# Ibri II Solar Independent Power Project (IPP) Sultanate of Oman





Environmental and Social

Impact Assessment -

Volume 1 – Non-

**Technical Summary** 

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# 1 INTRODUCTION

In March 2019, the Oman Power & Water Procurement Company (OPWP) awarded the contract to construct a 500MW Solar Photovoltaic Power Plant in the Ad Dhahirah region of Ibri, Oman to a consortium of Saudi Arabia's ACWA Power and Kuwait's Gulf Investment Corporation and Alternative Energy Projects Company. The project award includes the design, engineering, construction, commissioning, ownership, financing, operation and maintenance of the Solar PV Power Plant known as the Ibri II Solar Independent Power Plant (herein referred to as 'the Project). This solar PV Power Plant will be developed as an Independent Power Project using bi-facial PV module technology and is structured under a Power Purchase Agreement (PPA) to operate for 15-years as a minimum.

ACWA Power has appointed 5 Capitals Environmental & Management Consultancy (5 Capitals) on behalf of the Project Consortium to conduct this Environmental & Social Impact Assessment (ESIA) for the Project. The ESIA has been informed by the Environmental & Social Scoping Report (Ref ESIA Volume 4, Appendix A) and in accordance with Omani environmental regulations and the applicable environmental & social standards of the prospective Lenders.

This ESIA Report will be submitted to the Ministry of Environment and Climate Change (MECA) in Oman as well to the international project lenders. The submission in Oman will be made by MECA registered consultant "Yahya Engineering" engaged by 5 Capitals to collaborate in preparing the ESIA studies.

It is understood that ACWA Power will seek project finance from International Financial Institutions (IFIs) whose requirements have also been considered in this assessment. Such requirements comprise the disclosure of the Project's environmental and social documentation for consultation with relevant stakeholders and Project Affected People.

This document presents a 'non-technical summary' of the Environmental and Social Impact Assessment (ESIA) for the proposed Project.

## 1.1 Objectives of the ESIA

The objectives of this ESIA in relation to this Project include the following:

- Assessment of baseline conditions prior to the development of the Project through review of available data and conducting surveys;
- Assessment of the project's environmental & social impacts for the construction and operational phases;



- Review of compliance obligations, including applicable Omani regulations and international regulations & standards as well as international lender requirements.
- To engage with key stakeholders and project affected people to disclose Project information, study outcomes, gain lay knowledge about the local environmental & social context, seek feedback on proposal and to understand & map any resettlement requirements.
- Determination of applicable mitigation and management measures to be implemented in order to avoid or minimise potential impacts.
- Consideration of alternatives that can be used for the project leading to greater social and environmental gains. This has notably included consideration of different Project layouts to avoid wadis identified at the scoping stage.
  - It was determined that an alternative plot configuration would reduce flood risk. There were also concerns regarding the camel race track located on the initial project layout which is recreationally and culturally significant in the regional context.
- Prepare a framework from which the construction phase and operational phase respective management systems and plans can be developed and implemented.

### 1.2 Structure of the ESIA

In order to comply with the requirements for environmental & social assessment established by MECA and international good practice, this report is presented in the following format:

- Volume 1: Non-Technical Summary
- Volume 2: Main Text, Tables & Figure
- Volume 3: Environmental Management and Monitoring Plan
- Volume 4: Appendices

### **1.3 Related Project Environmental & Social Documents**

It is noted that the Project's Environmental & Social documentation also includes the following, which are related, but have been prepared separately to the ESIA:

- Stakeholder Engagement Plan (SEP), Including Grievance Mechanism.
  - ref. to section 4.12 below for further details.
- Resettlement Action Plan (RAP)
  - ref. to section 4.11 below for further details.





