



Luxembourg, 22/03/2007  
PJ/ENERCOM/2007-227/(...)

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Operation no.: 20050357

Sector Code: 40 10 22 00  
Eligibility Code: 030500020100,  
030500020200,  
030200010200

## **APPRAISAL REPORT**

### **Bujagali Hydroelectric Project (Construction of a 250 MW power plant)**

## **UGANDA**

(,,)

## TABLE OF CONTENTS

	Page no.
<b>PJ OPINION (Fly-sheet)</b>	<b>3</b>
<b>SUMMARY FOR THE REPORT TO THE BOARD OF DIRECTORS</b>	
1. PURPOSE, LOCATION	4
2. CONTEXT / BACKGROUND	4
3. VALUE ADDED IDENTIFICATION	4
4. DESCRIPTION, CAPACITY	4
5. PARTICULAR TECHNICAL OR TECHNOLOGICAL ASPECTS	4
6. IMPLEMENTATION	5
7. PROCUREMENT	6
8. OPERATION	6
9. ENVIRONMENTAL IMPACT	6
10. MARKET, DEMAND	8
11. INVESTMENT COST	8
12. PROJECT RELATED CONDITIONS TO BE FULFILLED	8
13. FINANCIAL AND ECONOMIC PROFITABILITY	8
14. CONFIDENTIAL INFORMATION CONCERNING PUBLIC SECTOR PROJECTS	8
<b>APPENDICES</b>	
A.1. Technical description	
A.2. Information to be sent to the Bank	
B. Map	
C. Procurement statistics <sup>1</sup>	
D. Environmental summary sheet	
E. Investment cost analysis <sup>2</sup>	
F. Profitability analysis <sup>2</sup>	
G. Other relevant analysis: analytical elements and risks <sup>2</sup>	
H. Value Added Sheet	
I. Contacts, References, Missions, Consultants <sup>2</sup>	

## ABBREVIATIONS

<u>MEASURES AND UNITS:</u> (International system of units (SI))		<u>ABBREVIATIONS AND PREFIXES</u>	
Power W (Watt)		n.a. = not available or applicable	
Power Factor	cos phi	Index "e" : electrical generation/distribution	
Energy	Ws (Wattsecond) = J (Joule)	Index "th": thermal generation/distribution	
Current	A (Ampère)		
Voltage	V (Volt)	LT = low tension	LP = low pressure
Frequency	Hz (Hertz)	MT = medium tension	MP = medium pressure
Pressure	Pa (Pascal) = N/m <sup>2</sup>	HT = high tension	HP = high pressure
Time	s (second)		
Length	m (metre)	k = kilo	(10 <sup>3</sup> )
Force	N (Newton)	M = Mega	(10 <sup>6</sup> )
Mass	g (gram)	G = Giga	(10 <sup>9</sup> )
		T = Tera	(10 <sup>12</sup> )
		P = Peta	(10 <sup>15</sup> )
Exchange rate @ 2.3.2007 1 € = 1.32 USD			

Luxembourg, 22/03/2007  
PJ/ENERCOM/2007-227/(...)

<sup>1</sup> Mandatory for projects outside EU.

<sup>2</sup> Optional in case of NFP.

(Fly-sheet)

**PROJECTS DIRECTORATE OPINION**

**Bujagali Hydroelectric Project (Operation no. 20050357)  
UGANDA**

**(...)**

(...)

## SUMMARY FOR THE REPORT TO THE BOARD OF DIRECTORS

(Annex 1, §3, unless otherwise indicated)

### 1. PURPOSE, LOCATION

The purpose of the project is to increase cost-efficient power supply in Uganda by building and operating a 250 MW greenfield pondage<sup>3</sup> hydropower plant. The reservoir will occupy an area of 3.9 km<sup>2</sup>, of which approximately 20% only will be newly inundated land and the rest is already occupied by the Nile River. The plant will be connected to the existing power system in Uganda via three 132 kV overhead transmission lines. The lines are not part of the project but will be built and financed by the Government-owned utility, Uganda Electricity Transmission Company Ltd (UETCL). The dam will be located some 70 km east of Kampala, on the Nile, 8 km downstream of the existing Nalubaale-Kiira hydro complex, formerly known as Owen Falls and Owen Falls Extension, near Lake Victoria and will operate under a Government-guaranteed 30-year Power Purchase Agreement.

### 2. CONTEXT / BACKGROUND

#### 2.1 Monitoring experience

(...)

#### 2.2 Project background

(...)

