

Environmental and Social Data Sheet

Overview

Project Name:	<i>NOOR MIDELT PHASE I</i>
Project Number:	<i>2016-0526</i>
Country:	<i>Morocco</i>
Project Description:	<i>The project is the first phase of the Midelt solar complex, consisting in the construction and operation of two solar (hybrid CSP/PV) power plants with storage, totalling up to a gross capacity of ca. 500 MW each (total gross capacity of up to ca. 1000 MW).</i>

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

Environmental Assessment

The project concerns the construction and operation of two solar (hybrid CSP/PV) power plants with storage, totalling a combined gross capacity of up to ca. 1000 MW. The project area of influence – but not the project scope – includes two overhead grid connection lines: one of 400 kV and 140 km in length, the other of 225 kV and 25 km in length, which will evacuate the energy output of the overall complex, as well as all ancillary infrastructures (water adduction, access roads, etc.). The project site spans ca. 4200 ha and is located on the High Moulouya plain, around 20 km northeast of the city of Midelt. The implementation of the project aims at increasing renewable power generation in Morocco, thereby mitigating greenhouse gas emissions and dependence on foreign energy imports in the country.

Construction of the ancillary infrastructure started in October 2016 and will end by 2018; construction of the plants is planned to start by Q1 2019 and will be completed in the following 30 months. The site was chosen because of its flat profile and good solar resources, its relative distance from inhabited or protected areas, the availability of water from the nearby Hassan II Dam, and the ease of access and of grid connection.

Within the EU, the project would fall under Annex II to the EIA Directive, leaving it to the Competent Authority to decide whether or not an EIA should be requested. Given the scale of the project, and according to national law², the Moroccan Competent Authority (the Secrétariat d'État chargé de l'Eau et de l'Environnement – SEEE) requested an EIA procedure to be followed, which is considered appropriate by the Bank.

The project will be implemented under a concession scheme by private companies still to be selected. The identity of the companies will be known once the concessions are awarded. Since the specific technical design of each plant within the project will only be known at award stage, the promoter decided to first prepare a Framework Environmental and Social Impact Assessment (FESIA), which was reviewed by the Bank in September 2016. The FESIA scope covers the different technologies (PV and CSP) envisaged for the project.

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.

² Loi n° 12-03 relative aux études d'impacts sur l'environnement, promulguée par dahir n°1-03-60 du 10 Rabii I 1424 (12 mai 2003) et ses décrets d'application. / Décret n° 2-04-564 du 5 Kaada 1429 (4 novembre 2008) fixant les modalités d'organisation et de déroulement de l'enquête publique relative aux projets soumis aux études d'impact sur l'environnement. / Décret n°2-04-563 relatif aux attributions et au fonctionnement du comité national et des comités régionaux des études d'impact sur l'environnement.

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The FESIA includes a Framework Environmental and Social Management Plan (FESMP), which covers institutional settings, general mitigation measures and monitoring plan for the potential impacts expected from project activities, including related to the ancillary infrastructure, during construction and operation stages. The promoter is responsible for managing the overall project environmental and social impact assessment and mitigation, whereas the selected bidders are responsible in the above matters regarding their respective plants.

Consequently, each bidder will perform a Specific Environmental and Social Impact Assessment (SESIA) – one per each hybrid plant – with appropriate mitigating and monitoring measures, based on their detailed technical proposals. The submission to the Bank of the final version of the SESIA and the Specific Environmental and Social Management Plan (SESMP) in a manner acceptable to the Bank will be required as a condition for signature of the finance contract.

The project's associated grid connection – two double-circuit overhead lines: a 400 kV of ca. 140 km in length and a 225 kV of 25 km in length and the related substation – if within the EU, would fall under Annex I to the EIA Directive, requiring a full EIA. Likewise, the Moroccan EIA law requires large-scale power transmission projects to be subject to a full EIA. The Moroccan national utility (ONEE), which will build these infrastructures, will also be responsible for performing its environmental and social impact assessment (ESIA). Its clearance by the CNEI, and submission to the Bank of a satisfactory final version of the ESIA will be required as a contractual undertaking.

