendance sheets
2.3	N/A	N/A	Emergency Response Training	Signed attendance sheets
2.4	N/A	N/A	Regular EHSS Tool Box Talks	Signed attendance sheets
2.5	N/A	N/A	Other Specialized Trainings (e.g. Occupational Health and Safety)	Signed attendance sheets
3	EHSS Inspection, Monitoring and Auditing			
3.1	Monthly audit	Monthly EHSS Report	Daily Site Tours	Daily site tour inspections reports
3.2	N/A	N/A	Weekly Site Inspections	Weekly site inspection checklists
3.3	Other as applicable within management plans (Section 2.3)	As applicable	Other as applicable within management plans (Section 2.3)	As applicable
4	Incident Management			
4.1	Incident investigation	Incident report	N/A	N/A

11 CONTRACTOR AND NON-COMPLIANCE MANAGEMENT

The EHSS Manual identifies clearly the roles and responsibilities that are expected from the EPC Contractor during the construction phase of the Project. This includes in particular the following:

- Prepare, implement and comply with the requirements of the EHSS Management System as identified in 2.3
- Appoint an HSE team headed by an HSE Manager as identified in Section 5.1.5
- Undertake and participate in EHSS meetings (weekly, monthly and quarterly) as identified in Section 6
- Undertake EHSS trainings (visitor safety induction, site induction, tool box talks and other) as identified in Section 7
- Undertake EHSS inspection, monitoring and auditing as identified in Section 8

In addition, as discussed in Section 2.3 earlier, the EPC Contractor will ensure that all involved subcontractors in the project are provided with the requirements of the EHSS Management system of both Al Husainiyah Power Generation and the EPC Contractor and they will be required to implement and comply with EHSS requirements accordingly. In addition, subcontractors will be required to nominate HSE officers for the overall implementation of EHSS plans and requirements as applicable.

Al Husainiyah Power Generation will ensure that the EPC Contractor and all subcontractors involved in the project during the construction phase adhere to provisions of the EHSS Manual and Management system and its associated management plans. Whether through audits or through any other source of information (e.g. grievance mechanism), it comes to the attention of the HSES & Admin Officer that the EPC Contractor or any of the subcontractors do not comply with the requirements, the following will apply:

- The HSES & Admin Officer will issue a non-compliance report which provides details on the non-compliance issue and justification.
- The HSES & Admin Officer will submit the report and notify the EPC Contractor Project Manager and EPC Contractor HSE Manager
- The HSES & Admin Officer will require a corrective action report from the EPC Contractor which provides details on the incident, measures taken to rectify the situation and ensure that such an incident does not happen again.
- Depending on the severity of the non-compliance as determined by HSES & Admin Officer, a written formal warning could be issued to the EPC Contractor.
- Should the non-compliance incident be repeated (and depending on the severity) a similar process to the above will be undertaken and another written formal warning will be issued.
- Should the non-compliance incident be repeated for a third time, discussions will be undertaken between the HSES & Admin Officer and the Senior Project Manager to impose contractual and financial penalties on the EPC Contractor.