Ghoubet 60 MW Onshore Windfarm

Environmental & Social Impact Assessment (ESIA)

Non-Technical Summary

August 2018

1.0 INTRODUCTION

1.1 Project Background

Africa Finance Corporation (AFC), Great Horn Investment Holding SAS (GHIH), Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V. (FMO) and Climate Investor One (CIO) have formed a consortium and are proposing to develop a 60 MW (megawatt) onshore windfarm in the Arta Region of Djibouti (the Project). The location of the Project site is shown in *Figure 1*.

In accordance with Djiboutian legislation and the consortium's equity partner policies, standards and requirements, the Project has been subject to an Environmental and Social Impact Assessment (ESIA). The ESIA was undertaken by a team of consultants from Environmental Resources Management (ERM), INSUCO Djibouti and Combined Ecology.

1.2 This Document

This document is the Non-Technical Summary for the ESIA. It is a stand-alone document, which provides interested parties and stakeholders, such as members of the public, with a short overview of the ESIA in non-technical language. It provides an overview of the Project, identifies sensitivities and constraints of the Project site and surrounding area, and summarises the findings of the environmental and social assessment and measures to manage potential risks and enhance benefits of the Project.

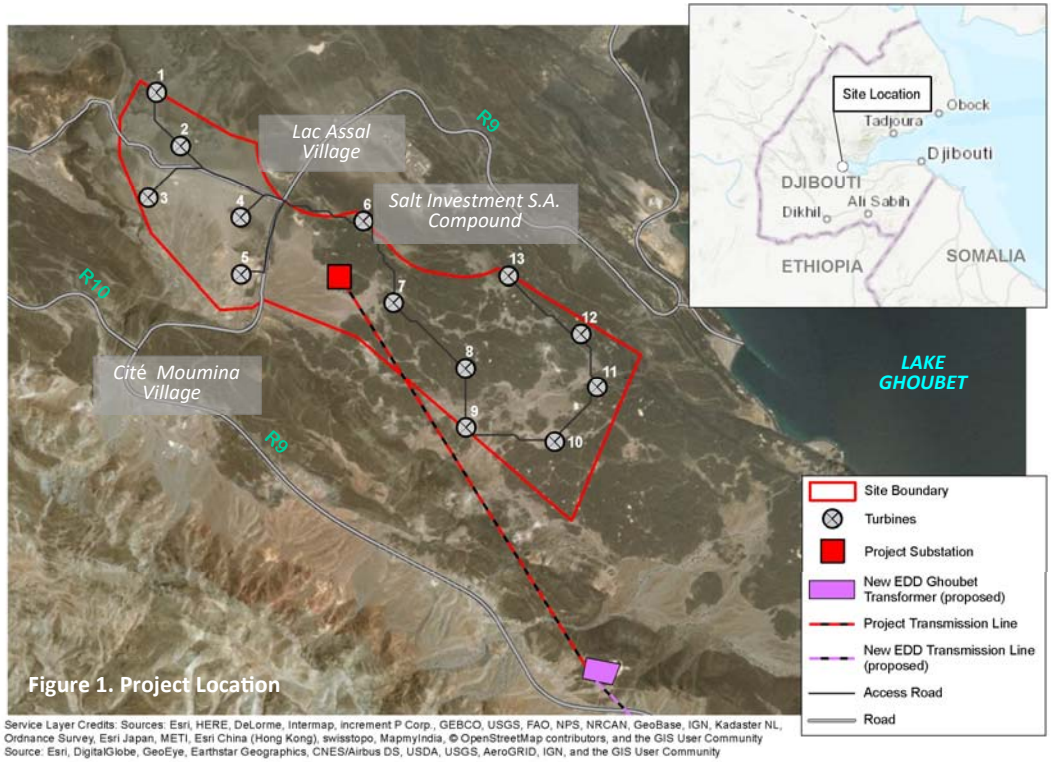

Figure 1. Project Location

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

1.3 Structure of the ESIA Report

The ESIA document package consists of three volumes:

Volume I: the Non–Technical Summary (this document).

Volume II: the main ESIA Report provides a detailed description of the Project and presents the assessment methodologies, findings and conclusions of the process.

Volume III: the Technical Annexes provide supporting information for a number of the assessments undertaken and reported on in *Volume II.*

If you would like to access *Volumes II* and *III* of the ESIA or request hard copies of the documents, please contact the Project Community Liaison Officer (CLO) (contact details are provided in Section 4.5 of this document).

1.4 The ESIA Process

The ESIA has been completed in accordance with Djiboutian legislation, International Finance Corporation (IFC) Performance Standards (2012) and World Bank Group Environmental, Health and Safety (EHS) Guidelines (General and for Wind Energy). The ESIA process included the following activities:

Scoping Exercise

A scoping exercise was undertaken to identify and focus the impact assessment on potentially significant environmental and social issues associated with the development of the Project (through the construction and operation phases). Scoping has an important role to play in achieving proportionate and effective assessment. Key stakeholders, including interested and affected parties, were identified during this exercise and provided with an opportunity to raise any comments, concerns and/or queries that they may have on the proposed Project. A Scoping Report was prepared for the Project in February 2018.

Impact Assessment

The impact assessment provides a detailed analysis of the potential environmental and social issues that may result from the Project. The assessment is supported by specialist scientific studies. It also provides details of the measures and management actions that will be implemented to avoid, reduce, remedy or compensate for any significant adverse impacts predicted. Where practicable, details of how the consortium will maximise potential positive benefits and opportunities from the Project are also given. The assessment was completed in June 2018.

Stakeholder Engagement

Stakeholders have been engaged throughout the ESIA process. Key findings from the scoping and impact assessment activities have been presented to government officials, local communities and key interest groups.

2.0 PROJECT DESCRIPTION

2.1 Introduction

The Project will comprise the following core components within the site boundary:

- a temporary construction compound (150 x 100 m) and worker facility compound (130 x 100 m);
- areas where rock will be excavated for use during construction;
- 13 turbines each with a capacity of 4.8 MW (150 m tip height);
- an aerial (i.e. above ground) cable transmission network and pylons;
- up to 10 km of new access roads (6 m wide);
- a substation compound containing electrical transformers (100 x 75 m); and
- a permanent meteorological mast to collect wind data.

The following facilities will be located outside of the site boundary and are required for the construction and operation of the Project respectively:

- a concrete batching plant; and
- approximately 3.5 km of overhead 230 kV transmission lines and associated pylons to connect the windfarm into the national grid.

Construction is expected to commence in Q1 2019 and last up to 18 months, employing up to 300 staff on site during the busiest period. The windfarm will be operated for up to 25 years (design life of the Project). During operation it is expected there will be five full time employees working on the site in security, operation and civils/caretaker roles.

It must be noted that the Project design assessed through the ESIA process is subject to change according to final Engineering, Procurement and Construction (EPC) Contractor selection. For instance, the make/model of the wind turbines and therefore the individual capacity and number of turbines could change.

2.2 Need for the Project

According to Power Africa, an initiative run by the U.S. Agency for International Development, Djibouti has an access rate to electricity as low as 42%, with 110,000 households without power.

Djibouti has installed capacity for 100 MW of electrical power (but has the potential to generate much more). Only 57 MW of the installed capacity is reliable to supply the country's population of approximately 1 million people. [*Power Africa*, 2018 www.usaid.gov/powerafrica/djibouti] With demand for electricity reportedly increasing 3 -5% annually, Djibouti needs to source new methods of supplying electricity.

In an attempt to meet rising energy demands, Djibouti relies heavily on imported fossil fuels and electricity. The country often suffers economic loss due to constant fluctuations in fuel prices, particularly oil. Djibouti has an unreliable supply of electricity and subsequently, power cuts are frequent and often occur in peak usage times.

'Vision 2035', Djibouti's master development plan, sets the ambitious objective to supply 100% of domestic energy demand through renewable energy by 2020. Djibouti has significant renewable energy resources including geothermal, wind and solar. [*The Report: Djibouti 2016: Energy* www.oxfordbusinessgroup.com] The development of this Project is a direct response to improve the diversity and security of Djibouti's electricity supply and contribute to the national strategy outlined in 'Vision 2035'.

2.3 Project Location & Site

The Project is located approximately one kilometer west of Lake Ghoubet, where the RN9 and RN10 roads intersect, in the Arta Region of Djibouti. The location of the Project site is shown in *Figure 1* and photographs of the Project site are presented in *Figure 2*.

The Project site was identified through a site selection process. This site was favoured due to consistent, average wind speeds throughout the year, as well as the presence of a good road network to access the site from Djibouti City (where the wind turbine components and other construction materials will likely be transported from).

Figure 2. Photographs of the Project Site

2.4 Site Ownership

Any non-registered land in Djibouti belongs to the State. Rural land, such as that in the Project site, can be awarded as a concession to the local community who are settled in an area or have historically been using the land. The local communities have not taken any steps to obtain a temporary concession for the land within the Project site. Instead, land rights and obligations concerning use of land and natural resources are ruled by customary law and principles .

