

**INTEGRATED SAFEGUARDS DATASHEET  
APPRAISAL STAGE**

**I. Basic Information**

Date prepared/updated: 11/12/2007

Report No.: AC2215

**1. Basic Project Data**

Country: Ethiopia	Project ID: P074011	
Project Name: Ethiopia/Nile Basin Initiative: Ethiopia-Sudan Interconnector		
Task Team Leader: Philippe Charles Benoit		
Estimated Appraisal Date: March 8, 2007	Estimated Board Date: December 18, 2007	
Managing Unit: AFTEG	Lending Instrument: Specific Investment Loan	
Sector: Power (100%)		
Theme: Other environment and natural resources management (P)		
IBRD Amount (US\$m.):	0.00	
IDA Amount (US\$m.):	41.05	
GEF Amount (US\$m.):	0.00	
PCF Amount (US\$m.):	0.00	
Other financing amounts by source:		
	BORROWER/RECIPIENT	5.05
	<u>Borrowing Agency</u>	<u>24.85</u>
		29.90
Environmental Category: B - Partial Assessment		
Simplified Processing	Simple <input type="checkbox"/>	Repeater <input type="checkbox"/>
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**2. Project Objectives**

The Project's development objective is to promote Ethiopia's power export revenue generation capacity through the development of regional trade opportunities in the context of the NBI regional effort. The proposed project will finance the construction of a transmission line between the towns of Bahir-Dar and Metema in Ethiopia; Sudan will extend its grid to meet this Ethiopia line. This transmission line will connect the grids of Ethiopia and Sudan as to allow primarily exports of Ethiopian hydropower to Sudan to substitute for Sudan's thermal generation.

The Project will also take advantage of the hydro-thermal complementarity of the Ethiopian and Sudanese systems to reduce overall generation costs and improve the availability and reliability of supply in Ethiopia. The two countries would be able not only to trade energy but also better integrate their reserve capacity, thus facilitating a reduction in the total reserve margin requirements on the interconnected system, as well as capital and operating costs.

In the long term, the Project will improve the effectiveness of the power systems of the Nile Basin countries and beyond, by promoting regional power trade through the

establishment of coordinated planning and the erection of transmission interconnections in the context of multi-purpose water and energy resources development in the region.

Stage 1 is the Ethiopia-Djibouti interconnector being financed by the African Development Bank.

### **3. Project Description**

The Project will have two components:

Component 1: Construction of transmission interconnection between the town of Bahir Dar to Metema on to the border with Sudan. (US\$ 32.25 million). This component will include the following three sub-components:

- a. Construction of a new 194 km double circuit 230/220 kV transmission line linking Gonder and Metema and on to the border with Sudan, and reinforcement of Ethiopia's existing 260 km single circuit line linking Bahir Dar to Gonder (US\$21.0 million);
- b. Extension and rehabilitation of substations at Bahir Dar and Gonder (\$10.4 million); and
- c. Installation of a fiber optics telecommunications system and supervisory control and telecontrol equipment (US\$0.85 million).

Component 2: Institutional Strengthening and Capacity Building (US\$ 7.75 million): The aim of this component is (i) to support the effective implementation and operation of the transmission line and (ii) to initiate the establishment of institutional, technical and commercial mechanisms that would allow Ethiopia to become a key player on a broader regional market. This component includes the following sub-components:

- a. Support to EEPCO's on the implementation and operation of the Ethiopia-Sudan Transmission Line. This sub-component will include the following activities:
  - o Supervisory engineer to support the erection activities in Ethiopia and to provide training on transmission and substation operation for the local crews responsible for the day to day operation of the Ethiopia-Sudan transmission line (US\$ 1.96 million);
  - o Implementation of the EMP and RAP (US\$ 1.27 million);
  - o Strengthening EEPCo's Load Dispatch Center training program on issues related to cross-border trade (US\$ 0.46 million);
- b. Supporting Ethiopia's role as a power exporter in the regional market , including the following activities:
  - o Capacity building for EEPCo's Regional Interconnections Department and the Planning Department in key areas of power trade (US\$ 0.81 million);
  - o Conduct feasibility studies and environmental and social impact assessment for potential regional interconnections, including: (i) Ethiopia-Yemen; (ii) Ethiopia-Southern

Sudan, and (iii) Ethiopia-Eritrea, (iv) Ethiopia-Somalia, and (v) ESIA Ethiopia-Kenya Interconnection (US\$ 3.0 million).