### 3. VALUE ADDED IDENTIFICATION

#### 3.1 Consistency with EU priority objectives (Pillar 1)

(...)

#### 3.2 Quality and soundness of the investment (Pillar 2)

(...)

### 4. DESCRIPTION, CAPACITY

The project consists of the design, supply, installation, testing, training, commissioning and operation of a new hydro power plant near Bujagali Falls on the Nile River, with a total installed capacity of 250 MW<sub>e</sub> and the following main characteristics: a 28 m high earth-filled dam, a powerhouse with five 50 MW Kaplan turbine-generators, various other buildings and structures including spillways and a 132 kV outdoor substation. Construction of site roads is also included and a quarry will be developed at the site to produce the necessary aggregates and rock fill material.

The plant will be connected to the power grid via a 93 km long 132 kV double circuit overhead line to the existing Mutundwe substation via a new substation at Kawanda, both located near Kampala. The line segment from Bujagali up to Kawanda (75 km) will operate at 132 kV but be insulated at 220 kV for future upgrading when justified by demand. There will also be 5 km of 132 kV line tying into a junction point on the existing line between Nalubaale Hydro Plant and Tororo substation. The lines and substations are not the responsibility of the borrower, but of the Government, and are therefore not part of the project but associated facilities. They have, however, been included in the Bank's due diligence work (from technical, financial, environmental and legal points of view).

### 5. PARTICULAR TECHNICAL OR TECHNOLOGICAL ASPECTS

The components, which primarily consist of civil works, turbines and generators, cables, transformers, switchgear, control and telecommunication equipment, are standard, well proven and widely used in the electricity industry. The fact that the project (the power plant) and its interconnection to the power system will be carried out by two different entities poses a risk of misalignment in time. However, in the worst case where the main line to Kampala is substantially

<sup>3</sup> A pondage power station is defined by having a short-term storage permitting the water flows to be stored during periods of low load to enable the turbines to operate during high load periods on the same or following days (maximum a few weeks). In this case the storage is only 5 hours of full load operation. A run-of-the-river plant uses the river as it flows and has a negligible storage capacity.

*Project: Bujagali Hydroelectric Project  
Operation no: 20050357*

delayed, the plant can operate for a couple of years via the 5 km connection to the Kiira-Tororo lines, delivering up to 180 MW to the grid.  
The economic lifespan is estimated to be 25 years.

## **6. IMPLEMENTATION**

### **6.1 Management**

(...)

### **6.2 Timetable**

The project has been under preparation since 2005 when the borrower was selected. The construction period is expected to start by mid 2007 immediately after financial closure, to last 44 to 48 months reaching completion in first half of 2011. Construction of the transmission lines and substations should only take 2 to 3 years.

### **6.3 Employment**

Project implementation is expected to create temporary employment equivalent to 3400 person-years, to a large extent drawn from the local population. The peak labour force will be more than 1250 persons. Workers will be housed in and around Jinja, the second largest town in Uganda; there will be no on-site workers camp.

## **7. PROCUREMENT**

### **7.1 Key Issues**

In 2004 the Government of Uganda, assisted by the World Bank, conducted an international competitive procurement to select a private company to re-vitalise the Bujagali project. In 2005 the Government selected the borrower to implement the project under a 30-year Power Purchase Agreement. Subsequently, EIB required the borrower to ensure that implementation of the project will be done in compliance with the Bank's Guide to Procurement. Subsequently, pre-qualification for the turnkey contract was published in the Official Journal of the EC and led to short-listing of four international consortia, of which eventually two submitted their bids in 2006. The one having submitted the most attractive offer was selected in January 2007.

### **7.2 Supporting information**

N.a.

## **8. OPERATION**

### **8.1 Management**

(...)

### **8.2 Use, production**

(...)

### **8.3 Tariffs / operating costs**

(...)

### **8.4 Employment**

(...)

## **9. ENVIRONMENTAL IMPACT**

### **9.1 Key Issues**

Due to the volume of the water storage, some 54 million m<sup>3</sup>, the project would require an EIA if located in the EU<sup>4</sup>. Also Ugandan law requires preparation of an environmental impact assessment. A detailed Environmental and Social Impact Assessment (ESIA) and a Resettlement and Community Development Action Plan were completed by the previous sponsor. After review and consultation with NGOs and the public in general, the reports were approved by the National Environmental Management Agency in 2001. In 2006, the original studies and plans have been reviewed and updated by an international group of environmental and social experts in compliance with all relevant IFC Performance Standards. The ESIA has been published in Uganda and on the EIB's website, as well as by other co-financiers, and the public consultation is still ongoing. The borrower has also retained the services of an independent NGO<sup>5</sup> to provide independent monitoring of the consultation activities and to provide a mechanism for stakeholders to file a grievance if needed. As part of the environmental action plan the borrower will appoint a Social and Environmental Manager who will be responsible for coordination and implementation of the overall environmental and social mitigation and monitoring programme.