The consortium are in the process of negotiating the form of land tenure the Project will be subject to with the appropriate parties. The process of transferring any land tenure from current ownership and use to the consortium will be a transparent process that will be fully documented, as required by IFC standards.

2.5 Project Alternatives : *'No Project' Scenario, Site and Design Alternatives*

The 'no project' scenario considered not developing the Project at all. However, the diversity and security of Djibouti's electricity supply, as well as access to electricity, are key challenges faced by Djibouti (as highlighted in *Section 2.2* of this document), therefore the 'no project' scenario was not considered a feasible alternative.

Proceeding with the Project will produce clean, renewable energy and will avoid using energy that will otherwise be generated wholly or partly from more carbon-intensive sources. It will also contribute towards the government's plans to meet 100% of domestic energy demand through renewable energy by 2020.

To achieve a feasible scheme, alternatives for the following Project components will be considered through the development and detailed design process:

- turbine make/model;
- number and layout of turbines;
- source of raw materials (e.g. water, rock) required for construction;
- route of the transmission corridor between the windfarm and Ghoubet substation;
- ports to deliver project components and construction materials; and
- transport routes from port to the Project site to deliver Project components and construction materials.

2.6 Project Site Sensitivities & Constraints

During the scoping stage of the ESIA and initial site visit, key sensitivities and constraints of the Project site were identified for consideration in the windfarm design process. These sensitivities and constraints are presented in *Figure 4* (next page).

2.7 Project Design & Layout

In response to the findings of the technical studies, the ESIA process and stakeholder engagement completed to date, the following revisions have been made to the Project design in consideration of environmental, social, health and safety sensitivities:

- locating turbines over 500 m from any residential houses to minimize potential impacts caused by noise and shadow 'flicker'/nuisance during operation of the windfarm;
- locating turbines a safe distance from any public roads to minimise the potential health and safety impacts during construction and operation;
- locating Project components, especially turbines and new access roads, as far from the wadi channels as possible to avoid potential impacts on vegetation / habitats and the local surface water drainage regime;
- locating Project components away from the cemeteries identified within proximity to the north-western site boundary; and
- maintaining access across the site and designing the Project to ensure herders and their livestock can still pass through the land when the wind farm is operating.

Figure 3 shows two different designs of the turbine layout. Design 1 shows the initial layout and Design 2 presents the current proposed layout as developed by Tractebel engineering during the 2014 pre-feasibility study and 2017 feasibility study.

The changes to the turbine layout were undertaken based on better knowledge of the site (i.e. wind resources, geo-technics and environmental and social sensitivities / constraints) and advances in wind turbine technology.

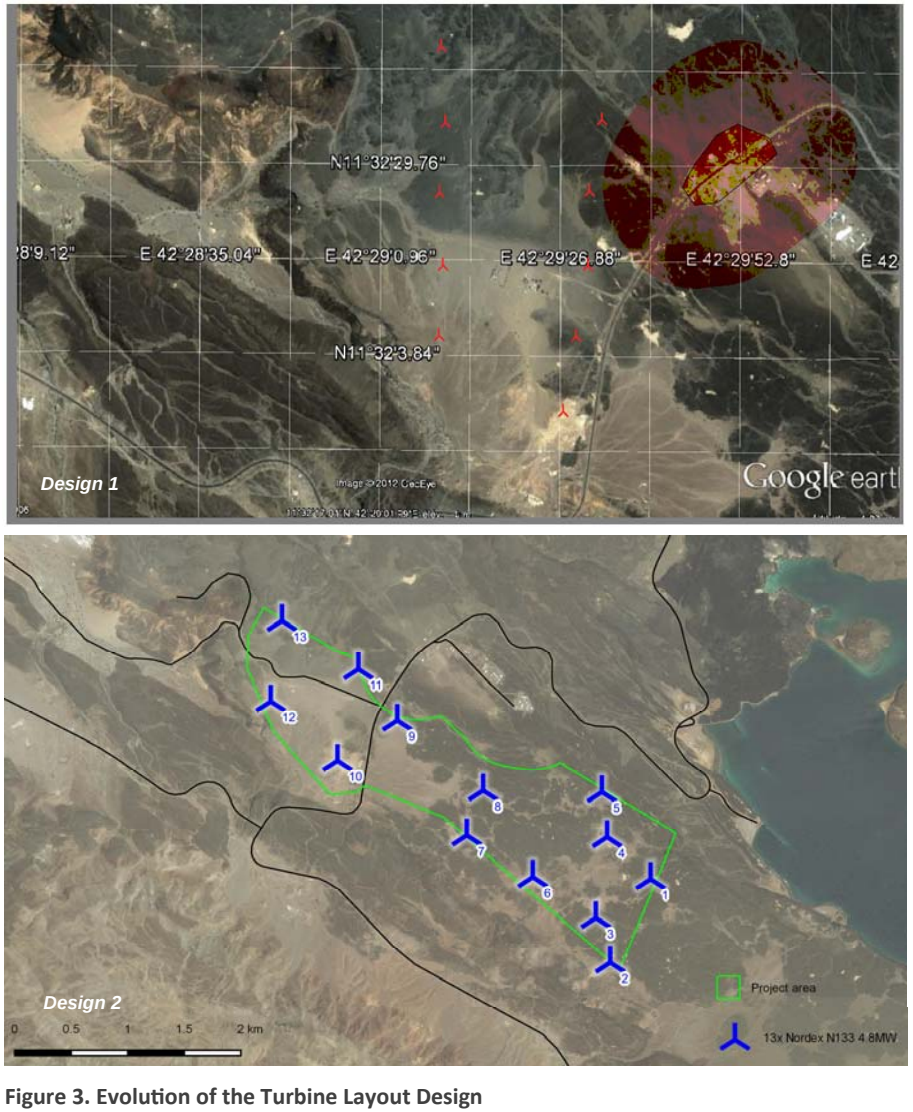

Figure 3. Evolution of the Turbine Layout Design

Figure 4. Project Site Sensitivities & Constraints

Community

There are no communities within the Project site. Cité Moumina village is located 650 m to the south of the Project boundary on top of the escarpment (a mosque, a school, 105 households and 641 inhabitants). Lac Assal village is located 500 m north of the Project boundary (24 households and 139 inhabitants). Layta village is an abandoned village, 1 km west; most of the inhabitants moved to the recently built Cité Moumina in 2016. The houses in these villages are a mixture of traditional huts and purpose built houses. There is also a mosque and a school in Cité Moumina.

Water is scarce in the region; potable water is trucked in regularly by the government and stored in a purpose built structure. The villages do not have electricity and there are no waste management facilities.

Cultural heritage

Two cemeteries are located in proximity to the north-western site boundary. Although located outside of the Project site, they are accessed via the site. There are also multiple stone structures used by herders as shelter for their goats within the Project site.

Transport infrastructure

Two roads traverse the Project site, the R9 main road and a road to Lake Assal which was recently constructed. The R9 provides access between the two villages of Lac Assal and Cité Moumina. The latter road is predominantly used by salt trucks travelling from Lake Assal to the mineral port. The road is also likely to also be used during construction of a proposed geothermal project nearby. The roads are sealed and in good condition.

Ambient noise

The loudest sources of noise in the area are from vehicles using the sealed roads. The movement of trucks and HGVs (associated with the salt extraction) between Lake Assal and the port/compound are a recent addition to the ambient noise levels. The topography and prevalent wind carry noise at the level of the site up to the village on top of the escarpment.

Biodiversity

Egyptian vulture (*Neophron percnopterus* IUCN Endangered) resident in the local area attracted by food waste (due to lack of waste management facilities available for communities). The majority of plant and animal species on site are common and widespread, with the exception of two mammal species of conservation concern, the Dorcas gazelle and striped hyena. There is also potential for the presence of the Djibouti whip snake, as well as an endemic plant species.

Soils, terrain, landscape and visual setting

The Project site covers an area of ~390 hectares. Along the southern boundary it is bordered by an escarpment (~100 m higher in elevation than the Project site). Along the northern boundary the terrain rises slightly before descending again down to Lake Ghoubet and the mineral port.

The eastern half of the site is typified by undulating, basalt outcrops interspersed with deposits of finer-material through the drainage channels / wadi systems.

The western half of the site forms a plateaux covered with compacted (but dusty) finer-material, lowering towards the drainage channels running along the southern edge of the site (at the foot of the escarpment).

The Government of Djibouti has initiated a proposal with UNESCO to declare the Lake Assal zone and the Ardoukoba volcano (approximately 8 km north of the Project site) as a World Heritage Site. However, due to recent modifications of the landscape, such as the Salt Investment Compound, this application will likely be discontinued and not pursued further.

Water resources & drainage

The wadi systems across the site provide drainage channels during infrequent rainfall evenets. The wadis also support native flora and fauna, provide grazing for local herders (goats and camels), and provide access for locals as a natural network of well defined footpaths (easier walking conditions than rock surfaces covering majority of eastern part of site).

