

Environmental and Social Data Sheet

Overview

Project Name: ONEE - NOOR ATLAS
 Project Number: 2016-0665
 Country: Morocco
 Project Description: The "Noor Atlas" Project consists of the construction of 7 photovoltaic (PV) power plants in Morocco, with a total capacity of 240 MW.

EIA required: Yes

Project included in Carbon Footprint Exercise¹: Yes

(details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Environmental and Social Assessment

The project consists of the construction and operation of seven photovoltaic (PV) power plants, with a total capacity of 240 MW located in the east and south of Morocco as per the indicative table below:

Name of the plant	Region of Morocco	Power (MW)
Ain Bni Mathar	Oriental	36
Outat El Haj	Fes-Boulmane	36
Enjil	Fes-Boulmane	36
Boudnib	Meknes-Tafilalet	30
Bouanane	Oriental	30
Tata	Souss-Massa	36
Tan Tan	Guelmin-Smara	36

The project scope includes the power plants and the associated roadwork and grid infrastructure required to make the project operational. In particular, associated infrastructure includes one 30 km 60 kV overhead transmission line for the plant of Enjil, one 7 km 60 kV overhead transmission line for the plant of Tan Tan and one 1 km 60 kV overhead transmission line for the plants of Boudnib and Outat El Haj. The transmission lines will evacuate the energy output of the respective plants. The remaining plants will connect to the network through adjacent existing substations or overhead lines.

The project contributes to the objectives of the Moroccan Solar Plan, which aims at installing 2 GW of new solar capacity in the country by 2020, and it supports the Moroccan goal of reaching a level of 52% of installed capacity based on renewable energy by 2030. The project will also contribute to the Promoter's target to increase grid-connected PV to 400 MW by 2030.

Furthermore, the decentralized generation of solar energy at the end of transmission lines is also intended to improve the energy security of the respective regions by stabilizing the local grid and reducing transmission losses.

The project will be co-financed by the Bank and Kreditanstalt für Wiederaufbau (KfW). Project implementation is expected to start, at the earliest, in July 2019 and to end within the year 2020.

¹ Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO₂e/year absolute (gross) or 20,000 tons CO₂e/year relative (net) – both increases and savings.

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The project and its accessory infrastructure occupy an overall area of 1,237 ha. Whilst choice of the plant locations is linked to grid impact optimisation, project sites were chosen because of their good solar resource and ease of access and grid connection.

Within the EU, the project would fall under Annex II of the EIA Directive, leaving it to the Competent Authority to decide whether an EIA would be mandatory or not. At a national level, the Noor Atlas project is subject to the Moroccan EIA Law (Law no 12-03 of May 2013). This law, generally in line with the principles of EU directives, and its implementing decrees (November 2008), requires each plant to undergo an ESIA so as to demonstrate its environmental and social acceptability and to obtain the necessary permits from local authorities. These ESIA's should then be submitted to the *Comité National des Études d'Impact* (CNEI) together with the results of the public inquiries. The CNEI then formulates its recommendation to the Ministry of Environment which issues the environmental consents.

So far, the Promoter has prepared a Framework Environmental and Social Impact Study (F-ESIA), inclusive of a Framework Environmental and Social Management Plan (F-ESMP). The F-ESIA provided a baseline environmental and social assessment of the project sites, aimed at informing the process of integration of environmental and social concerns in the project development. The F-ESIA was drafted by a specialised technical consultant and financed by KfW. The F-ESIA included also an eighth site, the development of which was later abandoned by the Promoter and which is therefore outside the scope of the project.

Whilst preliminary studies have been completed, the final capacity, final electricity output, detailed technical choices, final costs and site-specific studies will only be known once the procurement phase has ended. Therefore, the F-ESIA considers impacts of the different possible technologies (crystalline silicon, thin-film, tracking mode, etc.) and the F-ESMP covers institutional settings, general environmental and social risks and mitigation measures and a monitoring plan for both the construction and operational phases.

The Promoter is responsible for the overall project environmental and social monitoring during implementation and operation. The Promoter is also responsible for enforcing the contractors' implementation of mitigation actions and their compliance with the environmental and social specifications and conditions of lenders, studies and national permits, during implementation and operation and at the level of the individual plants.

However, the F-ESIA does not contain any high-level observations on the Promoter E&S capacity and mechanisms for environmental and social compliance supervision and enforcement. For this reason, and as required by national law, the Promoter will also undertake, for each site, specific ESIA's which will include specific ESMPs as well as specific mitigation and monitoring measures. These ESIA's (and ESMPs) will need to reflect both national legislation and the Bank's E&S standards and will need to obtain clearance from the CNEI and the Bank. The ESIA's outcome and mitigation measures, as well as the related permits' conditions, will have to be reflected in the Terms of Reference of the main contracts (EPC and O&M).