The Bujagali area is rural, with small-scale or labour-intensive subsistence agriculture being the predominant land use. Between Nalubaale-Kiira and Bujagali the Nile flows within a deeply incised, steeply sloped valley, and drops in a series of rapids. The width varies from 200 to 600 m. The reservoir will occupy an area of 3.9 km<sup>2</sup>, of which approximately 20% will be inundated land and the rest is already occupied by the Nile. The reservoir is limited to some 5 hours of full load operation, however, due to a dam height of more than 15 m the project is defined as a large dam

<sup>4</sup> Annex I of the EIA directive 97/11 requires an EIA for dams designed to store water volumes exceeding 10 mio. m<sup>3</sup>.

<sup>5</sup> InterAid Africa.

scheme<sup>6</sup> and – in line with current international practice – a dam safety review panel of independent experts will be appointed by the borrower prior to start of works.

According to the ESIA, out of 5158 project-affected persons 634 individuals from 85 households need to relocate physically. 34 households have chosen to move to a new site a few km away developed specifically for resettlement. The remaining 51 households have elected to relocate to other sites using their cash compensation. The other households, who did not need to be relocated, have received or will receive compensation at market rates. Four white water rafting tour companies will also be compensated when shifting their business about 8 km further downstream where there are similar series of rapids that can be used for their operations. Based on two criteria, hectares flooded per MW generated and number of oustees per MW generated, the project compares favourably relative to other large dams around the world.

Part of a small wildlife sanctuary (16 ha) along the river, mainly known for its birdlife, will be partly inundated. This will be mitigated by enhancement planting in surrounding areas and by similar additional measures 10 km downstream of Bujagali, at the so-called Kalagala Offset site that previously has been considered for hydropower development, but which the Government in agreement with the lenders has earmarked for development of eco-tourism. Future hydropower development on the Nile shall instead take place further downstream, initially at Karuma (with up to 250 MW). The Nile River being an international waterway the Government has informed all the riparian states about the project.

The social impact of the project is expected overall to be positive – first of all in general by improving power supply on a national scale thereby supporting economic development – but also by creating direct and indirect local employment during construction, and improving water supply and health care for the project-affected people. Other initiatives are also being developed by the borrower in coordination with the local communities, e.g. improved fisheries, education, public health related programmes to combat malaria, HIV/AIDS and other sexually transmitted diseases. Also electrification is a possibility, requiring the cooperation of the Government and the private distribution company, Umeme.

The Bank has been approached by three NGOs stating that the project does not comply with the recommendations of the World Commission on Dams (WCD). These recommendations are a set of advisory guidelines, an aspirational framework, but not a regulatory or legal obligation. Although the borrower is not bound to comply it is the Bank staff's conclusion that in reality the project has been developed in the spirit of the recommendations and complies at a very high degree.

By virtue of substituting for alternative fossil fuel-fired generation and thereby contributing to a reduction in atmospheric emissions, including greenhouse gases, the project is possibly eligible for registration under the Clean Development Mechanism of the Kyoto Protocol. The borrower will apply for carbon credit development with World Bank assistance, however the benefits, if the application is successful, will be for the Government or UETCL. Roughly estimated, the project would avoid the emission of over 1 million tonnes of CO<sub>2</sub> per year, i.e. 25 million tonnes over the lifetime. For comparison, the emissions caused by the project during construction and the decomposition of biomass in the reservoir would be less than 300 000 tonnes in total.

Also for the new power lines and substations a social and environmental impact study and a resettlement action plan have been carried out and published. Five alternative line routes have been analysed and a solution chosen with the least impact on land use. The towers will be up to 50 m high and require a corridor of 30 to 40 m wide; the distance between the pylons will vary between 200 and 400 m. This associated project will traverse four ecologically significant areas, namely three forest reserves and a swamp. About 60 ha of forest land will be permanently lost to line corridors but this will be compensated by enhancement planting in other areas. In case of potentially important bird flight paths the conductors will be made more conspicuous. The scheme requires the relocation of about 160 households (425 persons) and affects in addition another 1740 households (about 4600 persons) who shall all be compensated in accordance with market conditions.