Finally, given that the ancillary infrastructures (water adduction, access roads, telecommunication and site electrical infrastructures) are minor works that would be scoped out within the EU, the Bank has reviewed the relevant Construction Environmental and Social Management Plans, for each of them, and considers them in line with its Standards.

Environmental impacts and mitigation measures

There is no protected natural habitat in the close vicinity of the site, nor any protected species. The closest protected area (Site à Intérêt Biologique et Ecologique) is the Jbel Ayachi area, 40 km south of the site. The FESIA concluded that it is unlikely that the project would have significant impacts on this protected area.

According to the FESIA, the main impacts of the construction and operation of the project relate to: (i) increased water use in a desert environment; (ii) potential pollution from leakage of heat transfer fluid, or any other pollutant present in the project; (iii) thermal or chemical pollution of local waterways from cooling water and other waste water; (iv) heat island effect and fire hazard; and (v) perturbation of the environment of local birds and small fauna. The FESIA foresees the following measures to mitigate these impacts:

- (i) **increased water use in a desert environment** – mitigated by the usage of dry cooling, which significantly reduces water consumption. The water will be provided from the nearby Hassan II reservoir. The project's annual water needs are less than 1% of the reservoir capacity. In addition, the promoter is currently preparing a study regarding the impacts of climate change on water availability for the project (see below).
- (ii) & (iii) **potential pollution of soil and water from leakages** – mitigated by the choice of key components with leak-proof designs, regular maintenance, cleaning and replacements by appropriately trained staff, reduction at waste source wherever possible, periodic monitoring of appropriate pollution indicators and auditing of waste management procedures, paved areas for storage or utilisation of hazardous waste.
- (iv) **heat island effect and fire hazard** – mitigated by state-of-the-art fire protection system and an isolation area from the closest boundaries of the project site.
- (v) **perturbation of the environment of local birds and small fauna** – mitigated by prohibition of unnecessary clearings and interference with wildlife on site, enforcement of the Transport Management Plan, adequate fencing to facilitate terrestrial fauna movements, bird deterrent devices on the power lines and pylons to minimise risks of bird collisions, monitoring of the avifauna in the vicinity of the power line during the first year of operation.

The Bank considers these mitigating measures to be adequate.

The Bank has also reviewed the draft ESIA relative to the grid connection infrastructure. According to this document, the main impacts of the construction and operation of the project relate to: (i) physical alterations of soil with increase in risk of erosion (ii) loss and disturbance of habitat of vegetation and fauna (iii) risk of collision or electrocution of birds (iv) loss of land (from the pylons), occupation of land (during construction) and loss of value of land due to proximity to the plant.

The draft ESIA foresees the following measures to mitigate these impacts:

- (i) positioning of pylons to minimise impacts on the geomorphology of the area and vegetation (e.g. avoiding sensitive areas such as seasonal streams – “oueds”); post-construction restoration of the initial soil conditions in areas not occupied by the pylons using local topsoil or agricultural soil adequately decompacted; stabilisation of the widened tracks;
- (ii) positioning of access roads and pylons to minimise clearing of vegetation, limiting any tree cutting to pylon foundation sites (i.e. micro-positioning of pylons), stopping construction during the breeding periods and avoiding performing noisy work during the nesting period of birds (i.e. March to May);
- (iii) set-up of visual warning devices on the upper cables on the portion of the line crossing the Oued dam of the Enjil dam, the Moulouya wadi (coloured spirals), the Jbel Tichoukt SIBE and the portion of the line close to the other nearest protected area; design distance of 1.5 m between components under voltage and earthed structures;
- (iv) timing of construction activities during dry weather and after the harvest period, post-construction ploughing of the temporary occupied areas as and when necessary, clearance of construction waste, compensation for residents and farmers for the loss of land use, as and when required;
- (v) in compliance with national legislation positioning of the overhead line to avoid involuntary resettlements.

