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5th May, 2007

TO: **THE DIRECTOR,**
COMPLIANCE REVIEW AND MEDIATION UNIT (CRMU)
INDEPENDENT REVIEW MECHANISMS
AFRICAN DEVELOPMENT BANK
P. O. BOX 323 OFFICE 6C-EPI C 1002
TUNIS BELVEDERE, TUNISIA
Email:crmuinfo@afdb.org

Dear Sir/Madam,

RE: REQUEST (CLAIM) ON THE PROPOSED BUJAGALI HYDROPOWER AND INTERCONNECTION PROJECT IN UGANDA.

Reference is made to the proposed Bujagali hydropower and interconnection projects in Uganda.

We have raised a number of social, economic and environmental concerns about the project to the project sponsors, Bujagali Energy Limited (BEL), Government of Uganda and the World Bank Group that have not been addressed ever-since the inception of the project in Uganda

We have learnt that the project is now at the African Development Bank seeking financial support and is in advanced stages of approval at the Bank. We have also learnt that the Bank instituted an Independent Review Mechanism (IRM) to investigation the Bank's compliance to its operational policies and procedures regarding projects supported by the Bank as a mechanism for persons adversely (likely to be adversely) affected by projects supported by the Bank to submit their grievances requesting the Bank to comply with its operational policies and procedures.

It is against this background that the National Association of Professional Environmentalists (NAPE) and other Non-Governmental Organizations (NGOs) are submitting this request to the Compliance Review and Mediation Unit (CRMU) of the Bank to conduct an investigation on the Bujagali project and the Bank's compliance to its operational policies and procedures while considering the project for financing. This is because the Bujagali project is based on flawed social, economic and environmental assessments and any action by the Bank to

finance the project will adversely affect the Ugandan society, economy and the environment and will be in violation with the Bank's operational policies and procedures.

An advance email has been sent to you and this will be followed by registered mail via your Country Office in Uganda.

Yours sincerely,

Signed by:

MURAMUZI FRANK
EXECUTIVE DIRECTOR

AFRICAN DEVELOPMENT BANK CLAIM ON THE BUJAGALI DAM PROEJCTS IN UGANDA

SUMMARY

The once stalled Bujagali hydropower project in Uganda is back and fast-tracking under a new developer, Bujagali Energy Limited (BEL), ignoring outstanding and new concerns raised on the project by the Ugandan civil society such as the impacts of hydrology and climate change on power generation of Bujagali, the costs of the project, its affordability, commitments on mitigations measures, Kalagala offset, community development action plans, compensation and resettlement processes, dam safety, etc. The project is in advanced stages of due diligence and approval processes for financial support at the World Bank Group, European Investment Bank, African Development Bank, among others. We have learnt that the African Development Bank, an institution intending to finance the Bujagali project, instituted an Independent Review Mechanism (IRM) in June 2004 to investigate the Bank's compliance to its operational policies and procedures in financing projects. It is against this background that we are submitting a request (claim) to the African Development Bank Independent Review Mechanism for consideration of an investigation of the proposed Bujagali hydropower projects in Uganda that the Bank intends to finance and to request the Bank to stay its decision on financing the project, until such an investigation is done. We believe that the failure of the Bujagali project sponsors to address civil society's outstanding and new concerns on the project is a violation of African Development Bank's operational policies and procedures and any action by the Bank to support the project before the concerns are resolved is a violation of its own operational policies and procedures that will greatly harm the Ugandan society, economy and the environment.

1.0. INTRODUCTION

In 2001, we submitted a claim to the Inspection Panel of the World Bank Group concerning the Kiira (Owen Falls Extension), Nalubaale (Owen Falls) and the proposed Bujagali Power stations in Uganda, which was duly addressed by the Panel (www.worldbank.org/inspectionpanel).

Following the intervention of the Inspection Panel and coupled with the performance shortfalls, controversies related to social, economic and environmental aspects, evidence of corruption associated with the AES Nile Power's (AESNP) Bujagali dam project and its failure to reach financial closure at the World Bank Group, the company, AESNP, pulled out of the project, which subsequently stalled the project.