Furthermore, the scope of the F-ESIA is limited to the plant sites and does not include the associated infrastructure. The overhead transmission lines for the plants of Enjil, Tan Tan Outat El Haj and Boudnib², if within the EU, would fall under Annex II of the EIA Directive, leaving it to the Competent Authority to decide whether an EIA would be mandatory or not. Likewise, the Moroccan EIA law requires transmission projects to be subject to an EIA. The Promoter will, therefore, be responsible for performing the related ESISs, ESMSs and ESMPs. This will also apply to any associated infrastructure resulting from design changes on any of the sites.

The Bank will require to review, for all sites and their associated infrastructure, site-specific ESIA's (including related ESMSs and ESMPs) and related environmental and construction permits as a condition to first disbursement.

² The other sites (Mathar, Bouanane and Tata), as previously mentioned, will connect to the network through adjacent existing substations or overhead lines, therefore are not expected to feature new transmission lines as associated infrastructure.

Environmental Assessment

The Bank has reviewed the F-ESIA and the F-ESMP, finding them adequate in respect to the environmental impact assessment although missing some specific aspects.

The main conclusions of the F-ESIA are as follows:

- The plant of Tan Tan is located next to the local airport, impacts on which have been assessed as absent. Nevertheless, potential impacts have currently only been assessed in a preliminary fashion, as no specific ESIA's are yet available for Tan Tan;
- no protected areas are located in the immediate vicinity of the plants, except for the Boudnib site, which borders the '*Oasis Du Sud Marocain Biosphere Reserve*'³ considered a "global buffer zone" in the fight against desertification;
- some vulnerable or quasi-threatened species of local fauna have been identified on the sites, in particular birds, chiropteres and reptiles;
- some rare to extremely rare flora typical of the saharian and pre-saharian steppes in Mathar has been identified on the sites;
- some vulnerable or quasi-threatened mammals are present in the vicinity (<10 km) of some sites;
- all sites might potentially host further patrimonial species of flora and fauna;
- whereas plant sites will be fenced, final layouts will include corridors along biodiversity-rich areas such as the ouads and, in Boudnib and Bouanane, along areas identified as having weaker hydrogeological stability.

However, F-ESIA lacks a definition of specific impacts, mitigation and monitoring measures for the protection of biodiversity during implementation. The only main impacts expected during implementation are those typical of large construction sites (i.e. waste and noise) whereas, during operation, the only key potential adverse residual impact is the occupation of land. Furthermore, the F-ESIA does not adequately address the issues of waste management, local capacity to handle waste streams and decommissioning. The Bank appraisal site visits verified that the Promoter has a protocol to manage the disposal of electrical equipment, however overall local waste management capabilities appear to be weak, and local level of public access to sewage systems is very limited.

The Bank will review the site-specific Environmental and Social documents (ESIAs, ESMSs, ESMPs), ensuring environmental impacts are thoroughly defined, adequately mitigated and monitored at the site level. These will have to include:

- for the plant of Tan Tan, a detailed study on the impact on the nearby airport;
- for the plants of Bouanane and Boudnib, an hydrological risk assessment;
- for all sites, hydrogeological studies and site-specific decommissioning plans.

Futhermore, the Bank will require the Promoter to maintain the Environmental and Social Management System (ESMS) throughout the entire duration of the project.

EIB Carbon Footprint Exercise

It is foreseen that the project will avoid greenhouse gas emissions by producing renewable electricity, and displace the construction of new capacity using fossil fuels.

In accordance with the Bank's current Carbon Footprint Methodology, the baseline emissions are calculated assuming that electricity generated by the project will displace generation from a mix of existing thermal power and new generation (coal and renewable). In accordance with the Bank's current Carbon Footprint

³ <http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=mor+02>

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methodology, it is calculated that the avoidance of electricity generation from a combination of existing and new power plants in Morocco (25% operating margin and 75% build margin) will result in emission savings of ~300 Kt CO₂-eq/yr.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

Social Assessment

The project's main social risks and impacts relate to land acquisition, access to water, pastoralism and easement impacts, labour risks and occupational and community health, safety and security risks.

The main conclusions of the F-ESIA are as follows:

- all project sites are situated in areas with low population density; no households or any other building assets are present on the project sites and no physical displacement is foreseen;
- land of the project sites is owned by local ethnic communities (collectivité ethnique), except for the Tan Tan site land which is state-owned (domaine de l'Etat);
- the arid terrains of the various sites are unsuitable for intensive or even continued agricultural development. In the municipalities where the projects are located, livelihoods consist mainly of extensive, subsistence agriculture, goat and sheep herding and, in Tan Tan, low intensity tourism;
- pastoralist use of the locations is said to range between non-existent and very limited (i.e. in Boudnib and Tan Tan). In Boudnib and Tan Tan, there are also some small plantations;
- in Tan Tan, despite the state-ownership status of the land, one small rainwater collector (meftia) appears to have been recently built onsite.