The 400 kV overhead line intersects a protected area (Site à Intérêt Biologique et Ecologique, SIBE “Jbel Tichoukt”); the area is characterised by numerous endemic plants and remarkable fauna and is a tropical wetland. However, the impacts on this area are expected to be minimal, given that the tree canopy is sufficiently low to avoid cutting any trees. The final tracing of the overhead line will be consulted with local bird protection organisations in order to ensure that its impacts are minimised.

Other protected areas in the region are located at a minimum distance of 8 km from the overhead lines and the substation; the draft ESIA concluded that it is unlikely that the grid connection lines would have significant impacts on these other protected areas.

Climate change mitigation and adaptation

The project may be potentially impacted by climate change, in particular as it uses water for its cooling needs. This is adequately addressed through the use of dry cooling technology thus significantly reducing its water needs. In addition, the promoter has launched a specific study to further assess the impact of climate change on the project. The Bank will require a copy of this study – reviewed to its satisfaction – as a project undertaking.

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.

Absolute annual CO₂ emissions from the project in a standard year of operation will be around 87 000 tonnes of CO₂ equivalent. 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 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 relative emissions of minus 889 kt CO₂-e/a (i.e. savings of 889 kt CO₂-e/a).

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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 and easement impacts, labour risks and occupational and community health, safety and security risks.

To manage the land acquisition and easement process required for the project and address the impacts arising therefrom, the promoter produced three Land Acquisition Plans (LAPs), respectively for the Midelt I and II plant sites, the road infrastructure and the water infrastructure. The plant sites required the acquisition of 4141 ha of land. For the road and water infrastructure, the promoter obtained easement and temporary occupation rights. The land acquisition and easement process did not result in any physical displacement. The sandy and arid terrain only allows for small scrubs to grow, and is not suitable for agricultural development but it has been used for pastoralist and transhumant activities. Transhumance is identified as occurring along the river which crosses the plant sites. Whereas the plant sites will be fenced, a corridor along the river will be kept open for livestock grazing.

For the plant sites, the promoter started the land acquisition process through willing buyer-willing seller negotiations in 2014. Agreements on the transfer of ownership to the promoter were reached in 2014-2015 with the three ethnic collectivities affected by the acquisition process (*collectivités* of Ait Ouefla, Ait Rahou Ouali, and Ait Massoud Ouali). However, due to conflicting claims between the collectivities, individuals from these collectivities and the Department of Water and Forests as to the ownership of part of the land being acquired and the initiation of related court proceedings, the promoter resorted to land acquisition through expropriation. This process has now been finalised and the compensation payments have been transferred to an escrow account awaiting the outcome of the court proceedings and their final attribution.

The compensations that will be awarded to the collectivities following the outcome of the court proceedings will be managed via the Direction des Affaires Rurales (DAR) with the collectivities' agreement and will either be (i) used for community driven development projects; (ii) distributed amongst community members; or (iii) kept in the DAR account until the relevant collectivity decides on its use. In light of the ongoing court proceedings and the transhumant activities that have been identified at the level of the site, the promoter will develop, as part of the overarching Stakeholder Engagement Plan, the strategy for addressing potential risks and adverse impacts arising from the court proceedings and any future claims from any groups impacted by the project, including through restrictions on land use or access to natural resources.

Concerning the associated grid connection infrastructure, a LAP for the acquisition and easement of private, public and communal land is under preparation by ONEE (the utility responsible for the construction and operation of the electrical infrastructures for the evacuation of power generated by the plants) and will be provided upon completion.