- Site Boundary
- Project Substation
- New EDD Ghoubet Transformer (proposed)
- Project Transmission Line
- New EDD Transmission Line (proposed)
- Road

PROJECTION: WGS 1984 UTM Zone 38N

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Path: P:\Projects\0438399 AFC Ghoubet Wind Farm BP\02 Working Files\GIS\MAPS\ESIA Report\0438399_ProjectLocation_A02_forNTS.mxd

3.0 ADMINISTRATIVE FRAMEWORK

3.1 Overview

The ESIA has been undertaken to meet local requirements to gain permission for the construction and operation of the Project. In addition, to ensure the Project's equity partner policies, standards and requirements are adhered to and met, the ESIA has also been completed to meet the following:

- Djiboutian legislative requirements;
- Relevant international conventions;
- Relevant International Finance Corporation (IFC) Performance Standards (PS);
- the Equator Principles;
- World Bank Group's (WBG) Environmental and Social Guidelines;
- WBG Environmental, Health and Safety (EHS) General Guidelines; and
- WBG EHS Guidelines for Wind Energy.

3.2 Djiboutian Legislative Requirements

The Ministry of Housing, Urban Planning, Environment, & Town Planning (MHUE) is responsible for overseeing the EIA (ESIA) process in Djibouti. The Djiboutian EIA process is outlined in *Figure 5*.

The EIA Laws and Regulations that govern the process are:

- the Environmental Code (Law n°51/AN/09/6 L)
- the Revision of the Environmental Impact Assessment (EIA) Procedure (Decree n°2011-029/PR/MHUEAT)

3.3 International Conventions

A summary of each convention, and a description of why they are relevant to the Project, is provided in *Volume II, Section 2.4 International Agreements and Conventions.*

3.4 Lender Requirements

As previously mentioned, this ESIA has been developed in accordance with international financing requirements, namely the IFC Performance Standards, the World Bank EHS Guidelines, including those specifically for wind farms. A summary of each requirement, and a description of why they are relevant to the Project, is provided in *Volume II, Section 2, Figure 2.2.*

It must be noted that the Project will adhere to the most stringent requirements, whether national or lender. For example, the Project will implement IFC disclosure standards.

General Process	
Screening	The regulations identify certain types of activities that require the project proponent to submit an EIA. EIA Procedure 2011: Article 4; categories of project requiring summary or detailed EIA are outlined in the Annex
Who Prepares EIA	Project Proponent (with or without contractor approved by MHUE)
EIA Contractor Qualifications	"The proponent may entrust the carrying out of the environmental impact study to consulting firms approved by the Minister in charge of the Environment or to consultants whose expertise in the field is proven. Foreign consulting firms or international consultants must be associated with approved consultancy firms or national consultants qualified in this field" EIA Procedure 2011: Article 9
Review Period	40 days
Decision	"After the period of [ ] forty days for the detailed study, and in case of silence of the Ministry of the Environment, the study is considered admissible". Decision will be favourable, conditional or unfavourable. EIA Procedure 2011: Article 12(2)
Authority to Impose Conditions	Yes, a Technical Evaluation Committee, established to review the EIA, has 20 days to decide the "conditions for granting environmental authorisation" EIA Procedure 2011: Article 28(2)
EIA Content	
Alternatives	Terms of reference for preparing an EIA requires that a detailed EIA study contains an "exploration and analysis of alternatives" EIA Procedure 2011: Article 11(4)
Type(s) of Impact Analysis	Direct, indirect, permanent, temporary and cumulative environmental impacts on the physical and natural environment. Social, cultural, economic and public health impacts on citizens EIA 2011 Article 11(4)e.
Mitigation	EIA shall include "the measures of suppression, mitigation, correction or compensation of the harmful consequences on the environment that the promoter proposes to put in place with a presentation of the corresponding financial means" EIA Procedure 2011: Article 11(4)h
Monitoring Plans	EIA shall include "an Environmental and Social Management Plan (ESMP) including a detailed budget" EIA Procedure 2011: Article 11(4) k
Public Disclosure	
Disclosure of EIA	Scoping - No; Draft EIA - No; Final EIA -Yes
Public Notice of Final EIA Detail	If MHUE accepts the EIA, a public hearing should be conducted to "enable the public [ ] to participate in the evaluation of the report and to express an opinion on the conclusions of the study" EIA 2011:Article 17(1) For 30 days, the final EIA "shall be made available to the public in one designated place. An officer of the borough will be assigned and a special register will be used to record the grievances of the affected population" EIA Procedure 2011: Article 20
Public Notice of Final Decision	Yes, as per EIA Procedure 2011: Article 29
Public Participation	
Public Participation Opportunities	The EIA "shall be carried out with the participation of the populations and the public concerned through consultations and public hearings, in order to collect and take into account the opinions populations on the project" EIA Procedure 2011: Article 15(1)
Response to Public Comments	MHUE draws up a memorandum in which will be transcribed all the opinions and concerns of the populations [on the final EIA] and made public. EIA Procedure 2011: Article 21

Figure 5. The Djiboutian EIA (ESIA) Process

4.0 STAKEHOLDER ENGAGEMENT

4.1 Introduction

Stakeholder engagement activities for the Project have been planned and implemented in line with the requirements of the IFC Performance Standards (PS1). Stakeholder engagement requirements are also included in the Djiboutian EIA Regulation (2011) - see *Figure 5* on the previous page.

Full details of consultation with regulatory authorities, local communities and other key stakeholders are presented in the Stakeholder Engagement Plan (SEP) located in *Volume II, Annex G*. A photograph of the community buildings at Cité Moumina is presented in *Figure 6*. The objectives of the engagement process are illustrated in *Figure 7*.

4.2 Stakeholder Identification & Analysis

In order to ensure that the engagement process has been as inclusive as possible, the ESIA team carefully identified individuals and groups that could be deemed as 'vulnerable' i.e. those who may find it more difficult to participate and those who may be differentially or disproportionately affected by the Project because of their marginalized or vulnerable status.

The stakeholder analysis also looked to identify those stakeholders that are likely to be affected by Project impacts (actual or perceived) to ensure that the SEP and planned communication are appropriately tailored. Stakeholders identified were from the following groups (a full list is provided in *Volume II, Annex G*).

- national government stakeholders;
- local / provincial government stakeholders ; and
- community stakeholders.

Figure 6. Cité Moumina Community Buildings

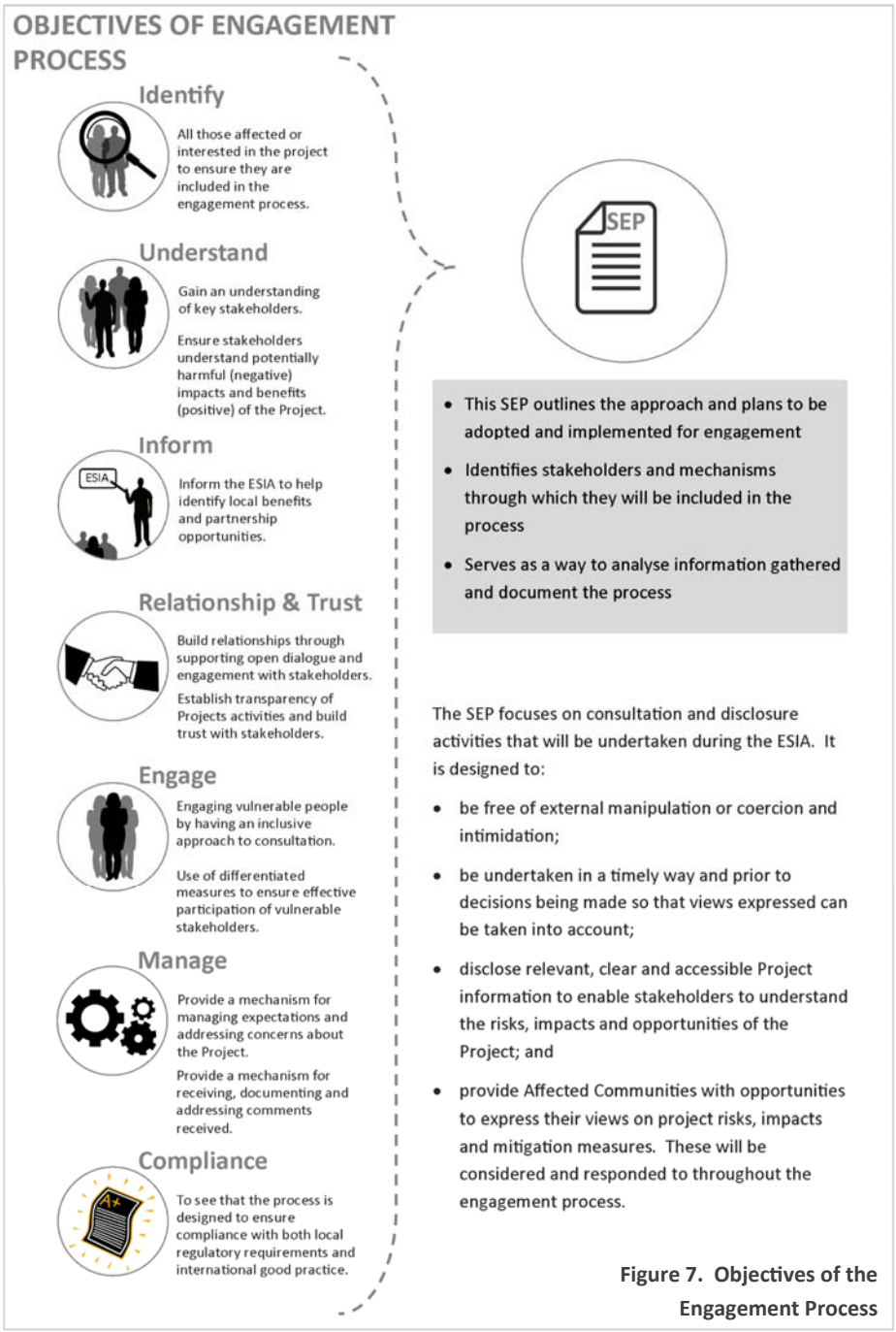

Figure 7. Objectives of the Engagement Process

4.3 Stakeholder Engagement Activities

4.3.1 *Scoping Stage*

Government Stakeholders:

Stakeholder engagement commenced during the ESIA scoping visit in December 2017. However, ongoing discussions have been held by the consortium with various government departments since Project inception.