# 1.4 Key Project Information

#### Table 1-1 Key Project Information

| Project Title  | Ibri II Solar Independent Power Plant (Ibri II Solar IPP), Sultanate of Oman   |  |  |
|--|--|--|--|
| PROJECT PROPONENT  | Oman Power & Water Procurement Company (OPWP)  |  |  |
| PROJECT OWNER  | ACWA Power & Gulf Investment Corporation and Alternative<br>Energy Projects Company  |  |  |
| EPC CONTRACTOR   | Consortium of Powerchina and Powerchina Huadong  |  |  |
| O&M COMPANY The First National Operation and Maintenance Company (NOMAC) |  |  |  |
| Environment Consultant   | Yahya Engineering (MECA Consultant)<br>P.O.Box 1537<br>Sultanate of Oman<br>Postal Code 131, Al Hamriya<br>Tel: +968 (0) 9 179 9170  |  |  |
| COMPANY NAME AND<br>Address  | 5 Capitals Environmental and Management Consulting (Sponsor's<br>Consultant)<br>PO Box 119899<br>Dubai, UAE<br>Tel: +971 (0) 4 343 5955<br>Fax: +971 (0) 4 343 9366<br>www.5capitals.com |  |  |
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# 2 PROJECT OVERVIEW

# 2.1 Project Location

The proposed project will be located in an undeveloped area of approximately 1,327 hectares in the Ad Dhahirah region of Ibri, Oman. The proposed site is located adjacent to the Highway 21 (Buraimi-Ibri highway) west of the town of Ibri, approximately 100km in land from the coast and approximately 100km away from the border with the UAE. The site's elevation is approximately 285m above sea level.

#### Figure 2-1 Proposed Project Site



Note: There was a previous alignment of the project site layout which was considered and included to the scoping report submitted to MECA. This was subsequently amended to optimise alignment with the interests of the local community and some local wadi's have been avoided to minimise the flood risk aspect to the project – as assessed in the ESIA package herein.





### 2.2 Project Description Overview

The Project will be developed as an Independent Power Project (IPP) utilizing photovoltaic technology to generate electricity. The scope of the Project works will include the development, design, engineering, construction, commissioning, financing, operations and maintenance of the 500MW solar PV Power Plant.

The proposed Project will utilize bifacial type Solar PV Panels that generate energy from both top and rear sides. The panels will comprise of PV cells within modules arranged in arrays upon single axis tracking system/ mounting structures. The PV modules will be designed and arranged to ensure the most efficient alignment for the capture of solar radiation. Mounting structures will be established within shallow foundations set into the underlying soils.

The ground covering in the solar project will comprise of a reflective geotextile layer to increase albedo for bifacial generation. The material shall be of PVC character covering 80% of the ground across the site.

#### 2.2.1 Project Associated Facilities

#### **External Access Road**

In order to enable easy access within and outside the Project site, the Project Company will construct the external access road outside the Project site. It is anticipated that the project will connect to the Buraimi-Ibri Highway via an external access road that will connect to the road that runs through the Ibri Independent Power Plant located at the south eastern boundary of the Project site.

#### **Electrical Connections & Substation**

The Project will require its own electrical connection facility on-site to enable connection between the PV Plant and the 220kV OETC substation located at the south eastern extent of the Project site. The PV Plant substation to be located at the east southern extent of the site approximately 430m from the OETC substation.

The Licensed Transmission System Operator (LTSO) will be responsible for developing the OETC substation.





# 2.3 Construction Timeline

#### Table 2-1 Anticipated Project Timeline

| MILESTONE FOR THE CONSTRUCTION OF IBRI II SOLAR IPP                                       |                |  |  |
|---|----------------|--|--|
| Milestone   | SCHEDULED DATE |  |  |
| Mobilisation Milestone  | 05.02.2020     |  |  |
| Electrical System Study   | 08.12.2019     |  |  |
| Scheduled connection date of Plant to Transmission<br>System, at the Connection Point     | 01.01.2021     |  |  |
| Scheduled energisation date of Plant from Transmission<br>System, at the Connection Point | 03.01.2021     |  |  |
| Plant   |                |  |  |
| Commencement of Start-up Test   | 28.02.2021     |  |  |
| Commencement of Reliability Run   | 28.03.2021     |  |  |
| Commencement of Performance Test  | 04.04.2021     |  |  |
| Scheduled Commercial Operation Date (SCOD)  | 01.06.2021     |  |  |
| Last Commercial Operation Date  | 18.12.2021     |  |  |