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<sup>6</sup> This is according to the definition of the International Commission on Large Dams, ICOLD.

*Project: Bujagali Hydroelectric Project*  
*Operation no: 20050357*

**9.2 Supporting information**  
N.a.

**10. MARKET, DEMAND**  
(...)

**11. INVESTMENT COST**  
(...)

**12. PROJECT RELATED CONDITIONS TO BE FULFILLED**

**12.1 Disbursement conditions**  
(...)

**12.2 Undertakings for the Borrower**  
(...)

**Direct Agreement Undertakings for the Government**  
(...)

**13. FINANCIAL AND ECONOMIC PROFITABILITY**  
(...)

**14. CONFIDENTIAL INFORMATION CONCERNING PUBLIC SECTOR PROJECTS**  
N.a.



## **APPENDICES**

### **A.1. TECHNICAL DESCRIPTION**

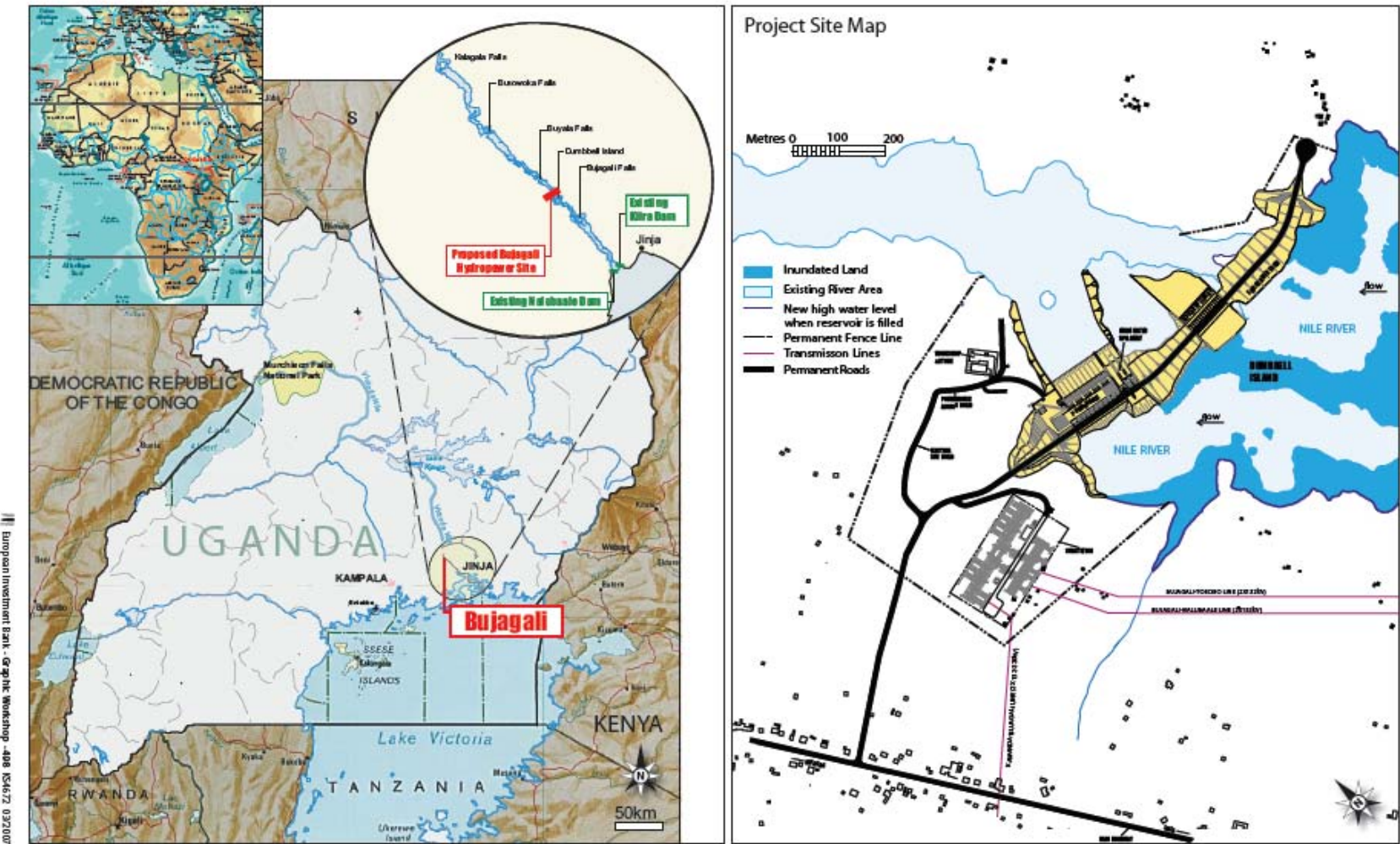
**(...)**

**A.2. PROJECT INFORMATION TO BE SENT TO THE BANK AND METHOD OF TRANSMISSION**

1. (...)