- o Support EEPCo in promoting generation for regional exports through competitive processes (US\$ 0.25)

Related activity: Sudan will, in parallel, build a transmission line from Gedaref to the town of Gallabat (about 155 km) on to the border with Ethiopia to connect its grid to the extension being undertaken by Ethiopia under Component 1 of the project.

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

The Project involves the construction of a high voltage transmission line between Ethiopia and Sudan. Three alternative routes were investigated by the Feasibility Study Update and Option C from Gonder substation in Ethiopia to El Gedaref in Sudan was recommended as the most cost effective. The Project was initially classified as Category A as the preferred Option in the 1995 study was expected to have significantly higher environmental and social impacts, requiring full ESIA including an Environmental Management Plan (EMP) and a resettlement Action Plan (RAP). After conducting the ESIA, the Ethiopia-Sudan transmission line has been categorized as "B" under OP4.01, since the proposed route (Option C) of the line will run through already developed areas of Ethiopia and Sudan with little or no environmental sensitivity, and through which, in most of the length of the line, an existing line already runs. In many places, the new line will parallel the existing line.

The ESIA indicates that most impacts associated with the Project are of temporary nature resulting during construction and can be minimized by good engineering practice and implementation of recommendations outlined on the EMP. The preferred route does not pass through any conservation reserves or protected forest areas and there are no known bird migratory routes affected by the alignment. Much of the vegetation along the route has been disturbed by mixed subsistence farming in Ethiopia and mechanized rain-fed agriculture in Sudan such that there is unlikely to be a loss in biodiversity of plants or vegetation.

#### **5. Environmental and Social Safeguards Specialists**

Mr Jorge E. Uquillas Rodas (AFTCS)

Mr Robert A. Robelus (AFTEG)

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

## **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 project involves the construction of a 230 kV transmission line between the towns of Bahir Dar and Metema in Ethiopia to connect with a transmission line to be built on the Sudanese side up to the town of Gedaref. Because of the linear nature of the transmission line, and since the proposed route will run through already developed areas of Ethiopia and Sudan with little or no environmental sensitivity, and through which, in most of the length of the line, an existing line already runs (in many places, the line will parallel the existing line), the impacts associated with the line are minimal and of temporary nature. The project impact is anticipated to occur predominantly during the construction phase with the importation of skilled workers into the area and the construction of work camps and temporary access to roads. The ESIA indicates that most impacts associated with the Project can be minimized with good engineering practice and implementation of the recommendations outlined in the EMP. The proposed line does not pass through any conservation reserves or protected forest areas and there are no known bird migratory routes affected by the alignment. Much of the vegetation along the route has been disturbed by mixed subsistence farming in Ethiopia and mechanized rain-fed agriculture in Sudan.

Some resettlement will occur due to the construction of the line, therefore two separate Resettlement Action Plans (RAPs) have been prepared, one for Ethiopia and one for Sudan. In Ethiopia, it is estimated that 680 households will lose land permanently for tower bases. The impact on each household for permanent land loss will not be more than 49 m<sup>2</sup> (per tower base). A total of 283 residential buildings are located within the Project RoW and will have to be removed. Permanently affected houses are not located in one area, but are spread across the 296 km route. Impact on residences will not require full resettlement, but will involve shifting the residence to a different portion of the property, or in case of a town, to within the vicinity. In Sudan, the total number of hectares that will be temporarily affected by the RoW is 438 ha. while 1.53 will be permanently affected by the construction of approximately 312 towers. Only 24 houses will be permanently affected and will be relocated.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The project raises no environmental policy, regulatory and institutional issues, and will not compromise people's health from environmental risks and pollution. Project environmental concerns are not significant, and normal environmental management procedures and practices will suffice to avoid or minimize any such concerns during final route alignment, construction and operation.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

Three alternative routes were investigated. These routes pass through the Amhara, Oromiya and Benishangul-Gumuz regions of Ethiopia and the Al Qadarif and An-Nil-al-Azraq states of Sudan. The recommended route "Option C" is approximately 446 km in length, starting from Bahir Dar in Ethiopia and connecting to El Gedaref substation in Sudan via the border towns of Metema and Gallabat. This route has been considered as the most cost effective option by the Updated feasibility study. The ESIA compared the potential environmental and social impacts associated with the three proposed routes and also recommended Option C as the preferred route considering it is the most accessible route and has been under much more human development compared to the other two options. The mitigation measures are also more manageable in route C, where the biophysical impacts are expected to be minimal and short-term.