### **OVERVIEW OF LOCAL ENVIRONMENT & SOCIAL** 3 CONTEXT

### 3.1 Site Surveys

The process to undertake the ESIA included several visits to the Project site to conduct necessary baseline surveys, as well as consultations & engagement activities. These included:

#### Table 3-1 Site Visits

| SITE VIST PURPOSE   | Τεαμ  | PERIOD       |
|---|---|--------------|
| Site Familiarisation  | 5 Capitals  | October 2018 |
| 2nd Site visit and informal unstructured consultation with current land users | 5 Capitals & Yahya Eng'<br>(with ACWA Power, AllB<br>and AllB advisors) | May 2019     |
| Ambient Air Quality Monitoring  | 5 Capitals & Yahya Eng'   | June 2019    |
| 3 <sup>rd</sup> Site Visit for Asset Inventory Mapping                        | 5 Capitals & Yahya Eng'   | June 2019    |
| Noise Monitoring  | 5 Capitals & Yahya Eng'   | June 2019    |
| Soil Sampling   | 5 Capitals & Yahya Eng'   | June 2019    |
| Terrestrial Ecology Survey  | 5 Capitals & Yahya Eng'   | June 2019    |
| Site Visit for Archaeological Sites   | 5 Capitals & Yahya Eng'   | July 2019    |

### 3.2 Land Ownership

The proposed project site for development is owned by the Ministry of Housing. The Project Company has already entered into a Usufruct Agreement with the Ministry of Housing.

The Ministry of Housing through a Land Lease Agreement with the Project Company will grant the Project Company a Usufruct Right over the land to enable the Project Company undertake its activities on the site for an initial duration of 25 years.

As outlined in the sections below, areas of the Project footprint (and wider land areas) are being used for camel rearing and herding purposes. It is noted that all such land in the Sultanate of Oman is owned by the state, and any utilization of land by local sheikhs is through temporary permits. The nature of such permits is not confirmed in the context of the Ibri II IPP land area, however given the use of the land for several decades (as a minimum – advised during consultations) informal/customary land uses are considered to be applicable despite the land not being owned.





## 3.3 Land Use

Findings from site visits undertaken in October 2018 & May/June/July 2019 and review of satellite imagery identified few land uses within the Project site and these included:

- One (1) occupied camel farm;
- One (1) abandoned camel farm;
- Partial section of current camel race track;
- Old (disused) camel race track;
- Grazing camels;
- An unidentified concrete feature;
- Several disused or seasonally used camel pens; and
- Evidence of vehicle tracks.

In addition to the above land uses, review of satellite imagery and initial site visit undertaken on 1<sup>st</sup> October 2018 reveals that there are no expansive residential settlements within the project footprint. The nearest residential receptor i.e. expansive residential settlements outside the project site are located in villages few kilometers away from the Project site. However, it was initially identified during the visit in May 2019 that a small number of expatriate labourers live in a structure within the Project site, whilst tending to camels. During later visits and consultations it was confirmed that this includes two labourers who are employed by a group of local Sheikh's. They reside in the identified 'occupied camel farm'.

