INTEGRATED SAFEGUARDS DATASHEET
APPRAISAL STAGE

I. Basic Information

Date prepared/updated: 09/08/2006 Report No.: AC1960

1. Basic Project Data

Country: Morocco	Project ID: P041396
Project Name: INTEGRATED SOLAR COMBINED CYCLE POWER PROJECT	
Task Team Leader: Nourredine Bouzaher	
GEF Focal Area: Climate change	Global Supplemental ID:
Estimated Appraisal Date: June 20, 2006	Estimated Board Date: November 9, 2006
Managing Unit: MNSIF	Lending Instrument: Specific Investment Loan
Sector: Power (80%);Renewable energy (20%)	
Theme: Technology diffusion (P);Infrastructure services for private sector development (S);Climate change (S)	
IBRD Amount (US$m.): 0.00 IDA Amount (US$m.): 0.00 GEF Amount (US$m.): 49.60 PCF Amount (US$m.): 0.00 Other financing amounts by source: BORROWER/RECIPIENT 16.28 AFRICAN DEVELOPMENT BANK 153.73 170.01	
Environmental Category: B - Partial Assessment	
Simplified Processing Simple [] Repeater []	
Is this project processed under OP 8.50 (Emergency Recovery) Yes [ ] No [X]	

2. Project Objectives

The main objective of the project is to demonstrate and encourage replication of integrated solar combined cycle (ISCC) power generation technology in Morocco and elsewhere in the world. The proposed project is one of a number of similar projects in the world to be supported by GEF as part of a program to accelerate cost reduction and commercial adoption of large-scale non-carbon emitting generation technologies

The proposed will lower CO2 emissions in the generation of electricity, add much needed capacity to the power grid to help cope with the sustained growth in electricity demand, and increase the contribution of renewable energy sources in Morocco's energy mix.

3. Project Description

The project includes the integration of a solar trough collector field (of about 226,000 m2) producing a minimum energy output with a traditional natural gas-based power generating unit. The proposed project will be implemented in two phases. The first phase, now well under way, entails the engagement of specialized consultants to prepare a

feasibility study, bidding documents, draft contracts, and to advise the client, the Office National de l?Electricit? (ONE), during the evaluation of proposals. The following phase involves the construction and operation of a solar/fossil fuel hybrid power station of about 227 MW with an expected annual net production of 1,572 GWh per year. The solar output is estimated at 2.4% of the annual production representing 37.5 GWh per year. It is expected that the solar thermal power plant will be in service in 2009.

Following an unsatisfactory response to competitive bidding for an IPP, Morocco?s public power utility has decided to finance the solar thermal plant itself through an EPC (Engineer, Procure and Construct) cum O&M (Operation and Maintenance) contract. ONE will thus be the owner of the plant. The O&M contract will last 5 years and include appropriate incentives to ensure an efficient operation of the plant, particularly the solar field.

The main components of the proposed project are:

1. The design, construction and operation of an Integrated Solar Combined Cycle power plant;
2. The construction of 225kV and 60kV transmission lines;
3. The construction of High Voltage and Very High Voltage substations;
4. The construction of an access road;
5. The drilling of boreholes;
6. Land acquisition;
7. The construction of a gas pipeline to supply the plant;
8. Environmental and Social Development and Management; and
9. Consulting services for project management and supervision.

Project Component 1 - Design, Construction and Operation of an Integrated Solar Combined Cycle Power Plant - US$185.39 million (including about US$50 million from GEF)

The gross capacity of the Integrated Solar Combined Cycle (ISCC) plant will be 227 MWe (at 20?C) and will consist of gas turbine(s), a steam turbine, and a parabolic trough solar field with a capacity of about 20 MWe plus ancillary facilities for the proper operation of the power plant (backup power plant, etc.). The solar field will cover a total reflective area of 151,000 m2. It includes the space between rows of collectors for cleaning and other maintenance (17.3 m between rows).

The total net energy produced by the plant would be 1,572 GWh per year, which includes the solar contribution of 37.5 GWh per year. This corresponds to a solar share of 2.4 percent of the total annual energy produced by the plant operating at a full load. An ISCC with cooling tower and without storage is anticipated to be the preferred choice within the technical design options. The primary fuel for the gas turbine will be natural gas supplied via a spur from the Maghreb-Europe gas pipeline.

Following the construction, a 5-year O&M contract will be put in place to ensure proper operation of the newly constructed plant. The O&M contract will be extended to the same firm in charge of the construction of the plant.