Due to the ever-escalating electricity demand and the inability of Nalubaale and Kiira hydropower stations to generate enough electricity to meet the country's demand, the Government of Uganda has revived and is in the process of fast-tracking the Bujagali hydropower dam project under different proponents, locally registered as Bujagali Energy Limited (BEL)[1] that is currently being considered for financial support by the World Bank Group, African Development Bank, European Investment Bank, among others. This has resulted in many shortcuts being taken to ensure that the project is approved as fast as possible, ignoring outstanding and new concerns raised on the project. Like in the previous

[1] A consortium of IPS of Aga Khan, Sithe Global and others

AESNP case, BEL's Bujagali hydropower dam project is based on flawed assumptions and data that have little or no bearing to the current situation and therefore are not an adequate basis for approval of the project.

We have learnt that the African Development Bank has instituted an Inspection Panel of its own to review the Bank's compliance to its Operational Policies and Procedures (OPs). This is a welcome development, because the African Development Bank has become sensitive to the realities of the impacts of its Bank financed projects and the need for selfevaluation to ensure effective and meaningful development in Africa.

We also appreciate that the Africa Development Bank acknowledges that often:-

- There is inadequacy in personnel to carry-out the full range of activities specified by the Environment policies, leading to inadequate information concerning the environmental impacts of Bank financed projects
- Projects financed by the Bank are not properly categorized
- There is need for improvement in the design, implementation, monitoring and regular updates of Environmental Management Plans (EMPs) and Environment and Social Management Plans (ESMPs)
- While there are separate national institutions responsible for environment issues in some Regional Member Countries (RMCs), there is often lack of environmental expertise in the implementing units in the RMCs
- There is need to move away from stand alone infrastructure projects to a more holistic approach that fosters sustainable development and poverty reduction
- There is need for adequate communication and coordination between the Bank and RMCs to ensure dissemination of policies and guidelines and reduce transaction costs
- There is need for incentives to enhance environmental and social awareness and stewardship
- There is need for an effective monitoring and evaluation process based on baseline data and quantifiable performance indicators relating to social concerns
- There is need for public disclosure and transparency of environmental information, especially Environmental and Social Impact Assessments (ESIAs).

For these reasons, we request the African Development Bank to conduct an independent investigation on the Bujagali hydropower project in Uganda.

It is against this background that the National Association of Professional Environmentalists (NAPE) and other NGOs are submitting this claim to the African Development Bank (ADB) for consideration of an investigation in the Bujagali hydropower and Interconnection Projects in Uganda currently under consideration by African Development Bank for possible financial support. The following are our concerns regarding the Bujagali dam project that we desire the Bank to take into account.

2.0. CONCERNS ON THE BUJAGALI HYDROPOWER PROJECT

2.1. Hydrological Risk, Climate Change, Cumulative Impact Assessments and Kalagala Off-set

2.1.1 BEL's Social and Environmental Assessment (SEA) does not adequately address the outstanding questions about hydrological changes on power production at the Nalubaale,

Kiira and the proposed Bujagali facilities, especially now when Lake Victoria water levels have declined.

2.1.2. Without doubt, Kiira has contributed substantially to the over-draining of Lake Victoria, causing a lot of misery and economic loss to Uganda and neighboring countries. This has not been properly addressed in the documents we have seen.

2.1.3. According to the SEA, BEL has little or no control on the manner in which Nalubaale and Kiira will be operated by Government of Uganda (GoU) (HPP Main Report, p356 6th paragraph) and therefore cannot under the circumstances dictate the outflow rates through upstream power stations to ensure sufficient water for Bujagali's power production, implying that Bujagali's operation will be highly dependent on the operations of Kiira and Nalubaale. Now that BEL cannot control the outflow of water from power stations upstream and did not obtain commitment from GoU to ensure sufficient outflow rates through Nalubaable and Kiira, what guarantees does BEL have that the project will have enough water and generate the projected capacity? This issue is a lynchpin in the project's economic viability.