## 3.4 Site Conditions and Local Receptors

Besides the above outlined receptors identified within the Project site, previous studies, review of satellite imagery (from Google Earth) and site visits undertaken in October 2018 and May/June/July 2019 identified several receptors within 5km of the project site. The main sensitivities identified within a radius of 5km from the Project site include residential, agricultural, recreational and industrial premises and activities.

| LOCATION                           | LOCATION RECEPTOR      |                            | DISTANCE FROM PROJECT SITE  |  |
|------------------------------------|------------------------|----------------------------|---|--|
|                                    | Occupied Camel<br>Farm | Residential<br>Commercial  | Within the southern extent of the Project site.   |  |
| Within the<br>Project Site         | Camel Race Track       | Recreational               | Partially on the site and other areas<br>are directly adjacent to the western<br>boundary Project site. |  |
| External to<br>the Project<br>Site | Active Camel Farm 1    | Residential/<br>Commercial | Approximately 500m from the south-<br>eastern boundary of the Project site.                             |  |
|                                    | Active Camel Farm 2    | Residential/<br>Commercial | Approximately 600m from the eastern boundary of the Project site.                                       |  |
|                                    | Petrol Filling Station | Commercial                 | Approximately 5 km from the north east boundary of the Project site.                                    |  |

#### Table 3-2 Receptor Proximity to Site



# 4 SUMMARY OF MAIN ENVIRONMENTAL IMPACTS

# 4.1 Air Quality

Temporary construction impacts as a result of the project may result in increased dust generation, but will may impact receptors which are located at distance from the Project area. Such impacts are common for construction activities in dry environments and can be appropriately managed through the implementation of a robust CESMP. The operation of the project is not expected to result in any impacts to air quality.

## 4.2 Noise & Vibration

Temporary noise impacts will result from the construction phase of the project and will primarily be associated with heavy plant/equipment and construction vehicle movements. Temporary impacts related to construction processes on the site are not expected to be discernible at human receptors due to attenuation by distance. Mitigation has been stated in the ESIA (Volume 2) to ensure noise (and vibration) impacts are reduced where possible.

As a solar PV project, there are not expected to be noise impacts during operations.

## 4.3 Terrestrial Ecology

Despite the extensive nature of the site, terrestrial ecology has been identified to include a limited range of species diversity (flora & fauna) that do not appear to include protected species, or other known species of conservation significance in Oman or internationally. Similar habitats to those identified on-site are widespread and well connected (i.e. with limited severance) in the local/regional area. Similar habitats are observed towards the Oman – UAE border and towards the town of Ibri.

The construction phase will result in habitat loss due to site preparation activities, although as the habitats are not considered to be of high value (and due to the extensive similarities of other neighbouring habitats impacts are expected to be minimal. Mitigation has been included in the ESIA to reduce impacts to lizards, evidence of which were observed at the site, but more specifically in areas closer to the wadis, which are now being avoided due to the revised site layout.

The operational phase may provide elements of protection for any re-establishing lizard species (particularly small lizards who can access the site through the chain link fence line). The Project will provide some cover for these lizards due to the addition of geotextile material and the PV modules. It is possible that some birds may be attracted to the PV panels by a phenomenon called 'lake effect'. It is noted that there are no recorded migration routes for birds in the Project area, and as such this is not expected to be an impact for any migratory





species. Monitoring measures have been included in the ESIA to check and record any bird mortality on-site during the operations phase.

### 4.4 Geology, Soils, Hydrology and Groundwater

Soil samples at the site have been analysed and found to have no trace of pollutants that exceed the Dutch Intervention and Target Values.

Minor impacts to soil quality may occur during construction in the event of leaks and spills, or mismanagement of any hazardous materials or wastes (expected in very small quantities). Impacts to groundwater are not expected throughout the construction or operational phases of the Project.

### 4.5 Solid and Liquid Waste Management

Construction of the project may result in the generation of rubble waste due to excavations, expected large volumes of recyclable PV module packaging wastes, and very small quantities of hazardous wastes (such as used fuel containers, spent paint cans, lubricant cans and oil cans, vehicle/plant maintenance wastes). During operations, there will be relatively few waste streams, although defective PV panels and other maintenance wastes may be generated in small quantities on a continued basis. Other wastes will be minimal and varied, but may contain small quantities of hazardous components.