The F-ESIA and the F-ESMP are adequate in respect to the social impact assessment, but they miss an accurate assessment of specific key aspects, such as guaranteeing continued access to natural resources by pastoralist groups and understanding the risk of potential competition over (aquifer) water. In particular:

- presence and natural resource use of pastoralist, transhumant or nomad groups within the project's area of influence has not been adequately mapped or understood in the F-ESIA;
- project impacts on pastoralist groups (i.e. in Boudnib and Tan Tan) are assessed as moderate, however no assessment/reference is made as of the presence of indigenous people (IP) in the communities neighbouring the plants as well as on national approach and definition of IP;
- water availability in the areas is mostly limited to local aquifers and the sites do not have access to running water. Whilst the F-ESIA indicates a low water demand by the project (and low impacts on water resources), it does not quantify annual water use for dust control, worker accommodation, and cleaning of the panels. Data on local aquifers and sources of supply is also lacking.

The Bank will review the site-specific Environmental and Social documents (ESIAs, ESMSs, ESMPs), ensuring specific social impacts are thoroughly defined and adequately mitigated and monitored. The Bank will also require the Promoter to undertake site-specific water studies. These studies will have to detail water demand during implementation and operation, specifying sourcing methodology and sources of supply as well as impacts of climate change. Finally, as part of the ESMS, the Promoter will have to continuously monitor and report on community access to water and possible competition over this resource with project needs.

The project does not involve any physical displacement of local populations. The project, however, required the acquisition of approx. 1,237 hectares, of which 201 hectares of state-owned land, covering the site of Tan Tan, and 1,036 hectares of collective land covering other six sites.

All land has been or is being acquired through willing buyer-willing seller negotiations and in compliance with the respective national procedures. Land acquisition has been finalised for the plants of Enjil, Outat El Haj and Tata. Each of these acquired portions, with a surface of ~188-200 Ha, represents ~0.2-0.3% of the total area

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of the respective collective land. For the site of Bouanane, the sale has been concluded and validated by the competent authority and the acquisition contract is being finalised. For the sites of Boudnib and Ain Bni Mathar (collectively-owned land) and for Tan Tan (state-owned land), the acquisition process is still ongoing. Compensations awarded to the collectivités ethniques will be managed via the Direction des Affaires Rurales (DAR) with the collectivité's agreement and will be either distributed amongst community members, used for community driven development projects or kept in the DAR account until the relevant collectivité ethnique decides on its use.

For each plant and each associated infrastructure, the Promoter will elaborate a Land Acquisition Plan (LAP) based on adequate mapping of local land tenure patterns and natural resource use, describing the detailed procedure through which the Promoter proceeded with land acquisitions. The Bank will require to review these LAPs and the respective land titling agreements, as a condition to first disbursement. The Promoter has also undertaken to provide a copy of the outcomes of any court proceedings related to the attribution of the compensation payments for the plots constituting the project sites.

Finally, the Promoter will also develop site-specific Stakeholder Engagement and Plans (SEPs). Each SEP will have to include a strategy to address risks and impacts of disputes/complaints arising between stakeholders, including those on land acquisitions, restrictions of land use or access to natural resources. The Bank will review the specific SEPs, as a condition to first disbursement.

Labour Issues

Morocco has ratified seven of the eight ILO core labour conventions, and as an ILO member state, it has to observe the spirit of all eight core conventions. However, the F-ESIA does not address any labour or labour-rights issues, such as the need for a worker grievance mechanism, the need for and impacts of worker accommodation, the need for adequate working conditions (including occupational health and safety) and worker welfare facilities, etc. Therefore, the main procurement contracts will have to require that (sub)contractors operate in compliance with all ILO core labour standards and that they observe international standards and best practice with regard to the other labour issues as mentioned above. Additionally, minimum functional specifications for tenders will have to include explicit requirements to follow business best practices and standards, including OHSAS 18001 or its ISO equivalent. Finally, Occupational and Community Health, Safety and Security Plans, including influx management of non-local workers, will have to be developed within each site-specific ESMP.

As a condition to first disbursement, the Bank will review term sheets and draft versions of the main contracts (EPC and O&M agreements). If site-specific EHS plans will not be included in the final EPC and O&M contracts, the Bank will require them, to its satisfaction, in a separate study as a condition to first disbursement.

Public Consultation and Stakeholder Engagement

In Morocco, Public Consultation is part of the EIA process and is regulated by two decrees, one signed in November 2008 – establishing a public consultation made via council and institutional representatives - and one – opening up a public consultation to all stakeholders - enacted in February 2011. The public consultation as of the ESIA process follows the decree as of 2011 and thus complies with the Bank's requirements.