2.1.4. BEL's SEA deliberately projects Lake Victoria as being capable of providing adequate water for the project even in its current diminished hydrological state, which is not possible. Where is the additional water going to come from? It is acknowledged by Engineer Elimu Esimu of Eskom that "currently the facilities (Nalubaale & Kiira) are not running at full capacity, because of limitations from tail water and the need to maintain live storage"(ref. Phase 2 Consultation Material PCDP Appendix C, p 12), implying hydrology is still a major limitation. It is now clear that the Agreed Curve[2] is no longer being respected and the Victoria Nile flow regime has changed; consequently the original long-term energy output assessment for Bujagali is no longer valid (WREM, 2005a). Experts reported that although Bujagali dam was designed for 234-290MW, in reality, this is not possible under the current hydrological regime. Independent experts projected the output to be a maximum of 172MW. BEL's SEA does not address the overall issue of Lake Victoria's long-term health, other than to assert that Bujagali Dam could lead to more sustainable flows out of the lake as it will "make use of the same water" released by the existing dams. Neither the SEA nor the documents it is based on explore the opposite scenario (i.e. that a new dam will provide more incentive to release higher flows, in order to maximize electricity sales).

2.1.5. The Ombudsman of the IFC and the World Bank Inspection Panel stressed the need to address the hydrological flow rates in the previous AESNP Bujagali Project and they considered hydrology critical for Bujagali dam. BEL does not address this concern.

2.1.6. BEL's SEA reports do not address climate change and its possible impact on power production at Bujagali. Current and future climate models indicate hotter, drier conditions, lower lake levels and lower downstream river flows (WREM, 2005a). It is unknown whether Lake Victoria will recharge to the high levels and outflow experienced during the 1961-2000 period. It is also not known whether such a recharge will occur in the next few years or in the next 100 years. A 2005 report by Water Resources and Energy Management International Inc., a US consultancy commissioned by the Uganda Ministry of Energy and Mineral Development, predicts that climate change could dramatically reduce the lake's levels and therefore outflow to the Nile. The report states: *"Lake evaporation shows a steadily increasing trend, a direct consequence of temperature increase. From 2025 on, lake evaporation becomes consistently higher than lake rainfall with this deficit exceeding 20 billion cubic meters per year toward the end of the century. It thus appears inevitable that, if*

[2] The Agreed Curve is a water release (outflow) rate through the hydropower stations built on River Nile based on natural river flows (run-of-river) that is directly proportional to the levels of the Lake Victoria that was agreed upon by Government of Uganda and the riparian countries, Egypt and Sudan as an operational rule for releasing water through the power stations on the Nile River.

the rainfall process remains stationery, climate warming will disturb the historical balance of lake rainfall and evaporation, and will create serious deficits."

2.1.7. A recent (2006) technical report of Directorate of Water Development (DWD), a lead agency, is missing in BEL's SEA. This could probably address the issues of hydrology, climate change, declining water levels in Lake Victoria and River Nile. No study released to date analyses the risks from climate change-induced drought and other hydrological changes to the performance of Bujagali.

2.1.8. The February 2007 report, Economic and Financial Evaluation of the Bujagali Projects by Power Planning Associates (PPA_1), bases its analysis on flawed hydrological and climate change assumptions and computations. For example:-

i. The economic analysis is based on a water release operational rule that does not follow the *agreed curve*, yet existing dam operators' permits require that this rule be adhered to.

ii. The PPA_1 recommended "Constant Release" operational rule for Lake Victoria based on low ($687m^3/s$) and high ($1247m^3/s$) hydrological scenarios instead of the current release rate ($400\ m^3/s$) based on the agreed curve (natural flows) will not permit quick recovery of the Lake and lead to over-draining of the Lake in order to meet targeted electricity generation of Bujagali hydropower station and the current electricity demands. In addition, the constant flow will lead to increased sedimentation, a change in water temperature, vegetation and geomorphology that will affect ecosystem functions, fisheries, livelihoods, tourism recreational opportunities and electricity generation capacity downstream.

iii. The entire economic analysis is based on lake levels that have been observed in the last 100 years, instead of the recently experienced (3-5 years) and likely lake levels over the next 30 or more year scenarios.

iv. The report also assumes that climate change will not have a major impact on future lake levels, which is highly doubtful. Similar concerns were raised by independent analysts[3] (*Annexes 1 & II*).