Project Component 2 ? Construction of 225kV and 60kV power lines- US$11.24 million (US$8.90 million financed by the AfDB, and US$2. 34 million by ONE)

This component will cover the construction of two 225kV and one 60kV transmission lines. The electricity produced by the ISCC plant will be evacuated by two 225kV transmission lines to the Bourdim and Jerada substations. The 225 kV line from the 225 kV Bourdim substation to the ISCC power plant will be a single circuit line of about 10 kms. The extension of the 225 kV transmission line Bourdim ? Jerada to the Ain Beni Mathar ISCC power plant will be a double circuit line of about 40 kms.

The 60kV line will be constructed to provide a backup power supply to the auxiliaries of the ISCC plant in case of emergency. This line, of about 10 km, will connect the 60/225 kV substation of Ain Beni Mathar to the ISCC power plant.

Project Component 3 ? Construction of a 225 kV substation - US$9.04 million (US$7.15 million AfDB, and US$1.89 million ONE)

This component covers the construction of one 225 kV substation.

Project Component 4 ? Construction of an access road- US$3.8 million (ONE)

To link the power plant to the main road (Route principale 19), which links Oujda to Bouarfa, an access road of about 6km will be constructed. As part of the access road, two bridges over the Charef and Tabouda rivers will also constructed. The infrastructure will be designed to support the heavy equipment necessary for the construction of the ISCC power plant.

Project Component 5 ? Boreholes - US$0.35 million (ONE)

The operation and maintenance of the power plant, in particular the cleaning of the solar collectors and the cooling of the plant, require the drilling of at least two boreholes. Water will be pumped from the acquifer located below the site of Ain Beni Mathar. Water reserves equivalent to one day consumption will be maintained. The extracted water will be treated before use and the site wastewater will be collected and treated in a two-hectare stabilization pond.

The implementing agency for the construction of the boreholes will be the Agence de Bassin de Moulouya (the Moulouya Watershed Agency) which is legally mandated to undertake this work.

Project Component 6 ? Land acquisition- US$0.87 million (ONE)

203 hectares of land will be acquired by ONE for the construction and operation of the plant. 160 hectares will be for the power plant (including 88 ha for the solar field), 6 hectares for the boreholes and water distribution, 31 hectares for the gas spur from the

Maghreb-Europe Pipeline to supply the power plant and the transmission lines, and 6 hectares for the access road.

Project Component 7 ? Gas pipeline - US$1.51 million (ONE)

The gas supply will be ensured via the construction of a 13 km gas spur from the Maghreb-Europe gas pipeline.

Project Component 8 ? Environmental and Social Development and Management US$2.31 million (ONE)

This component will include a comprehensive monitoring and evaluation program to disseminate the results and the lessons learned from the project in all its phases (pre-construction, construction and operation) to increase the overall global benefits. It also includes: (a) the implementation of the Environmental Management Plan which mitigates the potential environmental impacts associated with the construction of the power plant, the substations, the access road, the transmission lines and the gas pipeline; (b) a capacity building program to strengthen the capacities of the ONE for the follow-up and monitoring of the implementation of the overall EMP, which is the responsibility of the EPC Contractor and its sub-contractors.

Project Component 9 ? Consulting services for project management and supervision US$5.09 million (US$4.55 million AfDB, and US$0. 54million ONE)

This component will finance the services of the consulting engineer during construction, testing and operation of the plant for the two-year guarantee period.The main mission of the consulting engineer is to: (i) critically review all detailed engineering designs; (ii) supervise the construction of the plant; (iii) supervise the testing and delivery of equipment in factory and on-site; (iv); supervise the testing of the plant; and (v) provide assistance during the two-year guarantee period. The consulting engineer will make sure that the data for the monitoring of the performance indicators is collected and supplied by the EPC contractor. The consulting engineer will make these data available in his periodic report to ONE.

4. Project Location and salient physical characteristics relevant to the safeguard analysis

The project site is located in the province of Jerada, north-east of Morocco. It is situated 10 kilometers to the West of the route national P19 linking Oujda (90 km away) and the town of Ain Beni Mathar. The entrance to the access road for the project site is about 5km to the north of the town of Ain Beni Mathar. The project site itself, which is about 1.5 km2 large, and its immediate vicinity are sparsely populated. The terrain is flat and the climate is desert like with a very low rate of humidity. Sufficient water for the operation and cooling purposes will be provided from the ground water aquifer. The vegetative cover consists mainly of grasses and different types of cactus. No intensive agricultural activities are located on the site for the power plant although agricultural

activities are to be found adjacent to the access road and in the path of the proposed power lines. The site itself is used by local nomadic pastoralists for grazing purposes.