The ESIA outlines appropriate mitigation and management measures that can be implemented to suitably manage waste during both project phases. This will primarily involve the engagement of local waste contractors licensed in Oman or registered with Be'ah, including disposal to Be'ah managed sites.

The ESMS will include a dedicated waste & wastewater management plan, which will need to ensuring structures and processes on-site to apply the waste hierarchy; particularly for the construction phase, where there will be a large volume of recyclable content due to solar PV module packaging waste.

## 4.6 Archaeology and Cultural Heritage

Based upon the site visits undertaken in October 2018 & May-July 2019 there are known grave sites located approximately 500m to the south west of the adjusted Project layout. The present camels herders who help maintain the traditional camel herding and racing culture and camel racetrack on the Project site serve as an intangible cultural value Oman is historically known for its attachment to camels, which were a dependable source of not only transport but also food, milk and recreation (i.e. racing). In addition, a water tower styled in local Oman design was identified along the highway and this could be an item of cultural value.



Besides the relocation of the camel herders and the camel racetrack, the project will require a 'Chance Finds Procedure' in the construction phase ESMS in the event that any unknown buried archaeology is uncovered during construction.

## 4.7 Landscape and Visual Quality

The development of the Project will include the installation of thousands of PV panels, the construction of substations, administrative facilities, etc. which will distort the existing undeveloped landscape character. A key change will result from the loss of the view of the characteristic brown sands and gravel, as these will be replaced with a view of dark coloured flat PV Panels occupying an expansive area with geotextile surfaces between the panels.

Due to the low-lying design of the PV Plant, views across the wider landscape are unlikely to be significantly impacted. Given the distance of permanent receptors from the project site, this visual change from an open, unused landscape to low level infrastructure associated with the project is unlikely to have any significant visual impact. The Project area may however be visible at night due to the addition of security and lighting at the entrances and along the perimeters.

Mitigation measures related to the use of lighting have been included to the ESIA to minimise potential visual impact at night due to the introduction of lighting to this area.

## 4.8 Socio-Economic

The Project is a major energy centric intervention for the Wilayat of Ibri and the Governorate of Adh Dhahirah, which would add to the energy security and diversity of the Omani grid. This Project also has the potential to create a local supply chain for PV industries for the future as a future PV Project in Manah Wilayat of Adh Dhahirah, not too far from Ibri has been planned as well by 2021. Local Contractor Development is expected to gain momentum with this new PV Project.

This project is expected to create employment opportunities during the construction phase for unskilled and applicably skilled workers. Although not confirmed at this stage, ACWA Power's typical process for employment considers the availability of local talent in the first instance as well as the use of relevant contracting companies (for applicable sub-contractor works). The operational phase will require significantly less staff. Besides management and technical operator positions, the majority of staff will be security teams, panel cleaners and other office-based support staff. Such non-technical staff will likely be sourced locally based on ACWA Power's typical processes and observed track record of this in Oman and for other projects in the MENA region.





## 4.9 Community Health, Safety & Security

All construction projects have potential risks relating to public safety that could arise, particularly in regard to the use of high-powered equipment, heavy construction plant, excavations, transportation amongst others, including fire and pollution releases. Public risks during construction have the potential to result in isolated incidents, which could be of a devastating magnitude to a person or group of people in the wrong place at the wrong time. Risks that could be experienced include worker influx and disease and transportation impacts, as traffic will increase on public roads to deliver materials and equipment to the project site during construction. This may include an increase in road traffic incidents. In order to manage traffic related impacts (including safety risks to other road users), the EPC Contractor will prepare a Traffic Management Plan for implementation on-site.

Other risks will be appropriately assessed and prepared in the construction phase 'Emergency Preparedness and Response Plan' and training. Furthermore, security staff will be onsite during both the operation and construction phase.