2.1.9. The last Inspection Panel report stated: *"The Panel consequently concludes that the issue of cumulative effects, addressed by Management and raised by the Requesters, is of real significance and is deserving of greater attention."* Although much time has passed since the Bujagali project was first proposed at the World Bank, to date the cumulative impacts issue remains unresolved. There was no deliberate attempt by BEL to identify cumulative impacts. There are no Cumulative Impact studies on Building a Cascade of Dams along the River Nile, including Bujagali. The SEA also does not discuss what changes to the existing dam complex would be required to begin to restore the Lake's level, and how such changes would affect Bujagali. The World Bank and IFC also echoed that lack of a comprehensive management plan gives rise to long-term management challenges of the River Nile. A recent analysis by Engineer Daniel Kull of Lake Victoria and the proposed hydrological curve change (*Annex II*) has revealed that in order for Lake Victoria water levels to recover quickly, the operational rule of the River Nile waters for electricity generation should conform to the agreed curve (natural flows). It remains to be seen if other analyses for the project will properly address these concerns. Generally, the ongoing debate over the existing dams' role in the draining of Lake Victoria should be settled in a transparent, participatory way. This requires the timely release of relevant data

[3] An Analysis of "Bujagali II-Economic and Financial Evaluation Study-Final Reports" by Power Planning Associates by Pete Tsournos, Associate Professor, Department of Economics, California State University- Chico and Engineer Daniel Kull. "Lake Victoria and the Proposed Hydrological Curve Change".

about water releases through the dams[4], information about hydrological assumptions and commitments from the Government on future dam operation and water releases.

2.1.10. Kalagala "Offset"

Paragraph 1 of the agreement between World Bank and GoU states that *"Government of Uganda undertakes that any future proposal which contemplates a hydro power development at Kalagala will be conditional upon satisfactory EIA being carried out which will meet the World Bank Safeguard Policies as complied with in the Bujagali project. Government and the World Bank will jointly review and jointly clear such an EIA"* (HPP Main Report, Appendix D1, 2006). This, however, is not a guarantee that Kalagala Falls would never be developed for hydropower. The commitment on Kalagala Falls as an "Off-set" by government of Uganda is not binding. It does not completely remove Kalagala as a future dam site. Legal interpretation of the agreement by the Inspection Panel also confirmed that there was no guarantee for Kalagala as an offset for Bujagali (Ref. Inspection Panel Report, 2002).

The lack of up-to-date and adequate information on hydrology, climate change, cumulative impacts assessments and commitment on Kalagala "Off Set" in BEL's SEA violates the African Development Bank Policies on Environmental Assessment. We believe that the absence (inadequacy) of this critical information will negatively affect the well being of Ugandan society, in particular and East Africa, in general.

2.2.0. Economic, Comprehensive Options and Affordability Assessment

2.2.1. There is no evidence in the SEA report that a comprehensive economic analysis for Bujagali HPP was done. What has been released on the World Bank website (www.worldbank.org/bujagali) is not comprehensive and therefore cannot be used as basis for determining the economic viability of the project. Therefore, it is difficult to determine the economic viability of the project. Both the World Bank Inspection Panel and IFC Compliance Advisor/Ombudsman echoed similar concerns in the previous AESNP Bujagali dam project. The Inspection Panel recommended that comprehensive assessments be carried out before any further damming of the Nile could be done.

2.2.2. The recent (February 2007) economic analysis by PPA_1 also does not adequately address the economic viability in relation to hydrological risks, social and environmental impacts. The authors of the report only highlight the benefits and not the costs associated with change in water flows and disruption of people's livelihoods of lake-side dwellers and businesses.