B. MAP

Project: BUJAGALI HYDROELECTRIC PROJECT - Uganda



European Investment Bank - Graphic Workshop - 408 154672 032007

**C.        PROCUREMENT STATISTICS**  
**(...)**

## D. 1. ENVIRONMENTAL SUMMARY SHEET

### Overall Environmental Assessment

<b>Project Operation n°</b>	Bujagali Hydroelectric Project, Uganda		
<b>Type of EIB financing</b>	Investment Project ▼		
<b>Promoter</b>	Bujagali Energy Limited (BEL), a special purpose vehicle created for the project		
<b>Enviro. Capacity</b>	Acceptable. One of the owners of BEL is experienced in power generation and has in-house expertise. Additional external capacity has been and will be hired as necessary.		
<b>Project Description</b>	A 250 MW greenfield pondage hydro plant with a storage of 54 Mm3, max 4 km2 surface, equivalent to 5 hours of full load operation. 132 kV power lines and substations are associated facilities, outside the scope of the project.		
<b>SEA carried out</b>	No ▼	<b>Comment</b>	
<b>EIA Screening</b>	A - Full EIA, Annex I ▼	<b>Enviro. Eligibility Code</b>	03 02 00 01 02 00 ▼
<b>EIA Stages</b>	<i>Documents obtained</i>		
<b>"A" &amp; "B" Projects</b>	<i>Studies</i> (incl. non-technical summary) Yes ▼	Yes ▼	
	<i>Consultation</i> (public, enviro. authority, transboundary) Yes ▼	Yes ▼	
	<i>Planning consent or authorisation granted</i> (permit, etc.) No ▼	No ▼	
	<i>Public informed of decision</i> No ▼		
	<b>3rd Party concerns</b> Yes ▼	Kenya, Tanzania, Sudan, Egypt	
	<b>Comments:</b>	These riparian countries are informed about the project	
<b>"C" Projects</b>			
<b>Environmental Legal Framework</b>	<b>National</b>	Environmental law	
	<b>EU</b>	N.a.	
	<b>International</b>	Agreement with Egypt about operation of water flow (Agreed Curve)	
<b>Social Assessment</b>	<b>Comment</b>	Integrated in ESIA report. All relevant aspects seem covered. Number of people to be moved relatively limited, 634 for the plant, and 425 for the power lines.	
<b>Nature Conservation Sites</b>	<b>Significant effect</b> No ▼ <b>For EU/Accessing/Accession/Candidate countries:</b>		
	If no <u>significant effect</u> , Form A ▼ If <u>significant effect</u> , Form B ▼		
	<b>Type of site</b> ▼	<b>Map</b>	▼
<b>Climate Change Aspects</b>	<b>CCFF</b> Yes ▼	<b>CCTAF</b> No ▼	<b>Carbon Funds</b> CDM ▼
<b>Site Visit and any other Observations</b>	Visit carried out to the site and surrounding areas, including the Kalagala Offset Site to be set aside for eco-tourism. A small wildlife sanctuary with birdlife will be partly inundated (16 ha). No other particular comments.		
<b>Major Project Risks</b>	<b>Risk rating</b> Low ▼	Risk - but not considered major - of delay of power lines and substations - to be carried out by government-owned promoter.	
<b>Overall Assessment</b>	A well-prepared project, comprehensive ESIA and consultation carried out by consultants. Thorough compensation plan and development schemes for project affected people (PAPs). Power supply unfortunately not guaranteed for PAPs, but is being considered. It depends not on BEL but on the Government's and Umeme's, the distribution company's, development plans for the area.		
	B1 ▼		
<b>Enviro. Monitoring</b>	<b>Required</b> Yes ▼	<b>Performance indicator(s)</b>	Environmental monitoring and mitigation plan
<b>Conditions</b>	Receive copy of ESIA approval. Independent Engineer to monitor implementation. Implement project in accordance with the approved ESIA.		
<b>Stage</b>	Appraisal ▼	<b>ENVAG Member</b>	<b>Completed by</b> on 19.03.2007