During the scoping visit, a formal meeting was held with Electricté de Djibouti (EDD). Further stakeholder engagement meetings were then held in February 2018 to present the findings of the Scoping Report to the Ministry of Agriculture and Ministry of Habitat, Urban Planning, Environment and Town Planning (MHUE).

Community Stakeholders:

Meetings were also organised with customary authorities and community members from Cité Moumina, Lac Assal and Layta. These meetings, along with household surveys and focus group discussions and key informant interviews, were arranged to introduce the Project and obtain baseline data.

At all of the meetings, details of the Project were presented and stakeholders were invited to ask questions and comment on the potential effects of the Project on the receiving environment, including the potential benefits of the Project to the local communities. A full list of participating stakeholders and number of attendees is presented in the Stakeholder Engagement Plan (*Volume II, Annex G*).

4.3.2 *Draft ESIA Engagement*

Stakeholder engagement on the draft ESIA report was undertaken in May 2018 to:

- provide a Project update to stakeholders and inform them of the ESIA process;
- present the findings of the draft ESIA Report;
- discuss potential environmental and social impacts associated with the Project and seek feedback on proposed management and mitigation / enhancement measures;
- identify and discuss any issues of concern;
- explain the grievance mechanism for the Project; and
- provide stakeholders with an opportunity to ask questions.

The meeting was held at the community building at Lac Assal community and was attended by 16 participants. Unlike the public meeting on the draft Scoping Report, this meeting focused on each of the identified impacts associated with the Project and the proposed management and mitigation measures in order to seek feedback.

4.3.2 *Summary of Stakeholder Meetings Held*

Date	***Stakeholder***	***Participants***		
		Male	*Female*	*Total*
Government meetings				
12 Dec 2018 17-19 Feb 2018 3 May 2018	Electricté de Djibouti (EDD)	1		1
11 Feb 2018	Ministry of Agriculture	1		1
26 Feb 2018	Ministry of Habitat, Urban Planning, Environment and Town Planning (MHUE)	1		1
2 May 2018	Environment and Sustainable Development Directorate (part of MHUE)	2		2
	Total	*5*		*5*
Local level meetings				
8 Feb 2018	Arta Prefecture, meeting with Prefect	1		1
10 Feb 2018	Cité Moumina, Focus Group discussion with customary authorities	2		2
10 Feb 2018	Karta authority	1		1
11 Feb 2018	Tadjourah Prefecture, meeting with Prefect	1		1
14 Feb 2018	Public consultation in Lac Assal village. Attendees included: Sub-prefect and Village Chief of Lac Assal, members of local associations (including the Women's and Youth associations)	11	2	13
17 Feb 2018	Meeting with Okal, customary authority	1		1
17 Feb 2018	Public consultation in Cité Moumina community. Attendees included customary authorities and village elders.	6		6
19 Feb 2018	Focus group discussion, Cité Moumina / Lac Assal Women's Assocation		2	2
18-19 Feb 2018	Interviews with key individuals and groups (such as livestock breeders, fishermen) during the social baseline engagement.	7		7
15-19 Feb 2018	Household surveys were completed with 40 households in the Project area during the social baseline engagement.			40
3 May 2018	Public consultation in Lac Assal's Community Building. Attendees included: Sub-prefect and Chief of Lac Assal, Lac Assal Women's Assocation, Okal General, Imam of Cité Moumina Mosque, Makaban (customary authorities representing the Debné tribes) and community members.	14	2	
	Total	*30*	*6*	*74*
	Grand Total	***35***	***6***	***79***

4.4 Outcomes of Engagement

The response to the Project has, on the whole, been positive with support expressed in all the meetings held.

Key concerns raised by the residents of the local communities regarding the Project and how the Project has addressed these and other concerns is outlined in *Section 6.6*.

The minutes and list of attendees of the public meetings are presented in the Stakeholder Engagement Plan. Methods for engagement during Project operation are outlined in *Volume II, Annex G.*

4.5 Grievance Mechanism & Feedback

The following feedback channels have been available to stakeholders throughout the ESIA process:

- in writing (Project contact details provided in Scoping Report);
- focus group discussions and key informant interviews (during baseline data collection and draft ESIA engagement); and
- public meetings (during draft ESIA engagement);

A grievance mechanism will be established to respond to and resolve stakeholder concerns during future Project activities. Grievances may take the form of specific complaints or concerns or perceived incidents and impacts. Grievances can be raised confidentially and without repercussion.

The grievance process involves the following steps: record the grievance; acknowledge the grievance; investigate the grievance; develop a response; communicate the response and establish agreement on next steps; and close-out process.

The consortium has already appointed a Community Liaison Officer (CLO) for the Project, who is responsible for grievance management. Grievances are passed through the CLO in the first instance, who will report these to the Project EHS Manager to address.

Contact details for the Project CLO are provided below.

Name: Mr. Houssein Kassim Mohamed
Tel: +253 7781 8999
Email: houssein_kassim@yahoo.fr
hkmadj@gmail.com

An indicative Project feedback mechanism is illustrated in *Figure 8*.

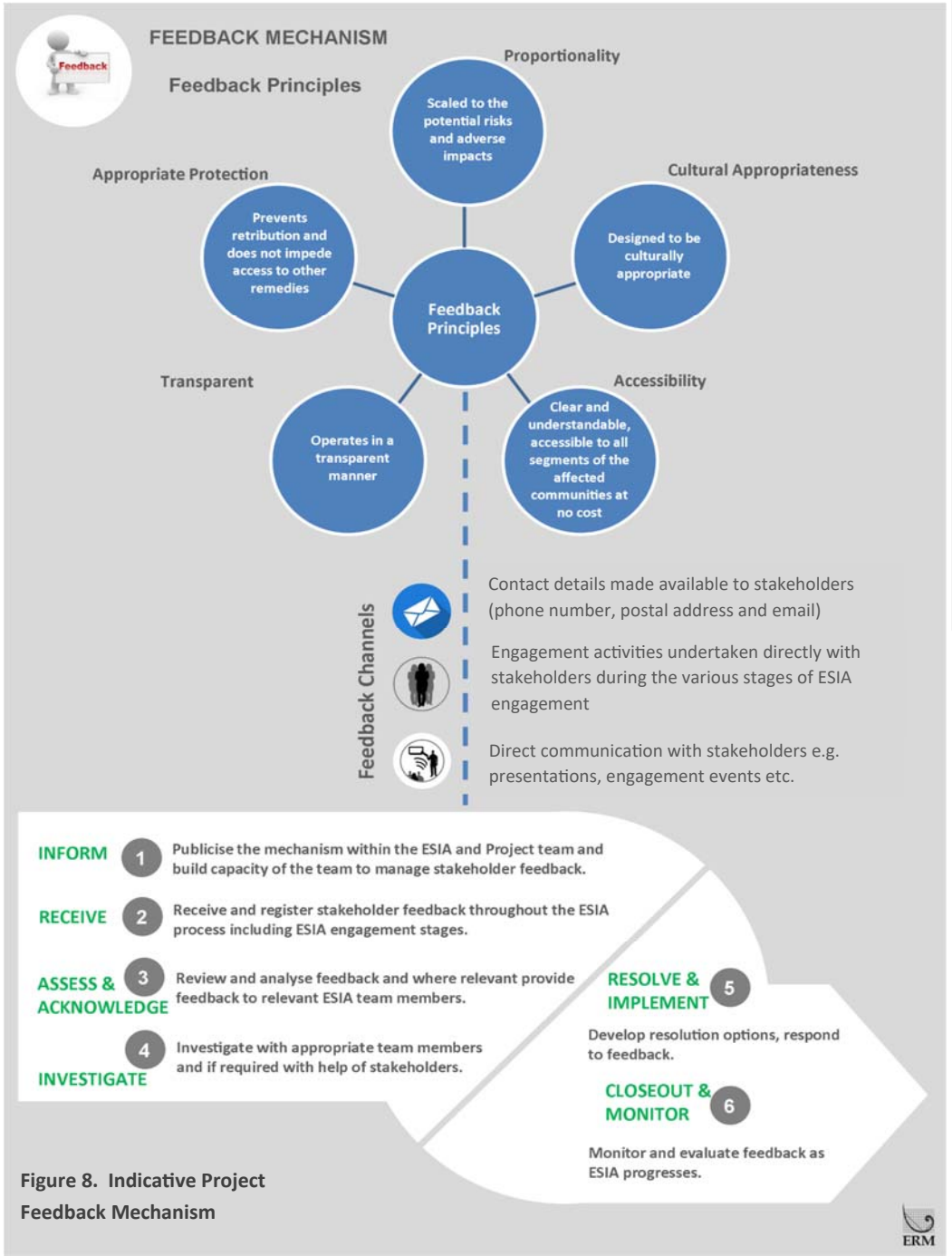

Figure 8. Indicative Project Feedback Mechanism

5.0 ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT METHODOLOGY

5.1 Overview of ESIA Process

The key objectives of the ESIA process are to assess the potential environmental and social impacts associated with the construction and operation of the Project, and to identify measures that can be adopted to avoid, minimise or offset adverse impacts. The process also identifies ways to enhance any beneficial impacts of the Project.