2.2.3. The incremental social and environmental costs or damages attributed to Bujagali project were not monetized, consequently allocating a zero monetary value to the environmental damages and social costs by default. The 10% social discount rate used in the economic analysis is too high, underestimates the Bujagali project's damage costs and indicates that the World Bank favors projects that produce short-term benefits against long-term costs. The economic analysis should include the monetized social and

[4] At an October 2006 public meeting in Kampala about recent drops in Lake Victoria's water levels, the Uganda Ministry of Energy disputed that the dams were a primary cause of the problem, and promised to release data to prove that. To date, despite numerous written requests, the data has not been released. Hydrologists are asked to see the following: Annual Net Basin Supply (NBS) for the Lake Victoria Basin for all years on record; Daily outflow from both the Nalubaale and Kiira dams since construction of Nalubaale, however most importantly since construction of Kiira, until the present; Daily Lake Victoria water level, measured at Jinja, since construction of Nalubaale, although again most importantly since the construction of Kiira, until the present; Daily Agreed Curve prescribed Owens Falls outflows since construction of Nalubaale, although again most importantly since the construction of Kiira, until the present.

environmental costs of building a dam, altering water flows and disruption to the livelihoods of lakeside dwellers and businesses.

2.2.4. BEL's SEA report (HPP Main Report, p335) states that "if Bujagali were not to be built, then either lack of electricity will persist or more expensive alternatives will be needed to be built." The fact is that if target levels of energy cannot be met with Bujagali, other more costly sources will be needed, until the proposed Karuma project is commissioned.

2.2.5. The economic analysis failed to systematically determine the macroeconomic benefits of the Bujagali project. The macroeconomic analysis was based on two case scenarios 1) the least-cost expansion plan with Bujagali and Karuma and 2) the least cost expansion plan without Bujagali and with Karuma commissioned as early as 2012. The economic analysis was also based on demand forecasts, base fuel, capital cost and low hydrology. The assumptions are that thermal energy will be displaced earlier, there will be two investments (Bujagali & Karuma) instead of one (Bujagali) and tariffs will be lower when Bujagali is around compared to when it is absent for households connected to the grid, while those not connected will not be affected. These assumptions are erroneous, because the reduction in prices of goods and services will be small since the reduction in cost of electricity production, tariffs and macro-economy accruing from Bujagali project will be small.

2.2.6. It is also critical to involve stakeholders from other countries sharing Lake Victoria in addressing the problems caused by the changes in water flows and to come up with workable solutions for the long-term effects.

2.2.7.An analysis of the risks of climate change on Uganda's energy sector and its economy should also be undertaken and publicly released.

2.2.8.Other alternative energy options have not been adequately studied to provide evidence that Bujagali dam project is the least-cost option. Again, the recently released economic analysis by Power Planning Associates does not adequately assessing the alternatives, yet there have been various efforts in the recent past to analyze Uganda's renewable energy potential. Another recent Strategic/Sectoral, Social and Environmental Assessment (SSEA) study on power development options in the Nile Equatorial Lakes region by the Nile Basin Initiative (NBI)/NELSAP[5] does not adequately address the alternative energy options. This NELSAP report restricts itself on energy options that have some form of preliminary data, a degree of development and emphasizes regional energy trade at the expenses of known and promising potential energy options whose study has been limited, but could prove more relevant to national energy development and energy security needs. Therefore, the NELSAP report has limited national interest and is not an adequate basis for decision-making regarding power development options for Uganda. The known potential alternative energy options that have not been taken seriously by government[6] and the NELSAP study include:-

[5] . Nile Equatorial Lakes Subsidiary Action Program (NELSAP)

[6] Ref. Uganda's Ministry of Energy and Mineral Development's "Support of Renewable Energy Development in Uganda" (http://www.ren21.net/iap/commitment.asp?id=127), which had as a goal "By 2006: solar PV systems equivalent to 320 kWp sold to households and institutions; a comprehensive database of Uganda's renewable energy resources developed; feasibility studies for the development of an additional 60 MW completed."

i.**Bagasse:** Although it has been discussed for years, the country has developed only a few megawatts of its currently estimated 40MW potential[7].