## D. 2. ENVIRONMENTAL SUMMARY SHEET






### Residual Impact Assessment

Project Operation n°		Bujagali Hydroelectric Project, Uganda 20050357					
AREAS OF IMPACT	MAIN IMPACTS / EMISSIONS	MITIGATION MEASURES	ACCEPTABILITY (of residual impacts)				COMMENTS / PROJECT RISKS
			I	II	III	IV	
<b>Location</b>							
Air	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land	About 0.8 km2 to be inundated	Compensation of land owners at market terms	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5158 project-affected people (PAP), of which 634 to be moved physically. For power lines, 4600 PAPs, of which 425 persons need to move.
Humans	Visual impact of plant and overhead lines	Properly optimised design	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flora, Fauna and Other Natural Assets	0.8 km2 to be inundated, including part of Jinja Wildlife Sanctuary (16 ha)	Enhancement planting in other places, and reserve Kalagala Off-set Site	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Kalagala could otherwise be developed for hydropower
Cultural Heritage	Believed to be home to divine spirits	Proper "resettlement" to take place	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Construction</b>							
Air	Dust	Good work practice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water	Accidental pollution fx with oil	Good work practice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land	Site roads to be built	Good work practice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Humans	Dust, noise, traffic	Good work practice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flora, Fauna and Other Natural Assets	Dust, noise, traffic	Good work practice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cultural Heritage	Work camp in Jinja, 8 km away	Hiring of local workers, and proper instruction to outside workers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	Risk of spread of HIV/AIDS	Training of staff, distribute condoms	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Operation</b>							
Air	Air pollution including CO2 from fuel firing avoided		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water	Change of flow, fluctuation up to 2 m within some hours	Information to neighbours	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land	About 0.8 km2 land occupied and inundated by dam	Compensation of owners at market conditions, enhancement planting other places, set aside Kalagala Off-set Site	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Humans	Traffic, fluctuation of water level	Information to neighbours	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flora, Fauna and Other Natural Assets	Traffic, fluctuation of water level	N.a.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cultural Heritage	Not affected		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	EMF from overhead lines	Properly optimised design	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Products</b>							
Air	Air pollution from fuel firing avoided		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Land	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Humans	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Flora, Fauna and Other Natural Assets	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cultural Heritage	Not affected		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### D. 3. ENVIRONMENTAL SUMMARY SHEET

## Social Assessment

<b>Project</b>	Bujagali Hydroelectric Project, Uganda
<b>Operation n°</b>	20050357

Nr.	Area of impact	Acceptability	With Conditions	Comments on project risks
1	Population Movements - including resettlement and migration. (see SAGN 1)	Yes 	To be implemented in accordance with approved ESIA	Number of people to be moved relatively limited, 634 for the plant (some of which have been moved), and 425 for the power lines. No particular risk foreseen.
2	Vulnerable Groups - including women, minorities and indigenous peoples. (see SAGN 2)	Yes 	To be implemented in accordance with approved ESIA	No particular risk foreseen.
3	Compliance with ILO core labour standards and impacts on employment. (see SAGN 3)	Yes 	To be implemented in accordance with approved ESIA	Positive impact on local employment, in particular temporary during construction. Perhaps even permanent for operation. No particular risk foreseen.
4	Attention to occupational and community Health & Safety. (see SAGN 4)	Yes 	To be implemented in accordance with approved ESIA	The borrower seems to be well focused on obtaining a good track record as regards H&S, including combating HIV/AIDS. No particular risk foreseen.
5	Outreach - consultation & participation with shareholders and stakeholders. (see SAGN 5)	Yes 	To be implemented in accordance with approved ESIA	The borrower's policy seem to be to maintain a constructive dialogue with affected people, NGOs and authorities. No particular risk foreseen.

**E. INVESTMENT COST ANALYSIS**  
(...)



Project: Bujagali Hydroelectric Project  
Operation no: 20050357

**F. PROFITABILITY ANALYSIS**  
(...)

## **G. OTHER RELEVANT ANALYSIS: analytical elements and risks**

### **NGO comments to the project**

Three NGOs (International Rivers Network (IRN), National Association of Professional Environmentalists (Uganda) and CEE Bankwatch Network) approached the Bank on 26 February 2007 criticising the Bujagali project for not complying with the recommendations of the World Commission on Dams (WCD)<sup>7</sup>.

First of all it is important to realise that the WCD recommendations are a set of advisory guidelines, an aspirational framework, but not a regulatory or legal obligation. The Bank considers them as useful guidelines but has not committed to apply them and neither the Government of Uganda nor the project sponsor are legally obliged to comply with these guidelines. However, an assessment by Bank staff concludes that in reality the project has been developed in the spirit of the recommendations and complies at a very high degree.