The ESIA process is an iterative process centered on design interaction as shown in *Figure 9*.

5.2 Scoping

The aim of the scoping process is to identify Project effects that have the potential to be significant and to exclude (scope out) from the assessment those effects that are unlikely to be significant. During the scoping phase a summary of available high level baseline information was collected, key potential environmental and social impacts and sensitive receptors and resources were identified and the impact assessment methodology was defined.

5.3 Collection of Baseline Data

The "baseline" describes the existing environmental and social conditions of the Project. It is this baseline against which the potential effects of the Project can be assessed. Primary and secondary environmental and social data were collected in order to enhance understanding of the receiving environments. The full baselines for each assessment topic are presented in *Volume II* and supporting specialist annexes in *Volume III*.

5.4 Stakeholder Engagement

Periodic engagement has been undertaken with stakeholders throughout the ESIA process and stakeholders' views were incorporated into the assessment process - see *Section 4* of this document. The engagement process was aligned with the IFC's PSs. The stakeholder engagement plan developed for the Project, presented in *Annex G* of *Volume III*, provides a full list of stakeholders that were consulted throughout the ESIA process.

Figure 9. Overview of the ESIA Process

5.6 Assessment of Impacts

SPATIAL SCOPE

The spatial scope or study area for the ESIA takes into account the physical extent of the Project components/ activities and the nature of the affected resource, the source of impact and the manner in which the resultant impact is likely to spread beyond the physical extent of the Project activities. This is also known as the Area of Influence or AoI.

For the Project, the direct AoI is defined by the spatial extent of the footprint created by the core Project components and associated facilities, and their associated effects on the physical, biological and socioeconomic environments.

In accordance with the definition in IFC Performance Standard 1, the direct AoI for this ESIA includes the following Project components:

- **Core components:** on-site access roads; wind turbines; foundations; crane pads; on-site overhead cabling; temporary laydown areas; temporary construction camps; transformer; on-site substation and meteorological mast; and 3.5 km transmission line connecting Project to EDD Ghoubet substation and national distribution network.
- **Associated facilities:** borrow pits used to supply aggregate to make cement for turbine foundations and to construct on-site access roads; cement batching plant; and upgrades to public road network to allow transportation of Project materials and equipment.
- **Third party activities:** waste disposal sites; water provision and transport; and port and public road network for delivery of Project materials and workforce.

However, it must be noted that the AoI can vary with receptors, where this is the case, it is stated in the topic-specific assessments in *Volume II*.

5.6 Assessment of Impacts *[continued]*

TEMPORAL SCOPE

The assessment considers the construction and operation of the Project. The construction is planned to start in Q1 of 2019 and will last for between 12 to 18 months. The windfarm has an operational design life of 25 years. Decommissioning was not considered in detail within the scope of this assessment due to the longevity of the operational phase.

TECHNICAL SCOPE

The Scoping Report identifies the technical topics to be assessed and the rationale for their inclusion in or exclusion from the ESIA. Topics such as Ecology, Noise and Community Health have been assessed. A copy of the full scoping report is provided in *Annex A* of *Volume III.*

The assessment methodology used for this ESIA is based on ERM's global standard for completing impact assessments (as detailed in *Section 7* of *Volume II)*. An activity or impact may result in a variety of types of effects. In identifying these, the ESIA takes into account their probability of occurrence, nature, duration and other factors (i.e. magnitude of effect). This is considered with the sensitivity or value of receptors to determine the significance of potential impact. A summary of the potential Project impacts assessed in the ESIA, as well as mitigation considered to lessen these impacts is provided in *Section 6* of this document.

5.7 Alternatives

As mentioned in *Section 2*.6, the key environmental and social constraints identified during scoping influenced the Project design early in the ESIA process. This allowed the majority of significant impacts to be avoided, for example, siting turbines >500 m from residential buildings to avoid noise impacts to residents, and siting all turbines outside of the main wadi channels to avoid impacts to drainage channels, biodiversity and the communities that rely on them as an footpath network. Additionally, alternative turbine makes, models, numbers, layouts and construction logistics will be considered (further detail is given in *Volume II, Section 4*) during the detailed design to further reduce potential impacts.

The Project will use the existing public road network to access the site and will benefit from being in proximity to the Ghoubet substation being constructed by Electricté de Djibouti (EDD) which will evacuate electricity produced by the Project into the national grid.

5.8 Assessment of Cumulative Impacts

Cumulative effects result from incremental changes caused by other past, present or reasonably foreseeable development together with the cumulative effect and those from the Project. In most instances past and present development (e.g. the Salt Investment development) will have been captured in the baseline for the Project (e.g. through noise measurements) and the normal practice of 'adding' impacts from the Project to the baseline will assess the cumulative impacts.

Other known developments currently being considered in the vicinity of the Project include:

- a geothermal power installation near Lac Assal, north of the Project site (not yet permitted); and

- an electricity transmission corridor that will run along the RN9 and RN4 roads towards Djibouti City and the associated EDD Ghoubet transformer (both permitted), which the Project will connect into.

However, at the time of conducting the ESIA, no further details could be established for either of these developments. Therefore cumulative effects have not been considered. If this information does become available, a cumulative assessment should be completed (especially with regard to potential construction traffic, social, labour and landscape and visual cumulative impacts).

5.9 Management Plans

Following the assessment of impacts, an Environmental and Social Management and Monitoring (ESMM) framework is developed. This sets out how the impact mitigation and management measures will be put into practice through a suite of specific plans. The ESMM framework includes defining the responsibility, timing and reporting requirements associated with each measure. Refer to *Section 7*.

5.10 Disclosure

The ESIA report will be disclosed to interested stakeholders. The Ministry of Housing, Urban Planning, Environment, & Town Planning (MHUE) will draw up a memorandum of all comments received.

5.11 Assumption & Technical Difficulties

Every effort has been made to obtain data concerning the existing environment and to accurately predict the effects of the Project. The Project-specific aspects of this ESIA have drawn upon existing literature, Project-specific documentation, communication with consultees, stakeholders and local experts.

Assumptions adopted in the evaluation of effects are discussed in the relevant sections. However, these assumptions are often implicit, relying on expert judgement. Where technical deficiencies are known, or it has been necessary to make assumptions, these are documented.

The ESIA has been undertaken during the design phase of the Project and therefore some of the technical aspects of the Project have yet to be determined. Should a change in design of the Project occur with potentially significant effects to the environment or society then stakeholders will be consulted and amendment(s) to the ESIA prepared as deemed appropriate.

6.0 IMPACT ASSESSMENT SUMMARY

6.1 Current Conditions, Project Impacts, Benefits and Mitigation - Environmental

This section provides a summary of current conditions, environmental benefits, potential adverse impacts, and key mitigation and management measures. The significance of impacts is shown in *Figure 11*.