5. Environmental and Social Safeguards Specialists

Ms Dahlia Lotayef (MNSRE)
Ms M. Yaa Pokua Afriyie Oppong (MNSRE)

6. Safeguard Policies Triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)		X
Forests (OP/BP 4.36)		X
Pest Management (OP 4.09)		X
Physical Cultural Resources (OP/BP 4.11)		X
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)	X	
Safety of Dams (OP/BP 4.37)		X
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts: The main risks that could exist would be due to accidental contamination of the site by the heating fluids during operation as well as during transportation to the site in the construction phase. Such risks will however be largely reduced and properly managed through the inclusion of a retention and biological treatment system to be included in the detailed design of the project, and by following the safety measures for proper handling and transportation of hazardous substances. The volumes of cooling water to be pumped from the aquifer should not exceed those amounts estimated for the purpose of the environmental assessment, in order to maintain the current balance of the resource.

On the other hand, the most important impacts expected during the construction phase are due to the large volumes of construction and solid wastes that will be generated.

Social Safeguards

Involuntary Resettlement: The Social Safeguard Policy on Involuntary Resettlement (OP 4.12) is triggered as the project will entail land acquisition for the construction of the Power plant, the gas pipelines, the access road and the electric lines. Therefore, the relevant resettlement documents (RAP and RPF) have been duly developed, in compliance with OP 4.12.

In terms of adverse social impacts, the project does not induce physical displacement of population, does not pose any threats to incomes or livelihoods, nor create/intensify poverty or vulnerability. Land acquisition involves minor reduction in agricultural/grazing plot area.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:
The development of the power plant is expected to have a positive impact on the local population and the local economy (i) providing both direct (and indirect) sources of employment during the construction and production phases (500 direct jobs during the former and 50 during the latter phase) - the majority of workers will be locally recruited; (ii) leading to improvements in local infrastructure including the rehabilitation of local roads; and (iii) improving access to electricity particularly for poor rural families who are currently not connected. A potential negative social impact of the project is the spontaneous development of a shanty town community in the vicinity of the project site drawn to the increased employment opportunities in the area. The presence of a sizeable town in the area of Ain Beni Mathar may mean however, that immigrants to the area may relocate there. Local authorities and ONE will have to be aware of the potentially negative impacts and monitor the development of the area.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.
A pre-feasibility study financed by the European Community (EC) provided the economic analysis for 11 alternatives studied at Jerada and Ain Beni Mathar sites. The alternative ABM-3 at Ain Beni Mathar site was selected on the basis of the lowest levelized tariff and the highest rate of return and its proximity to the electricity grid and gas network, as well as other physical and environmental criteria about the insulation and sun level, the availability of cooling water, and the location with regards to the electricity grid and gas network.

In compliance with Policy OP 4.12, acquisition of private land for the implementation of the project has been minimized, and when possible, avoided. Hence, the site selection for the project has been guided, among other criteria, by the absence of conflicting land uses and minimization of private land expropriation.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.
The Office National de l?Electricite has through its Quality and Environment Dept acquired a very important experience during the preparation of the TORs for the EIA and the supervision of the consultant?s work, in close collaboration with the project?s environmental and social safeguards team. ONE has demonstrated it possesses the necessary capacity to oversee and monitor the implementation of the impacts mitigation measures presented in the Environmental Management Plan.

The Environment and Quality Department will have responsibility for the coordination of the studies and the monitoring of the environmental and social development and

management component; and for liaising with the ADB. A "Safeguards Focal Point" will be designated at ONE to follow-up and coordinate all environmental and social safeguards and management issues.

A Resettlement Action Plan (RAP) and a Resettlement Policy Framework (RPF) have been prepared by the borrower for the project. The RAP applies to the power plant site and the gas pipelines because the project-affected people have already been identified and land acquisition procedures have been launched. Since the exact nature and extent of land acquisition for the access roads and electric lines has not yet been determined, an RPF has been formulated, which will be followed with a Resettlement Action Plan downstream, once the feasibility studies have been completed.