Within the F-ESIA process, stakeholders were identified and two new Public Consultations were organised, one in 2014-2015, related to the process of land acquisition and targeted landowners (collectivités ethniques), and the other one, during field visits in 2016, presented the project to some of the local stakeholders and in particular to the representatives of the local municipal and provincial authorities. A third Public Consultation is foreseen to be scheduled at the level of the individual communities.

Each site-specific ESIA will also be subject to direct Public Consultation in the course of its preparation. As it is expected that these Public Consultations will be more meaningful, given the increased information available (notably ESIA conclusions and recommendations, mitigation measures and action plans), the Bank will review reports of the Public Consultations of the specific ESIA's as a condition to first disbursement.

As for stakeholder engagement, the Promoter has provided an overarching SEP within the F-ESIA (F-SEP). As part of the F-SEP implementation, the Promoter will be expected to engage proactively with stakeholders throughout the life of the project, with a particular focus on the collectivités ethniques impacted by the land acquisitions and on the pastoralist groups present or claiming rights over lands or natural resources within the project's area of influence. Such engagement activities will be aligned with the intent of the Free, Prior and Informed Consent (FPIC) principle, as relevant. The Bank will require the Promoter to provide regular reports on the implementation of the overarching SEP, as an undertaking.

Together with site-specific ESIA's, the Promoter will also draft specific SEPs to the satisfaction of the Bank, as a condition to first disbursement. In developing the specific SEPs the Promoter should: clarify its approach to acting within the spirit of FPIC, include multi-channel/visual and Berber-dialect communications, include a representative from the ethnic communities within the Management Committee for Grievances (CGD), include a clear roll-out program for the Community Grievance Mechanisms.

Finally, as the F-ESIA does not mention the presence of dedicated social expertise at either the corporate or at the project team level (e.g. via Community Liaison Officers), the Bank will review, as conditions to first disbursement, a copy of the decision for the creation of an Environmental and Social Management Unit. Staff of such Unit will be expected to undergo a specific training program around environmental and social issues (ESIA, ESMP, SEP, grievance management, etc.), implemented by the Promoter as a project undertaking.

Cultural Heritage

According to the F-ESIA, no obvious cultural heritage sites are present on or in the vicinity of the plants, except in:

- Tan Tan, where an international festival of Moroccan and Saharan nomadic peoples takes place (the '*Moussem de Tan Tan*', recognised as UNESCO Intangible Heritage), around 8 km far from the site;
- Ain Beni Mathar and Outat el Haj, where Marabout⁴ shrines exist between 2 and 5 km far from the respective sites;
- Tata, where an ancient site with pre-historic rock carvings and ancient tower buildings is located between 2 and 6 km far from the respective site.

The Bank will review the site-specific Environmental and Social documents (ESIAs, ESMSs, ESMPs), ensuring impacts on cultural heritage are thoroughly defined and adequately mitigated and monitored, including cumulative impacts (particularly important in Tan Tan, where attendees to the Moussem event are in the order of thousands). Furthermore, each site-specific ESMP should include a Chance Find procedure for both tangible and non-tangible cultural heritage.

Conclusions and Recommendations

Based on the above, the Bank will require the following environmental and social conditions and undertakings in its finance contract.

Conditions to first disbursement

- For each plant and for its associated infrastructure (as required and unless already included in the related plant documentation), the Bank will review / receive a copy of the following documents, to its satisfaction:
 - specific LAPs, ESIA's, ESMSs, ESMPs, SEPs, hydrogeological studies, environmental and construction permits and reports on the Public Consultations;
 - land titling agreements proving Promoter's ownership or right-of-way, for the plots either acquired or expropriated;

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- specific waste management, decommissioning and EHS plans (unless already included in the final EPC and O&M contracts)
- Furthermore, the Bank will review / receive copy of the following documents (unless already included in the specific ESIA's), to its satisfaction:
 - for the plant of Tan Tan, the study of the project impact on the nearby airport and study of the project (cumulative) impacts with the Moussemer annual event;
 - for the plants of Bouanane and Boudnib, hydrological risk assessment;
 - a copy of the decision for the creation of the Environmental and Social Management Unit.

Undertakings

The Promoter undertakes to implement / to provide, to the satisfaction of the Bank:

- for each site and before construction start:
 - a site-specific training program, for the Environmental and Social Management Unit staff, around environmental and social issues (ESIS, ESMP, SEP, grievance management);
 - a site-specific water study;
- outcomes of any court proceedings related to the attribution of the compensation payments for the different plots constituting the project sites, as soon as available;
- regular monitoring reports on the implementation of the overarching SEP;
- maintenance of the Environmental and Social Management System throughout the entire duration of the project.

With the above-mentioned conditions and undertakings, the project is considered acceptable for EIB financing in environmental and social terms.