	Summary of current conditions, potential impacts / benefits	Key mitigation / management measures (all measures are presented in Volume II of the ESIA)
Geology and Soils	The soils within the Project site comprise rock and salt flats. The soil is of very poor agricultural quality, and is simlar across the Project site and transmission line corridor. Areas affected by soil compaction will be localised and limited.	Project land take will be minimised through design. During construction, access across the site will be controlled to minimise areas of disturbance and soil compaction.
Surface Water and Groundwater	There are no known permanent surface water features on the Project site. However, there is a network of ephemeral surface water channels (wadis) present which, due to the arid climate, only rarely contain water. There will be some alterations to the wadi network during construction of the on site access roads. Groundwater will not be affected.	All Project components (permanent and temporary) have been sited outside of wadi channels wherever practicable to do so. Where access roads need to cross the wadi channels, culverts will be designed to allow free drainage.
Air Quality	The largest source of emissions affecting air quality will be fugitive dust from construction activities, including construction traffic and potentially blasting. The area of construction within the Project site is relatively small and the construction activities are local and short-term. Machinery/vehicle exhaust emissions will be localised and short-term (predominantly during construction. There are no residential settlements within the Project site or within 500 m of the site.	Construction site good practice will be used for the excavation, handling and transport of erodible materials, including dust control measures. Modern equipment and vehicles meeting appropriate emissions standards will be used. Vehicle speed restrictions will be enforced.
Biodiversity (excluding Birds & Bats)	The majority of plant and animal species recorded on site are all common and widespread, with the exception of two mammal species of conservation concern, the Dorcas gazelle and striped hyena. The habitat on site has the potential to support two endemic species (the Djibouti whip snake and a plant species, *Aloe ericahenriettae*) although neither were recorded during surveys. Their recorded presence in the wider area meets the thresholds for Critical Habitat under Criterion 2 of IFC PS 6 (Biodiversity Conservation). This is the highest level of sensitivity recognised by IFC PS6 and triggers the requirement for additional management measures to deliver a net gain for biodiversity. Project impacts include: vegetation clearance; disturbance to animals; potential mortalities from vehicle collisions; and the potential introduction of invasive species.	The Project footprint has been minimised and sensitive habitats avoided through layout design wherever practicable. Construction activity will be undertaken sequentially with access to other areas of the site controlled to reduce disturbance. Construction site good practice will be used, including appropriate management of Project waste and measures to minimise accidental leaks or spills into the natural environment. A Biodiversity Action Plan will be developed and implemented for the Project, setting out measures to deliver a biodiversity net gain for critical habitat features identified.
Bats	Specific baseline surveys for bats within the Project site have not been undertaken to date and hence the numbers and seasonal use of the site by bats has not been characterised. The assessment of impacts on bats is therefore precautionary. Based on a review of published information and species distributions, the majority of the bat species that may occur within the Project site are listed by IUCN as of least concern. Project impacts during construction include: vegetation clearance and increased human presence and activities on site causing disturbance. Collision with operating wind turbines is recognised as one of the key risks of wind power developments on bats. Bats which travel and hunt below tree height are typically less affected than bats which travel or hunt higher up and therefore spend more time within the rotor swept area.	Specific bat surveys will be completed prior to the start of construction. The Project footprint has been minimised and sensitive habitats avoided through layout design wherever practicable to do so. All turbines will be set back 200 m from escarpments which may provide roosting habitat for bats, thereby reducing the likelihood of bats interacting with active turbines.
Birds	During the ESIA surveys, the diversity and density of resident birds was extremely low and typical of an extremely arid habitat. Passerine (perching) bird species recorded were common and widespread and all are identified by IUCN as being of 'least concern'. These species are susceptible to loss of habitat and disturbance. During the surveys, Egyptian vultures were observed to the south of the Project site on three occasions. Egyptian vultures are listed as in rapid decline (IUCN 'endangered') and are susceptible to collision with turbines and transmission lines, as well as electrocution with some designs of transmission line. Surveys were only undertaken over 3 months during ESIA data collection, and other sensitive species may occur at other times of the year, particularly during late spring and autumn migration. Migratory soaring birds (such as steppe eagles, white storks etc) may also migrate through the Project site. Project impacts during construction include vegetation clearance affecting breeding/nesting species and increased human presence and activities on site causing disturbance. Once a windfarm is constructed, it may impact on bird populations by causing additional mortality through birds colliding with the turbines or associated structures including overhead lines. Birds are also known to be susceptible to electrocutions and collision with overhead transmission lines.	Additional bird surveys will be completed during Spring and Autumn. The Project footprint has been minimised and sensitive habitats avoided through layout design wherever practicable to do so. Check surveys for nesting birds will be undertaken prior to clearance of any vegetation. If active nests are recorded, clearance of the vegetation should be delayed. Avoid blasting and rock hammering during the breeding season, where practicable. No edible waste (e.g. remains of animal carcasses, bones etc. that would attract birds of prey) will be left on site during construction.

6.2 Current Conditions, Project Impacts, Benefits and Mitigation - Social

This section provides a summary of current conditions, social benefits, potential adverse impacts, mitigation and management measures. The significance of impacts is shown in *Figure 11*.

Summary of current conditions, potential impacts / benefits

Key mitigation / management measures (all measures are presented in Volume II of the ESIA)

Noise & Vibration

Noise measurements were carried out at Cité Moumina village and Lac Assal village, supplemented by measurements at the Salt Investment Compound. The monitoring confirmed that the Project site is already affected by noise sources (e.g., village activity, traffic, animals and wind) which generate high background noise levels (average background noise level of 56 to 58 dB(A) at the villages). The monitored background noise levels generally exceed the limits set by IFC for residential areas, both during the daytime and the night-time (limits of 55 dB(A) and 45 dB(A) respectively).

Noise emissions from construction equipment, vehicles and potentially localised blasting (to allow site clearance and excavation), will generate temporarily elevated noise levels at receptors located in proximity of work sites. The operation of the wind turbines and substation also have the potential to cause noise disturbance to adjacent residential receptors. Users of the mosque and school in Cité Moumina are also notable, potentially sensitive receptors during certain periods.

Construction equipment and vehicles will be equipped with abatement devices (e.g., mufflers, noise enclosures for generators).

Construction equipment and vehicles will be regularly maintained, in accordance with supplier specifications to prevent increases in noise emissions. Fixed plant items (i.e., generators) will be located as far from the nearest potential sensitive receptors as possible.

An Explosives Plan: Transport, Storage, Handling, Charging and Blasting will be developed and implemented.

An appropriate design of turbines and substation will be used to minimise noise, including adherence to relevant international acoustic design standards.

Employment, Procurement & the Economy

Receptors vulnerable to potential economic and employment impacts associated with the Project include the residents of nearby villages of Cité Moumina and Lac Assal. However, given the small population in these settlements, employees are likely to be sourced from urban and semi-urban settlements further away from the Project site. The socio-economic baseline indicates that there is a high dependence on one local company in the area (the Salt Investment company) and there has been a decline in more traditional activities (such as herding livestock and handicrafts).

The benefit to jobs and the local economy is predicted to be greatest during construction. However, there is also the risk of impacts on the wellbeing of the Project workforce as well as the potential for a disempowered workforce through the failure to provide suitable protective measures including protecting worker rights and ensuring worker health and safety.

All workers, including contract workers, will be given a contract in accordance with Djibouti Labour Codes, ILO core conventions and IFC PS2 requirements.

The Project will develop and implement a Human Resources Policy and Management Plan, including:

- an Occupational Health and Safety (OHS) Management Plan; and
- a Local Content Policy.

The Project will develop an Emergency Response Plan and Emergency Management Plan.

Worker accommodation will be managed by through a Camp Management Plan.

Figure 10. On site wadi channels used by herders

Land Use & Livelihoods

The proposed Project site is not extensively used by local communities other than as part of a migratory route for livestock. At present, livestock owners have free access to the Project site, which falls within the zone of land apportioned to the confederation of Debné tribes. Herders will still be able to access other parts of the land during construction. Accidents associated with livestock will also be very localised to the construction area and nearby road networks.

The Project will phase construction of the turbines to ensure that only 25% of the land is inaccessible at any one time.

The Project will implement a Stakeholder Engagement Plan outlining an approach to engagement and consultation with local residents, including the grievance procedure.

Community Health, Safety and Security

There are no health provisions in the local communities and the majority of households (85%) rely on the health clinic in Karta Sub-prefecture, approximately 20 km east of the Project site for basic treatment. The relatively small population in the Project area and limited healthcare provision leaves all residents of Lac Assal and Cité Moumina vulnerable to exposure and to the spread of communicable diseases and sexually transmitted illnesses, which may be brought in by construction workers and / or opportunistic in-migrants. Outbreaks of water-borne illnesses due to poor water borehole and water storage hygiene are already known to be common in the two communities. Increased road traffic and the movement of heavy vehicles and large loads may result in accidents and injury. Due to a change in the local socioeconomic setting, the Project is likely to influence relationships among community members and between different communities.

The Project has recruited a Community Liaison Officer who will be present at the Project site and will proactively and regularly engage with local communities.

The Project will develop and implement::

- a Workforce Code of Conduct for construction workers, governing their behaviour and interactions with local residents; and
- a worker EHS induction programme to include specifics on basic hygiene and sexual health.

The Project will establish a site clinic to provide workers with emergency medical treatment.

6.3 Current Conditions, Project Impacts, Benefits and Mitigation - Social *[continued]*

Public Services & Infrastructure

Road infrastructure is good and both Lac Assal and Cité Moumina are situated on the well-constructed national RN9 road.

Local services that may be sensitive to pressure from the presence of Project workers and an influx of opportunistic job seekers include water and the ambulance services. Electricity is not provided in the area and households rely on battery or in some cases, solar panels.

The Project intends to build a camp on site for the construction workforce.

The Project will develop and implement::

- a Camp Management Plan;
- a Waste Management Plan and Water and Wastewater Management Plan; and
- an Influx Monitoring Programme.

Landscape & Visual

The landscape of the area is characterised by high seismic and volcanic activities resulting in a series of escarpments running north west to south east. The Project site is rocky and barren with little vegetation. There are no landscape designations located within the landscape and visual study area.

Both construction and operational activities will impact the local landscape and visual amenity of local residents and visitors to the area.