ii.**Small hydro (less than 10 MW):** Of at least 46 MW at 16 sites that has been identified, only 13MW have been developed.

iii.**Micro-hydro (less than 100 kilowatts):** A limited number of sites have been developed, despite there being at least 40MW of potential[8].

iv.**Karuma Dam (150 MW)** is considered to be less socially and environmentally destructive than Bujagali (and in fact than all currently proposed large dams in Uganda). It would have the added benefit of bringing electricity to the northern part of the country, whose development has been marred by continued rebel conflict. It was previously compared directly to Bujagali, but lost-out over economics. Later, Karuma's project sponsors in Norway discovered that the economic analysis used to justify Bujagali was based on greatly inflated costs for building Karuma[9]. Currently, it is alleged to be 10 months behind Bujagali schedule in Uganda's energy development project cycle[10]

v.**Geothermal:** Uganda has significant potential, with estimates ranging up to 450 MW, but studies have lagged behind hydroelectric analysis. Although the Bujagali EIA by Burnside International Ltd. states that only 45 MW is feasible, this seems premature and pessimistic as some of the sites they refer to as having a poor chance of commercial development are still being studied. Experts we have talked with who are working directly on such studies say that the potential for specific sites is much greater than the Project SEA indicates. The economic analysis by Power Planning Associates reports a geothermal potential of only 40MW, raising doubt on the credibility of their findings.

vi.**Municipal Solid Waste:** Uganda has an estimated 10-30 MW potential.

vii.**Solar:** The East African recently reported: *"The government's plan to save 46MW of grid power during peak hours using solar photovoltaic and solar water heaters has not taken off. Government had estimated that a total of 100,000 grid connected consumers would install solar PV systems and use solar lighting instead of grid electricity."*[11] Energy used for water heating is a significant contributor to the electricity demand, accounting for almost 50MW. Experts estimate that 10MW of peak power could be saved immediately (and more in future) with solar water heaters for grid-connected customers. Government of Uganda has abandoned solar energy to individual, NGO and local community development interests.

viii.**Efficient Lighting:** The bulk of Uganda's peak demand is used for lighting, which consumes up to 92MW, according to a World Bank study. If all lights were replaced

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[7] "Review of Norwegian support to the Energy Sector in Uganda," 13 June 2006, by the Nordic Consulting Group. The report notes that in 1998, Kakira Sugar Works planned to install a 30MW bagasse-fueled electricity plant, which could have been installed in 2 years' time. Instead, the government focused on the "presumably less expensive power generation options at Owen Falls Extension and Bujagali."

[8] Ibid

[9] "Confidential report over-prices competing Karuma Falls project," Development Today, December 3, 2003. The article states that "a World Bank report comparing Uganda's energy options operates with cost figures for the Norwegian backed Karuma hydropower project that are some US$200 million higher than those the developer, NORPAK, has presented to the Ministry of Energy in Uganda. In a comparison of Karuma with Bujagali, the Canadian consultant firm Acres International has used its own design concept for Karuma … Bank management has insisted on keeping the Acres report secret, even though the Bank's Inspection Panel states that not making it public is 'not in compliance with the World Bank Disclosure Policy. The report was the key document in the Bank's decision to support the Bujagali project in December 2001."

[10] As reported by the Minister of State for Energy Hon Simon D'Ujanga at a Ministry of Energy and Mineral Development, in collaboration with World Bank, Public Briefing held at Serena Hotel in Kampala 4th April, 2007.

[11] http://allafrica.com/stories/200610100044.html

with energy-efficient light bulbs, the country's peak demand could be cut to below 20MW[12].

ix.**Transmission Losses:** According to the 2006 Bujagali EIA by Burnside International Ltd., "Another option to reduce demand is to reduce technical losses, which for Uganda is high at 21 percent. Acres (1999) estimated that improvements to the country's failing distribution infrastructure could eliminate as much as 30 MW of losses from the grid." On 3rd October 2006, the East African reported that Uganda was applying for a US$180 million loan from the World Bank to cover a variety of investments in the energy sector; only US$10 million from the project is expected to go toward demand-side management and energy efficiency measures[13].

x.**Wind power potential** needs further exploration, as wind speeds have only been recorded at low heights, not the 10 meters that is standard for wind power analysis[14].

xi.**Improved, efficient stoves and biogas digesters** would be key to bringing cleaner energy to the rural poor, and reduce deforestation from cutting fuel wood.