Below, the specific issues raised by the NGOs (in short: IRN) will be commented. First, the cover letter highlights **five key findings**:

1. IRN: Lake Victoria suffers due to overrelease of water.

Comment: The combination of a prolonged regional drought and increased release of water due to serious lack of electricity in Uganda has caused the lake level to drop by 1.6 meters in recent years. This trend has now been stopped by installing very expensive fuel-fired power generation as an interim solution. The sooner Bujagali will be built and commissioned the temptation to release too much water will be reduced as Bujagali will use the same water once more and thus – in simple terms – reduce the need for water release by half as the plants have similar capacity.

2. IRN: Climate change causes a hydrological risk. Lack of risk analysis makes it impossible to evaluate the economic viability and compare with alternatives.

Comment: The least-cost study (made by the consulting firm PPA and published by IFC) concludes that the project is the least-cost alternative and is robust also against low hydrology. Furthermore, climate change is unlikely to cause any dramatic change within the next 25 years (the economic life-time of the project). There are no feasible alternatives that can provide 250 MW of low-cost capacity within a reasonable time.

3. IRN: Transparency is not acceptable, essential documents such as the Power Purchase Agreement, the least-cost analysis and hydrological data are kept secret.

Comment: Both documents are published. The least-cost analysis and the ESIA (also public) contain all relevant hydrological data.

4. IRN: A comprehensive options assessment has not been carried out. There are 380 MW of energy sources that could be prioritised before Bujagali.

Comment: The least-cost analysis has investigated all possible alternative options. IRN's proposed alternatives are not least cost and therefore not a realistic sustainable solution for Uganda suffering from an energy crisis that "adds urgency to the decision-making process" (to use IRN's own words).

Secondly, IRN's analysis itself comments on the **WCD's 7** so-called **Strategic Priorities**. The individual points will be summarised and commented upon below:

#### **1. Gaining public acceptance**

IRN: Greater effort must be undertaken to comply with WCD.

Comment: This is an example of "the best being the enemy of the good". It is the Bank staff's impression that the ESIA process is of very high standard. The ESIA has been prepared by an international group of experienced environmental and social experts. They have a very high degree of knowledge of the project; several of them were also involved in the first attempt to assess the impact of Bujagali before it was abandoned by the previous sponsor. The process has been monitored from the beginning by environmental and social experts from at least 7 IFIs (WB, IFC, MIGA, EIB, AFD, DEG, Proparco) including

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<sup>7</sup> IRN, Analyzing Bujagali Hydroelectric Project's Compliance with the strategic Priorities of the World Commission on Dams, 8 February 2007

a 3-day workshop discussing the draft report. On top, a witness NGO has been hired to monitor the process in the field. It is difficult to see what more efforts could have been done to satisfy IRN.

## **2. Options assessment**

IRN: More analysis should have been done. More transparency is needed.

Comment: A comprehensive least-cost analysis has been carried out and has been published.

## **3. Addressing existing dams**

IRN: The ESIA does not address hydrological risk to Bujagali nor does it address the problems caused by the existing dams.

Comment: Hydrological risk is addressed by the least-cost study. The problems caused by overrelease from the existing dams would hardly have existed if Bujagali had not been delayed by some 5 years – partly because of NGO opposition. The Bank will seek to oblige the Government to operate all dams on the Nile in a sustainable manner either in accordance with the “Agreed Curve” or with another optimised water regime.

## **4. Sustaining rivers and livelihoods**

IRN: A cost-benefit analysis of river-based tourism and the loss of the Bujagali rapids should be carried out.

Comment: The river-based tourism will not cease, only move 8 km downstream to a similar site. The operators will be duly compensated and helped to move.

## **5. Recognising entitlements and sharing benefits**

IRN: The project-affected people (PAPs) should be primary beneficiaries.

Comment: They will all be compensated at market rates. Those resettled will be located in better houses, have better water supply, better school and health facilities. There will be direct and indirect job opportunities during construction, for some also during operation. There are also other community development activities planned. All in all it is the aim that PAPs will be better off due to the project.

## **6. Ensuring compliance**

IRN: a) If the Agreed Curve is revised it should be subject to an independent and transparent review mechanism.

Comment: Agree.

b) There should be a workable compliance system to address the needs of the PAPs. Compliance with commitments towards PAPs should be monitored by a truly independent body.