A number of measures can be applied to reduce, as far as practicable, the temporary effects during the construction phase. These include:

- limiting land clearance;
- restricting construction site lighting; and
- maintenance of tidy and contained site compounds.

Due to the height of most of the Project elements, the open landscape and lack of natural vegetation, visual screening with vegetation will not be possible and is unlikely to mitigate any potential landscape and visual effects during operation.

Traffic & Transport

Potential receptors for the Project's traffic-related impacts include users of and residents near the RN1, RN3, RN9, and local roads.

Project construction will generate traffic associated with the movement of turbine and transmission line components from Doraleh Port and Djibouti to the Project site, movement of construction materials to the Project site, and transport of workers and worker-related supplies to the worker compound. Project traffic can impact the capacity of the existing road network, the physical condition of the roads, and safety risks on the public roads.

The Project will develop and implement: a Routing Study to identify the detailed route from Doraleh Port (or alternate port) to the Project site, and to identify specific road upgrades.

As part of a Project-related public engagement programme, the Project will regularly inform, educate, and update stakeholders about construction traffic, and related safety considerations.

Cultural Heritage

Thirty-five non-designated cultural heritage sites (confirmed assets and potential assets) were identified within the study area, including two cemeteries and multiple stone enclosures.

Construction of the Project will include the provision of access roads to the turbines within the Project site. Installation of the roads will require ground disturbance using mechanical equipment (and potentially blasting) to create a suitable road foundation and driving surface.

Although the Project has been designed to maintain a buffer from the known cemeteries, some stone enclosures will be bisected by the access road to Turbine 12.

Once the Project design (including transmission line corridor) is finalised, further archaeological site inspection will be undertaken before commencement of works to ensure all potential cultural heritage assets (i.e. rock structures) are avoided or, if unavoidable, these potential assets are assessed for their cultural heritage value and appropriate management measures are implemented (if required).

Access to the Lac Assal village cemetery and Le Garabl'iya camp & cemetery, as well as the pastoral goat shelters identified across the Project site and used as part of the tradition of goat herding, will be maintained throughout operation.

The Project will design and implement a Chance Finds Procedure to manage any unexpected discovery of archaeological material in-line with national and international requirements and guidelines.

6.4 Summary of Positive Project Impacts

Positive impacts and benefits the Project will provide, include:

- **Economic & community development:** Employment opportunities generated by the Project during construction and operation will have a positive impact on the local economy. The Project is also committed to some community development and Corporate Social Responsibility initiatives.
- **Tourist attractions:** Any changes to public roads required by the Project will improve overall conditions and improve access to Lake Assal and Lake Ghoubet. The windfarm itself also has the potential to be a tourist attraction.
- **Local access:** New access roads on the Project site will increase accessibility of the area for local communities.
- **Power generation & infrastructure:** The Project will increase the availability of electricity and stimulate the development of power infrastructure in the area.
- **Reduced Green House Gas (GHG) emissions:** Wind energy facilities do not typically generate emissions during their operation. Additionally, energy generated from renewable sources, such as wind turbines, will avoid emissions that will otherwise be produced wholly or partly from more carbon-intensive higher GHG emitting sources.
- **Clean domestic energy:** The energy produced by this Project will contribute towards Djibouti's goal of producing all domestic energy through renewable sources by 2020. Additionally, operation of the Project will reduce Djibouti's dependence on importing energy subject to volatile oil and gas prices.

6.5 Residual Impact Summary

Figure 11 is a 'heat map' summary of the residual impacts identified during the ESIA for the construction and operation of the Project. Most residual impacts are either not significant or of minor significance after mitigation. Only three impacts are assessed as being of either moderate or major significance.

Significance	Significance Context
Negligible	A resource/receptor (including people) will essentially not be affected in any way by a particular activity or the predicted effect is deemed to be 'imperceptible' or is indistinguishable from natural background variations.
Minor	A resource/receptor will experience a noticeable effect, but the impact magnitude is sufficiently small (with or without mitigation) and/or the resource/receptor is of low sensitivity/ vulnerability/ importance. In either case, the magnitude should be well within applicable standards.
Moderate	Has an impact magnitude that is within applicable standards, but falls somewhere in the range from a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit.
Major	An accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors.