### 4.10 Labour and Working Conditions

In the operation and construction phases, ACWA Power's HR Policy will provide the basis for upon which the projects HR Policy will be developed. Omani Labour Law as well as International ILO and UN conventions requirements will additionally be met in regard to Labour and Working Conditions. Factors such as occupational health and safety will be addressed.

Labour, Health & Safety, on-site working conditions and off-site camp living conditions for all contractor and sub-contractor staff will be monitored during the construction and operational phases of the project both internally and will also be subject to external auditing by the lenders independent engineer.

### 4.11 Resettlement Requirements

There are no statutory requirements in the Omani legal system for land acquisition and resettlement. However, IFC Performance Standard 5 provides guidance on 'Government led Resettlement', which is applicable for involuntary resettling of the camel herders, their camels and pens in the Project area. The camel racetrack, which partly overlaps with the Project site is also being relocated.

The Project will result in the involuntary displacement of the identified camel herders and part of the camel race track which overlaps with the Project footprint. The process for undertaking this has been agreed between ACWA Power, the local Wali and Sheikh's who own the camels and oversee the racecourse. It has been agreed to undertake all relocation in parallel with construction, to agreed areas by the Wali and Sheikh's off-site. The Wali of Ibri has issued a formal letter stating the reconfiguration of the project layout, which includes non-objection



The process for undertaking this has been agreed between ACWA Power, the local Wali and Sheikh's who own the camels and oversee the racecourse. It has been agreed to undertake all relocation in parallel with construction, to agreed areas by the Wali and Sheikh's off-site. The Wali of Ibri has issued a formal letter stating the reconfiguration of the project layout keeping in context the expectations from the local community, which includes non-objection from the Sheikh's.

The requirements for Resettlement have been specified in a separate Resettlement Action Plan (RAP). The RAP details the process undertaken to identify Project Affected People (PAP), benchmark their existing living conditions and specifies the entitlements related to the resettlement process against AIIB ESS2 and IFC PS5. The RAP includes a determined monitoring and reporting process, so that actions can be confirmed against key performance indicators, as well as a specific grievance mechanism so that PAP can raise concerns to the Project Company (if any). This process has been optimised for the camel herders who have potential vulnerability due to language and their expatriate status.

### 4.12Stakeholder Engagement & Grievance Mechanism

The ESIA has included various engagement with applicable stakeholders for a variety of purposes, including the required resettlement. The ESIA, RAP and SEP documents will be disclosed to identified stakeholders and will also be made available or download at the ACWA Power and AllB websites.

A separate Project related document that has been prepared is the Stakeholder Engagement Plan (SEP), which sets out the strategy and plan in regard to such engagements during the pre-construction, construction and operational phases. The scope of the SEP is to specify the methods to efficiently manage and facilitate future engagements with stakeholders through various stages of the project lifecycle.

This SEP has been prepared to align with applicable requirements of AllB Environmental & Social Framework, Equator Principle 5 and Equator Principle 6 that describes Stakeholders Engagement and Grievance Mechanism respectively, and the IFC Performance Standards, with particular relevance to IFC Performance Standard 1 on "Assessment and Management of Environmental and Social Risks and Impacts"; which describes the stakeholder's engagement requirements in more depth.

The SEP prepared for the Project has identified both impacted and interested parties. The impacted stakeholders include the camel herders, local Sheikhs (who own the camels and employ the herders), and the nearby Ibri 1 IPP. Other interested parties include government



agencies, as well as Non-Governmental Organisations and members of the public. The SEP details specific actions to be taken in regard to engaging with these identified stakeholders at different stages of the Project. The methods proposed have been optimised for the specific stakeholders to ensure inclusivity and engagement in a culturally appropriate manner for Oman.

The SEP also includes the detailed grievance mechanism, which will be available to both Project workers and external parties. The grievance mechanism will be available to receive complaints or other concerns/comments and can be accessed for free, with no retribution to users. If necessary, methods have been inbuilt to retain the anonymity of the aggrieved. The responsibility and accountability of the grievance mechanism remains with the Project Company, but the implementation of the mechanism may be made by the EPC Contractor and O&M Company respectively during construction and operations.