Finally, with respect to labour risks and occupational and community health and safety, Morocco has ratified seven of the eight ILO core labour conventions. In order to ensure that the principles and standards of Core Labour Convention 87 on the Freedom of Association are adhered to, the Engineering Procure Construct (EPC) contract requires the contractor and subcontractors involved in the project implementation to comply with the ILO core labour standards. The tender minimum functional specifications further include an explicit requirement to follow best business practices and standards, including OHSAS 18001 or its ISO equivalent, and specific Occupational and Community Health, Safety and Security Plans, including for managing the influx of non-local labour, will be developed within the context of the SEMP for each plant.

Public Consultation and Stakeholder Engagement

As part of the FESIA process, the promoter undertook a public consultation meeting in the town of Midelt in March 2016, which gathered more than 100 stakeholders. Key questions raised were with regard to the environmental and social impacts of the project, the water use, employment and recruitment, land acquisition and compensation and social development opportunities. The public consultation minutes are included in the final FESIA report. Tailored meetings with the collectivities were further held as part of the LACP processes.

The project's overarching Stakeholder Engagement Plan (SEP), as developed by the promoter for the entire duration of the project, is in the process of being finalised. The SEP will detail the project's grievance mechanism modalities as well as modalities for robust stakeholder identification and analysis, including measures for the ongoing monitoring of land use/grazing routes. The information collected from the ongoing monitoring would serve to continuously update the stakeholder mapping and analysis and adapt the engagement as relevant.

As part of the implementation of the overarching SEP, the promoter will be expected to engage proactively with affected and interested stakeholders throughout the life of the project, in particular with a view to appropriately identifying and addressing any concerns of the collectivities impacted by the land acquisition and of any pastoralist, transhumant or nomad groups present or claiming user rights or ownership over lands or natural resources located within the project's area of influence. The engagement activities under this SEP will be aligned with the intent of the Free, Prior and Informed Consent principle, as relevant.

In addition to the project's overarching SEP and beyond the FESIA and LACP processes, specific Stakeholder Engagement Plans will be developed by the project companies and further public consultations will be carried out within the context of the specific ESIA processes.

Other Environmental and Social Aspects

The promoter has proven its capacity to manage the environmental and social assessment and mitigation measures of impacts of complex projects similar to the current project, with the help of adequate processes and systems. In addition, the promoter has obtained certifications ISO 14001 and ISO 9001, as well as OHSAS 18001. This shows that the promoter is aware of the need to adequately manage environmental, social and health and safety risks. However, the promoter may need to allocate adequate resources to perform these activities for the current project. In order to ensure that this is implemented in an appropriate manner, the Bank will review the promoter's Environmental and Social Management System (ESMS), including the resource and responsibilities regarding these activities.

Conclusions and Recommendations

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

Disbursement conditions

1. Prior to first disbursement, receipt of the following documentation, to the satisfaction of the Bank:
 - a. SESIA, SESMP and specific SEP for each plot;
 - b. Copy of the land deed in the name of the promoter, for the expropriated plots;

Undertakings

1. For the associated grid connection infrastructure, provide to the satisfaction of the Bank:
 - a. final LAP, ESIA and ESMP;
 - b. copy of the result of the public consultation process, as approved by the CNEI, including a copy of its approval;
 - c. copy of the final land titling agreements and authorisation proving right-of-way title to the land by the promoter;
2. Provide a copy of the study to assess the impact of climate change on water availability for the project;
3. Overarching Stakeholder Engagement Plan (SEP), to be delivered in compliance with the Bank's Environmental and Social Standards by 15 September 2018;
4. Provide regular monitoring reports on the implementation of the overarching SEP;
5. Provide a copy of the outcomes of the court proceedings related to the attribution of the compensation payments for the different plots constituting the project site when available.
6. Maintain and implement a satisfactory Environmental and Social Management System throughout the entire duration of the project;
7. Ensure that the project is implemented and operated in line with EIB's Environmental and Social Standards, including at the level of contractors and subcontractors.

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