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.

An Environmental Management Plan (EMP) has been prepared together with the ESIA to address any environmental impact associated with the Project. A Monitoring Plan for the EMP will be undertaken at a number of levels. First, it will be undertaken by the Contractor at work sites during construction, under the direction and guidance of the Supervision Consultant who is responsible for reporting to the implementing agencies. EEPCo and NEC will also undertake independent monitoring of selected parameters to verify the results of the Contractor and to audit direct implementation of environmental mitigation measures contained in the EMP and construction contract clauses for the Project. EEPCo and NEC also have the direct responsibility to implement and monitor land acquisition and compensation issues as outlined in the two RAPs.

Both Ethiopia and Sudan have National EPA organizations that have the overall responsibility for issuing approval for the Project and ensuring that their environmental guidelines are followed during Project implementation. ENTRO PCU (supported by a separate grant) will also monitor the implementation of the EMP and RAPs in the two countries. In parallel, ENTRO PCU will facilitate the implementation of a training program on environmental and social issues in Ethiopia and Sudan to strengthen the utilities' capacity to address priority social and environmental issues associated the design and implementation of power sector projects.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people. Two Resettlement Action Plans were prepared to ensure that a systematic assessment of potential losses will be made and action taken to minimize damage or loss to affected people by the construction of the proposed transmission line. The RAPs consider loss of access to resources (dwellings, crops, woodlots, grazing lands, wells, businesses, cultural properties and social services) or temporary displacement due to construction. The RAPs build upon the following sources:

- Broad consultation with local stakeholders
- Rapid surveys of all route options
- 100% census of option C in the two countries
- Sample socio-economic surveys of Options A, B1 and B2.

Because of the linear nature of a transmission line, it is estimated that the Project will have minimal impact on communities and persons, and on common and private property assets. In Ethiopia, the number of buildings within residential households to be permanently relocated is 283, and 24 in Sudan. The number of hectares permanently affected (tower bases) in Ethiopia is estimated at 2.95 and 1.53 in Sudan.

The RAPs have been disclosed in-country and through the Eastern Nile Technical Regional Office. Key sections of the reports have been translated to local languages (Amharic and Arabic) and disclosed at the local and national level in Ethiopia. The ESIA and RAP was disclosed in the following places:

- EEPCO's website: eepco.gov.et
- Ethiopian Environmental Protection Agency (EPA)
- Amhara National Regional Government
- Public Relations Office, EEPCO
- Ethiopia-Sudan Power System Interconnection Project Office, EEPCO
- NEC website

Advertisements have been also placed in two Ethiopian newspapers:

- Ethiopian Herald (English Language)
- Addis Zemen, Local newspaper in Amharic

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### ***B. Disclosure Requirements Date***

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#### **Environmental Assessment/Audit/Management Plan/Other:**

Was the document disclosed <b>prior to appraisal?</b>	Yes
Date of receipt by the Bank	01/10/2007
Date of "in-country" disclosure	01/13/2007
Date of submission to InfoShop	01/13/2007
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	

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#### **Resettlement Action Plan/Framework/Policy Process:**

Was the document disclosed <b>prior to appraisal?</b>	Yes
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Date of receipt by the Bank	01/10/2007
Date of "in-country" disclosure	01/13/2007
Date of submission to InfoShop	01/13/2007

**\* 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) review and approve the EA report?	Yes
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***

<b><i>Signed and submitted by:</i></b>	<b><i>Name</i></b>	<b><i>Date</i></b>
Task Team Leader:	Mr Philippe Charles Benoit	10/16/2007
Environmental Specialist:	Mr Robert A. Robelus	10/16/2007
Social Development Specialist	Mr Jorge E. Uquillas Rodas	10/16/2007
Additional Environmental and/or Social Development Specialist(s):	Mr Jorge E. Uquillas Rodas	10/16/2007
<b><i>Approved by:</i></b>		
Regional Safeguards Coordinator:	Mr Warren Waters	10/16/2007
Comments:		
Sector Manager:	Mr Subramaniam V. Iyer	10/16/2007
Comments:		