#### AllB's Project-Affected Peoples' Mechanism

The Project-affected People's Mechanism (PPM) has been established by the AIIB to provide an opportunity for an independent and impartial review of submissions from Project-affected people who believe they have been or are likely to be adversely affected by AIIB's failure to implement its ESP in situations when their concerns cannot be addressed satisfactorily through Project-level GRMs or AIIB Management's processes.

For information on how to make submissions to the PPM, please visit the <u>PPM webpage at:</u> <u>https://www.aiib.org/en/policies-strategies/operational-policies/policy-on-the-project-affected-mechanism.html</u>.

### 4.13 Climate Affairs

This PV Project will have minimum GHG emissions during the construction phase from stationary diesel generators. The PV project will aid Oman towards meeting its Paris Climate Goals as the project will potentially add to carbon offsets.

The weights of GHG emissions offset over the operational period has been calculated using the UNFCCC IFI Dataset of Default Grid Factors (2019) and is based on data provided by the EPC Contractor for predicted generation capacity against an Oman grid energy mix emissions factor:

| YEAR | EPC CONTRACTOR (FM FIGURES)<br>ANNUAL OUTPUT (KWH) | RELATIVE (NET) EMISSIONS<br>(TCO2E/YEAR) |
|------|--|--|
| 1    | 1.624.374.000                                      | 803.221                                  |
| 2    | 1.621.157.000                                      | 801.630                                  |
| 3    | 1.617.800.000                                      | 799.970                                  |
| 4    | 1.614.315.000                                      | 798.247                                  |
| 5    | 1.610.695.000                                      | 796.457                                  |





| 6  | 1.606.929.000 | 794.595    |
|----|---------------|------------|
| 7  | 1.603.055.000 | 792.679    |
| 8  | 1.599.053.000 | 790.700    |
| 9  | 1.594.939.000 | 788.666    |
| 10 | 1.590.720.000 | 786.580    |
| 11 | 1.586.382.000 | 784.434    |
| 12 | 1.581.942.000 | 782.239    |
| 13 | 1.577.395.000 | 779.991    |
| 14 | 1.572.746.000 | 777.692    |
| 15 | 1.568.001.000 | 775.345    |
|    | TOTAL         | 11.852.444 |

Note: Methodology and Data, based on the following:

- IFI Approach to GHG Accounting for Renewable Energy Projects (2015);
- IFI\_Dataset\_of\_Default\_Grid\_Factors\_11.05.19.

### 4.14Cumulative Impacts

The ESIA has assessed cumulative impacts of several environmental parameters where applicable (e.g. construction noise), which has considered the measured baseline conditions in combination with the predicted process contributions.

There is no available information regarding confirmed future development plans in the local project area, so a future cumulative impact scenario has not been undertaken in the ESIA.

# 5 Environmental & Social Management & Monitoring

Volume 3 of the ESIA provides a 'Framework Environmental & Social Management and Monitoring Plan' (ESMMP) to guide implementation of the wider Environmental and Social Management System (ESMS) following on from the ESIA for the Ibri II IPP ("the Project") specifically.

The Framework ESMMP has been informed by the outcome of the ESIA study and it has been developed to establish a framework so that the assessed Environmental and Social risks and impacts associated with both the construction and operational phases of the project can be controlled through the development of management programmes within the construction and operational phase ESMS'. This is so as to eliminate, offset or reduce potential adverse environmental & social impacts to acceptable levels.

This Framework ESMMP has also been prepared to ensure alignment with applicable elements of the established ACWA Power corporate level Health, Safety Security and Environment

(HSSE) Management System Framework, which is intended to ensure consistent and structured HSSE project management between ACWA Power projects.

Both the construction and operational phase ESMS will need to incorporate mitigation and monitoring requirements established within Volume 2 of the ESIA as well as any and all future requirements defined by the Statutory Environmental Body (MECA) and the project lenders.