At the time of appraisal, the project affected persons on the Power Plant site had been compensated by ONE for the loss of agricultural productivity. The assets valuation of the people on the gas pipeline site has been completed and ONE anticipates proceeding to the compensation due to these people by October 2006. As mentioned earlier, the precise sites and lands to be acquired for the construction of the access roads and the electric lines have not yet been determined; hence the compensation procedure will be launched once the sites and the people whose land will be acquired have been determined, as stated in the RPF.

The entity responsible for land acquisition in ONE is the Division Gestion du Patrimoine et des Affaires Immobili?res. The Division has experience in land acquisition issues and operates according to Moroccan law. However, given their unfamiliarity with Bank guidelines, a capacity building program will be conducted for the ONE staff working on land acquisition in order to enhance their knowledge about the Bank?s guidelines on Social safeguards, and precisely the policy that applies to involuntary resettlement and land acquisition. It is further recommended that a third party (NGO or consultant) be hired to work with ONE and provide additional oversight on land acquisition issues during the implementation and supervision stage of the RPF and RAP, in compliance with Bank social safeguards to ensure the timely implementation of land acquisition procedures.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.
The key local stakeholders include the local commune, local farmers, nomadic pastoralists and the land acquisition-affected persons and/or agencies (l?Office National des Chemins de Fer (ONCF); la Direction R?gionale du Minist?re de l?Equipement et l?Agence du Bassin Hydraulique du Moulouya .

Several consultations have taken place as part of project preparation.

? In October 2005, the project team conducted a series of informal consultations with pastoralists in the immediate vicinity of the proposed plant. The local pastoralists viewed the plant as an asset to the region given its employment generation potential and improved availability of electricity.

? On December 29, 2005 and as part of the Environmental Management Plan (EMP), a day of public consultations was organized by ONE in the Municipality of Ain

Beni Mathar. The objective was to provide information to the general public on the power plant and to raise awareness, among the participants, and to answer their questions and concerns while sharing the results of the Environmental Impact Assessment (EIA). The participants, over 120 individuals, included: the local population, elected officials, NGO representatives from the region and economic operators.

? In June 2006, a series of intensive consultations were conducted with local project affected people as part of the social and land acquisition assessment. The assessment was conducted by a local consultant. The study consulted with individuals whose land and/or assets will be affected by the construction of the power plant and the gas pipelines and they were informed about the project and the land compensation procedures. In addition the consultations touched upon the implications of the project in terms of employment generation. The assessment further improved the local communities understandings of the project and its implications and confirmed that the populations are awaiting the employment opportunities which the project will likely offer. Equally, elected representatives of the local commune of B?ni Mathar as well as three public agencies that will be affected by the land acquisition for the gas pipeline, including l?Office National des Chemins de Fer (ONCF) ; la Direction R?gionale du Minist?re de l?Equipement et l?Agence du Bassin Hydraulique du Moulouya have been consulted in this regard.

B. Disclosure Requirements Date

Environmental Assessment/Audit/Management Plan/Other:	
Date of receipt by the Bank	02/01/2006
Date of "in-country" disclosure	06/01/2006
Date of submission to InfoShop	06/09/2006
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	
Resettlement Action Plan/Framework/Policy Process:	
Date of receipt by the Bank	05/25/2006
Date of "in-country" disclosure	06/01/2006
Date of submission to InfoShop	06/09/2006

*** If the project triggers the Pest Management and/or Physical Cultural Resources, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.**

If in-country disclosure of any of the above documents is not expected, please explain why:

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment	
Does the project require a stand-alone EA (including EMP) report?	Yes
If yes, then did the Regional Environment Unit or Sector Manager (SM)	Yes

review and approve the EA report?	
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes
OP/BP 4.12 - Involuntary Resettlement	
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes
If yes, then did the Regional unit responsible for safeguards or Sector Manager review the plan?	Yes
The World Bank Policy on Disclosure of Information	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes
All Safeguard Policies	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes
Have costs related to safeguard policy measures been included in the project cost?	Yes
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes

D. Approvals

Signed and submitted by:	***Name***	***Date***
Task Team Leader:	Mr Nourredine Bouzaher	08/31/2006
Environmental Specialist:	Ms Dahlia Lotayef	06/09/2006
Social Development Specialist	Ms M. Yaa Pokua Afriyie Oppong	06/09/2006
Additional Environmental and/or Social Development Specialist(s):		
Approved by:		
Regional Safeguards Coordinator:	Mr Sherif Kamel F. Arif	09/07/2006
Comments:		
Sector Manager:	Mr Jonathan D. Walters	09/07/2006
Comments:		