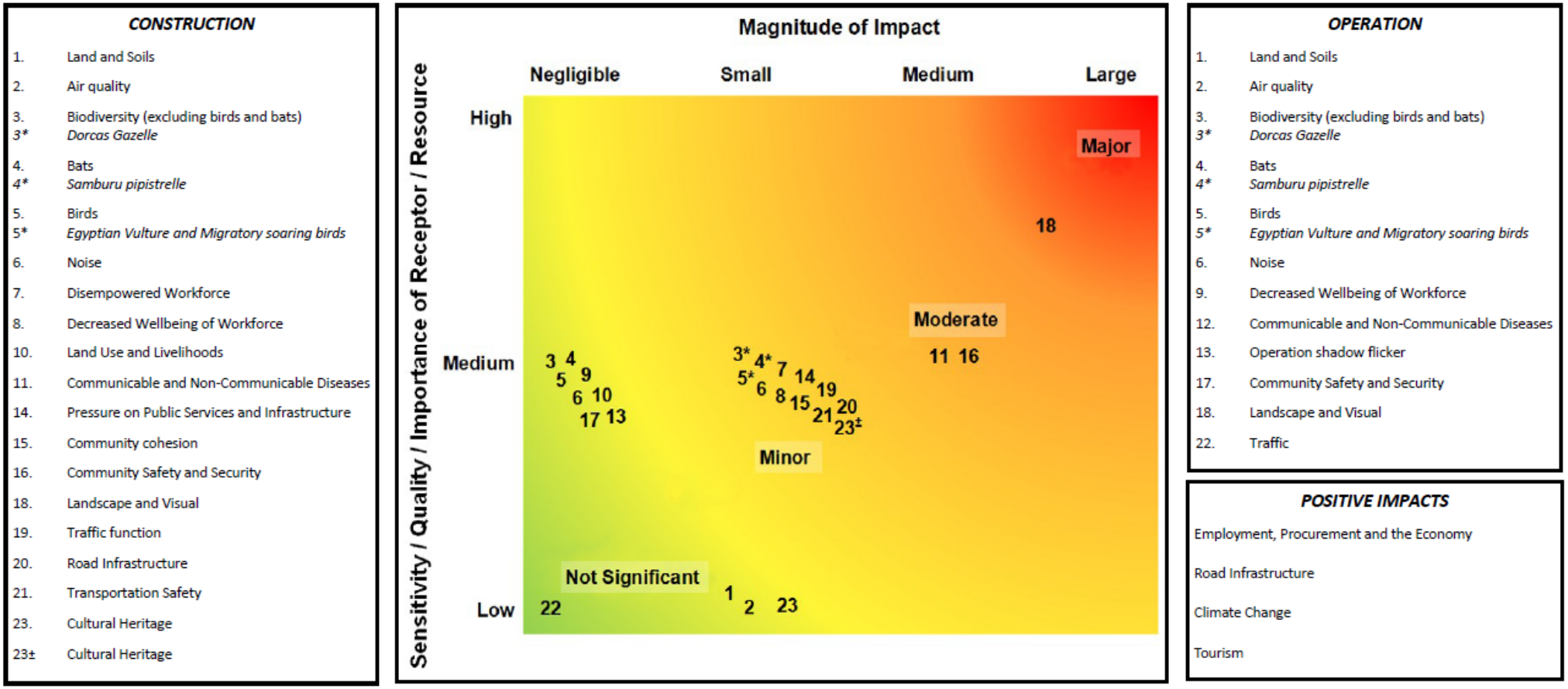

Figure 11. Summary of Residual Impacts

6.6 Project Response to Stakeholder Concerns Raised to Date

Subject	Issue	Project Response
Land Use and Land Take	- The Project footprint does not constitute a major issue for the community. The affected land is unsuitable for any productive activity, and the Project is thus not expected to hinder any agricultural or pastoral projects of the residents. - Some concerns were raised about the project actually materialising: reportedly projects have been planned in the past with no follow through.	- Access will be temporarily restricted in small areas of the site during construction. The Project will engage with communities beforehand to minimise the impact and agree on alternative accessible routes. - The Project will employ a Community Liaison Officer who will communicate all Project developments to the communities so that they are informed of Project development progress.
Employment and the Economy	- Community members have high expectations in terms of access to jobs, both during the construction phase of the project and as a result of the electrification of the area. - Some members expressed concerns that outsiders will take the jobs, due to the lack of schooling and professional training of the local population – and this will reportedly be unacceptable for them.	- The Project will implement a Human Resources Policy and Management Plan setting out recruitment procedures, training requirements and targets around the hiring of local workers. - Local procurement will be prioritised where possible. - The Project will provide information on the specific jobs available and specific skills required, at least two months prior to the hiring period. This is to ensure opportunities are known in advance for unskilled and semi-skilled positions, which are more likely to be filled by local residents.
Demography and in-migration	- In Lac Assal, potential demographic increase as a result of the project is seen as an opportunity. Some concerns were raised related to unplanned or chaotic urbanisation, and waste management. - In Cité Moumina, the community members maintained that the presence of workers or jobseekers from other areas will be a concern for them, and thus the village elders should be updated continuously to manage any potential influx of people.	- The Project will aim to detract work-seeking in-migration to the Project area through the clear communication of Project labour needs and clear Project policies and procedures for recruitment. - The Project will implement an Influx Monitoring Programme and an Influx Management Plan (if influx is identified as a growing concern during monitoring programme) - The Project will implement a Grievance Mechanism that is easily accessible to local communities
Environment	- The community members were given the opportunity to ask questions regarding windfarms - noise pollution was the theme that raised most concerns.	- Noise emissions from construction will be temporary and limited to the duration of the equipment operations at the work sites. - It is planned that turbines will be sited at least 500 m from any dwellings to mitigate noise impacts. - The Project will commit to the IFC EHS General Guidelines on noise impacts: 45 dB(A) limit during operation at residential receptors.
Health and wellbeing	- No particular concerns related to health and safety during the construction phase, especially if local people were to be in charge of site safety. - Questions related to the safety of the area once the turbines have been installed (lightening and fears that the rotor blades may detach and fall).	- The Project will engage with the local community through the Community Liaison Officer about the risks and safety features of the wind turbines; turbine failure resulting in 'turbine throw' is considered unlikely. - Set-back distances (≥500 m) between turbines and residential areas will be incorporated into the design. - The Project will engage with the local community on what to do in the event of an emergency scenario such as turbine failure.
Cultural heritage	- There were concerns that the cemeteries located just outside the project perimeter will be damaged by the Project.	- The cemeteries are located outside of the Project site therefore direct impacts to them will be avoided. A suitable buffer has also been included in the turbine layout design.
Engagement during the Project	- Recommended means to set up a good communication and information sharing system between the project and the local communities.	- During the public consultation meetings, the EDD representative noted that there are plans for weekly meetings with the community. This plan was welcomed by the community. - The Project will employ a Community Liaison Officer who will communicate all Project developments to the communities. - A community grievance mechanism has been communicated and participants welcomed this.

7.0 ENVIRONMENTAL & SOCIAL MANAGEMENT AND MONITORING

7.1 Introduction

To effectively manage social and environmental issues identified during the impact assessment, an environmental and social management and monitoring (ESMM) framework has been developed (*Volume II, Section 9*). The framework identifies and outlines appropriate mitigation and management plans (as identified in *Section 6.2* to *6.5* above) that will be needed to achieve acceptable levels of environmental and social performance, through both construction and operation of the Project.

The consortium, with their contractor, will use this ESMM framework as a basis for developing the detailed management plans that will be required from the start of construction. These are expected to include the following, as a minimum:

- Workforce Code of Conduct
- Staff Construction Camp Management Plan
- Relevant Health and Safety Plans
- Construction Waste Management Plan
- Water and Wastewater Management Plan
- Pollution Prevention Procedure and Emergency Preparedness and Response Plan
- Community Development Plan
- Local Content Policy
- Stakeholder Engagement Plan (including grievance mechanism)
- Human Resources Policy and Plan
- Traffic Management Plan
- Security Management Plan
- Explosives Plan: Transport, Storage, Handling, Charging and Blasting
- Chance Finds Procedure
- Biodiversity Action Plan

The management plans developed for the Project will be practical and fully integrated into the consortium's Environmental and Social Management System (ESMS) - refer to *Section 7.4*. This will ensure alignment with corporate policies and procedures. The system will need to be fully integrated to enable the plans to be effective (i.e. covering environment, health, safety and security in an integrated manner).

Note, the Stakeholder Engagement Plan for the ESIA (listed above) has already been completed as part of the ESIA and is presented in *Volume II, Annex G*.

The consortium will have ultimate responsibility for implementing the management plans and for ensuring, via contract conditions, that the EPC Contractors are obliged to implement all mitigation and management measures relevant to their activities.

7.2 Approach to Management and Monitoring Plans

The detailed management plans for the Project will be developed to align with national regulatory requirements and Good International Industry Practice (GIIP) including that set out by IFC and World Bank Group.

The plans will incorporate the following components:

- **Activity**: a short description of the activity that is expected to result in significance impacts/risks.
- **Issue / Risk**: an overview of the issue or risk that needs appropriate mitigation and/or management.
- **Action / Mitigation Measure**: a description of the mitigation/ management measures that will be implemented to manage each significant impact/risk.
- **Performance Measure**: measurable indicators for each significant impact that provide an indication of the extent to which actions have been implemented and desired outcomes achieved.
- **Responsibility**: the party responsible for implementing the action.
- **Phase / Stage**: the Project phase or stage that the impact and mitigation measure is applicable, i.e. pre-construction, construction, operation and or decommissioning.

7.3 Guiding Principles

Guiding Principles used in the development of the management plans for the Project are presented below.

7.3.1 *Planning and Risk Identification*

- Compliance with the laws and regulations of IFC, World Bank Group and Djibouti.
- Completion of pre-construction / works surveys proposed in the ESMMF prior to the commencement of any works and activities.

7.3.2 *Management and Control*

- Commitment to the mitigation hierarchy in *Figure 12*, regarding the potential issues and risks from the Project.
- Commitment to regular reporting and the completion of corrective actions (where necessary) under the responsibility of EHS Management.
- Application of relevant and appropriate design standards and controls.
- Use of competent and qualified staff (including sub-contractors) to undertake actions, each of whom will have the required level of responsibility and resources.
- Commitment to the provision of advance training for all works staff (including sub-contractors) as part of their induction.
- Being prepared for emergency incidents and having adequate response plans in place (including health, safety, environment and community response).

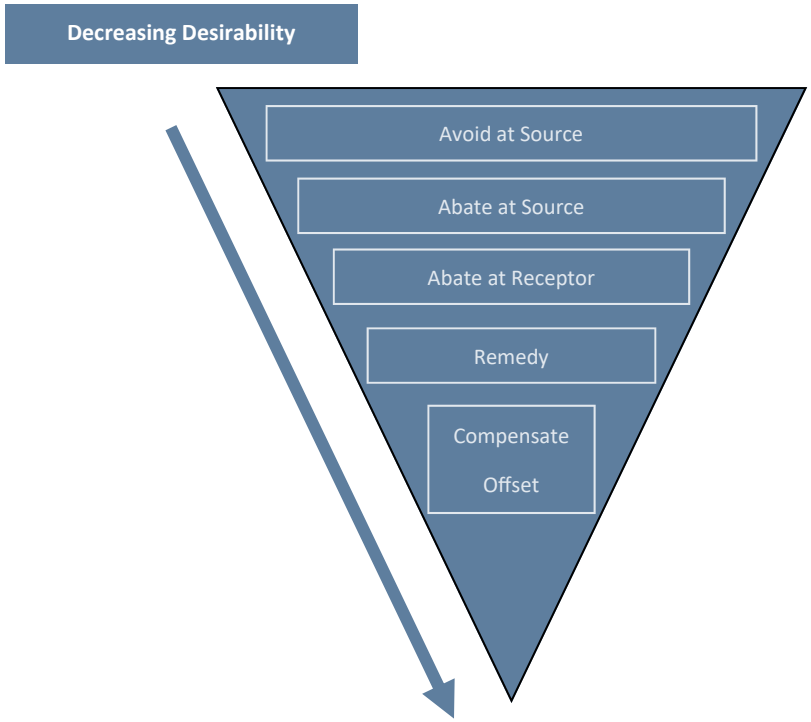

Figure 12. Mitigation Hierarchy

7.3.3 *Monitoring and Improvement*

- Commitment to regular monitoring and verification of the implementation of the management plans and the undertaking of remedial actions where needed. Monitoring and verification will be reported and made available for inspection upon request.
- All incidents will be reported and corrective actions will be taken as necessary according to management plan recommendations and the Consortium's procedures. This will enable and facilitate a process of continuous improvement.
- All grievances received will be addressed and investigated. The Project EHS Manager will be responsible for closing out all grievances.

7.3.4 *Ownership and Maintenance*

The consortium will have ultimate responsibility for implementing the management plans and for ensuring, via contract conditions, that the EPC Contractor is obliged to implement all mitigation and management measures relevant to their activities.

The management plans will be live, working documents and as such will require periodic review and updates if there are:

- changes or updates to Djibouti legislation or regulations;
- changes to the Project's social or environmental impact profile as a result of Project expansion, or other aspects with the potential for significant impacts on the environment or communities;
- changes or updates to IFC Performance Standards or World Bank EHS Guidelines; and
- lessons learned from incidents, non-compliances, audits or grievances.

7.4 Environmental and Social Management System (ESMS)

As previously mentioned, the ESMM framework summarizes the outcomes of the ESIA process, tabulating the commitments and actions that need to be taken forward through the next stages of the Project to ensure appropriate mitigation and management of Project related environmental and social impacts.

The framework provides a reference point and scope for the development of a suite of detailed management and monitoring plans for the Project. These plans will be developed and implemented by the consortium and their contractors as part of an integrated Project ESMS.