The primary documents guiding the environmental and social management of the construction and operational phases will be the Construction Environmental & Social Management Plan (CESMP) and the Operational Environmental & Social Management Plan (OESMP) respectively.

## 5.1 Independent Monitoring

The project will be subject to periodic independent monitoring in accordance with the requirements of the lenders, as per Equator Principle 9, along with the policies of AllB and terms of AllB loan agreement. The scope of the independent audits will include the implementation of the projects ESMS and will evaluate on-site activities and documented controls and monitoring efforts, with respect to the Project's compliance obligations.

# **6** SIGNIFICANCE OF RESIDUAL IMPACTS

Following the implementation of the design based and additional recommended mitigation measures as identified in the ESIA, residual impacts are assessed to be either of a minor or moderate significance.

# 7 Environmental & Social Disclosure

### 7.1.1 E&S Disclosure Sessions

As part of AllB's process to reach board agreement and in line with other lending banks international good practices for environmental & social management, ESIA disclosure sessions took place with relevant Project stakeholders in October and November 2019.

The purpose of these sessions were to invite Project Affected People and other relevant stakeholders to present an overview of the Project, the Environmental & Social assessment process undertaken; prepared management plans (RAP and SEP – including the grievance mechanism) and to receive feedback, where applicable to be incorporated to finalise the E&S documents.

An overview of the meetings are outlined below. Full minutes of each session are provided in ESIA Volume 4, Appendix G:

TOWA POWER



#### Table 7-1 E&S Disclosure Sessions

| Date       | LOCATION                                 | STAKEHOLDERS   | LANGUAGE           | OVERVIEW OF SESSION  | Рното |
|------------|--|--|--------------------|--|-------|
| 14/10/2019 | Camel<br>Herder<br>Compound<br>(on-site) | Camel Herders<br>(to be resettled)<br>Meeting<br>provided<br>separately as<br>the herders had<br>been identified<br>as potentially<br>vulnerable due<br>to language<br>and social<br>status. | Bangla &<br>Arabic | PAPs were provided with an overview<br>of the Project, the ESIA process that<br>had been undertaken, the relevance<br>to them. In terms of their resettlement,<br>they were already aware, but advised<br>of the process that would be<br>undertaken, the approximate location<br>of their new accommodation and race<br>track (as per RAP). Future engagement<br>was explained to them (as per the SEP),<br>as was the process by which they can<br>raise grievances or other queries to the<br>Project (as per SEP). Feedback and<br>queries were sought.<br>The PAPs were generally positive and<br>very happy to be included to the<br>disclosure process. |       |
| 11/11/2019 | Governor of<br>Ibri Office               | Governor of Ibri,<br>Wali of Ibri,<br>Royal Oman<br>Police, CID,<br>Security and<br>Armed Forces<br>leaders, Majan<br>Electricity (Ibri<br>IPP) personnel,<br>Majilis Shura,<br>Oman Power   | Arabic             | The meeting commenced with a<br>welcome from the Governor of Ibri,<br>followed by opening remarks from<br>Yahya Engineering on Project, ESIA,<br>RAP, SEP and Grievance Mechanism.<br>ACWA Power provided a presentation<br>of the Project, which was followed by a<br>questions and answer session.<br>A press release to advise on the Project<br>and the meeting was inserted to<br>several local publications by the local<br>media on 12/11/2019 (ref. ESIA<br>Appendix G).   |       |





### 7.1.2 Online E&S Disclosure

It is further noted that the ESIA (all volumes, including Arabic non-technical summary), SEP and RAP have been disclosed publicly online at ACWA Power's website since 11<sup>th</sup> November 2019. Access to all Project Environmental & Social documents can be gained from the links below:

https://www.acwapower.com/en/projects/ibri-2-ipp/

https://www.acwapower.com/en/sustainable-responsibility/hsse-management/