Comment: Compliance will be monitored by the Sponsor, the Government (NEMA), the lenders’ Independent Engineer and the lenders’ own experts. Although monitoring is hardly an issue, civil society (NGOs) is of-course free to establish additional measures – it seems a sound proposal to the benefit of the project if it is done with an open mind.

c) Compliance with the Kalagala Offset requires strengthening of the legal language of the off-set agreement.

Comment: IRN refers to an initial – rather weak - agreement between the WB and the Government; it was later reinforced to a much stronger commitment (4 June 2002). The Bank will seek in cooperation with the other lenders to oblige the Government to confirm its commitment to off-set Kalagala site as a nature reserve and for eco-tourism.

d) All compliance costs should be incorporated into the budget.

Comment: Agree, this is also believed to be the case.

## **7. Sharing rivers for peace, development and security**

IRN: The Government should stick to its agreements, such as the Agreed Curve, with other governments.

Comment: Agree. By building Bujagali the risk of not following the Agreed Curve is minimised as the same water will be used twice.

IRN: Before any new dam projects go forward there should be a Nile Basin-wide evaluation.

Comment: Such a study has already been carried out under the Nile Basin Initiative (a cooperation between the Council of Ministers of the Nile Basin states) supported by the World Bank, namely “Strategic/Sectoral, Social and Environmental Analysis of Power Development Options in Nile Equatorial Lakes Region”, recommending the construction of Bujagali.

**In conclusion**, the NGOs’ complaint does not contain any major issue in relation to the WCD recommendations that would cause the Bank to withdraw from the project.

## H. 1. VALUE ADDED SHEET (...)

## H. 2. VALUE ADDED SHEET

### ACP Investment Loans

### Appendix Development Impact Assessment Framework

Project  
Operation n°

Bujagali Hydroelectric Project  
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Pillar 1		Contribution to General Mandate Objectives and Priorities	
A. Conformity with the Priority Mandate Objectives			
A1	<u>Support for private sector</u>	Yes	▼
A2	<u>Support for commercially managed public sector</u>	Yes	▼
A3	<u>Creation of an "enabling environment" through strengthening of economic and social infrastructure</u>	Yes	▼
A4	<u>Support to financial sector</u>	No	▼
A5	Apply risk capital instrument (equity, quasi-equity, guarantee)	No	▼
A6	SME promotion	No	▼
A7	Support for privatisation	No	▼
Comment		Support to a Public Private Partnership outsourcing to the private sector a major public infrastructure development, attracting foreign direct investment to Uganda and enhancing the commercial viability of the country's electricity sector.	
B. Contribution to General Mandate Objectives			
B1	<u>Consistency with EC country and regional policies</u>	Yes	▼
	<u>Consistency with national priorities</u>	Yes	▼
B3	Contribution to Specific EU Development Initiatives	No	▼
B4	Environmental project	No	▼
B5	Regional integration project	Yes	▼
B6	Operation in least-developed, post-conflict or post-natural disaster country	Yes	▼
Comment		This project improves public infrastructure of vital importance for economic growth and private sector activities. Removing the shortage in electricity supply ranks high on the Ugandan development agenda. It will be linked to the regional electricity network.	

(...)

### H. 3. VALUE ADDED SHEET

#### ACP Investment Loans

#### Appendix Development Impact Assessment Framework

Project  
Operation n°

Bujagali Hydroelectric Project, Uganda  
20050357

Pillar 2		Quality and Soundness of the Project	
<b>C. Social, Governance / Institutional Aspects</b>			
C1	<u>Effects on Population Movements</u>	Satisfactory	▼
C2	Impacts on Vulnerable Groups, including Indigenous Peoples	Not applicable	▼
C3	Attention paid to Gender related aspects	Satisfactory	▼
C4	Attention paid to Core Labour Standards	Good	▼
C5	<u>Attention paid to Occupational Health and Safety</u>	Good	▼
C6	Attention paid to Community Health & Safety	Good	▼
C7	Policies for dealing with job reductions	Not applicable	▼
C8	Measures to improve performance	Not applicable	▼
C9	Sourcing sustainable suppliers	Satisfactory	▼
C10	Corporate Reporting Practices & Transparency	Satisfactory	▼
C11	Public consultations & participation relationships with shareholders & stakeholders	Good	▼
C12	Impact on Millennium Development Goals	Good	▼
<b>Comment</b>			
<b>D. Environment</b>			
D1	<u>Environmental Rating</u>	B1	▼
<b>Comment</b>			

(...)

## **I. CONTACTS, REFERENCES, MISSIONS, CONSULTANTS**

(...)