Uganda Government technocrats have dismissed the contribution of these alternative energy options based on their development costs and difficulty to connect to the national grid. The SEA does not give cost, cost-benefit and opportunity-cost scenarios and calculations for installation and development of these alternative energy options as basis for determining Bujagali as the least-cost option. The idea of dismissing energy alternatives, because they cannot easily be connected to the national or regional grid (*BEL's HPP Main Report, p167-171*) is erroneous. What should be assessed is rather whether alternative electricity options will help reduce the burden on existing national grid-based hydropower at competitive costs (prices) than other options by taking away areas where other energy options could be developed as independent grids rather than emphasizing the need for connectivity to the national or regional grid. These independent grids could prove more beneficial to the majority of the people and the current rural electrification scheme being promoted by government. It therefore becomes clear that the various energy options have not been assessed in either a comprehensive or balanced way as part of the evaluation leading up to Bujagali. The East African Commission, in a report on the decline of Lake Victoria's water levels[15] stated that*: "Partner states should make deliberate efforts to reduce dependency on hydropower by developing alternative sources of energy like geothermal, wind, solar, thermal and natural gas within 5 years."* But, the government of Uganda, the project developer and the World Bank are proceeding with Bujagali as the least–cost option, yet this has been effectively disputed.

The World Bank Group, like the Ugandan government, has skewed its research efforts to consistently promote Bujagali above other options. In the project's first incarnation at the Bank, data was manipulated to justify Bujagali as the "least–cost" option for Uganda after its consultants pointed to other projects as cheaper. While the World Bank's 2002 appraisal of

[12]"Reduce your power costs, use energy saving bulbs," New Vision, January 22, 2007.

[13] The Energy Ministry has identified preliminary needs to improve efficiency, including educational programs to increase awareness on energy conservation and efficiency; a program to reduce the cost of efficient lighting; a program to subsidize energy efficient technologies; a national building code based on energy efficiency concepts (and a program for compliance); and a host of other important needs.

[14]"Investing in Uganda's Energy Sector," http://www.ugandainvest.com/energy.pdf

[15] Special Report on the Declining of Water Levels of Lake Victoria, April 2006, by the EAC Lake Victoria Basin Commission (http://www.eac.int/lvdp/lake_victoria_waterlevels_apr_06.pdf)

the Bujagali project was over-optimistic in many instances, the analysis of alternatives to the project was consistently pessimistic. This is still a problem with the new BEL Bujagali project. Going back even further, the World Bank used unusually optimistic hydrological data on the Kiira project, and claimed there was little risk to using the optimistic figures (even though most experts at the time believed otherwise). This has resulted in drastic draining of Lake Victoria to low levels close to those in 1924. A comprehensive, independently facilitated and participatory options assessment process is needed for future energy planning in Uganda, especially one that incorporates a rights and risk analysis. More importantly, there needs to be concerted action to develop these resources.

2.2.9. Affordability

i. Bujagali remains an economically risky project, a risk worsened by changing hydrology and climate. The cost of Bujagali to Uganda has long been a contentious issue, and questions have been raised about citizens' ability to afford its tariffs, the high cost of the project, which has grown considerably and issues of indebtedness. At one time, the cost of Bujagali project was reported to be US$430 million, then US$550 million and then US$580 million. From January 2007 to end of March 2007, the Bujagali cost has risen from US$735 million to US$860 million and is expected to escalate even higher when other additional costs are included. The Prayas report of 2002 indicated that the project had been over-priced by more than double the actual costs, which could lead to a national loss of more than US$20 million in excessive payments each year. In a meeting between the World Bank and NAPE held on the 28th February 2007 in Kampala, World Bank acknowledged that the cost of Bujagali project had increased by 30%.

ii. While evolution of tariffs of the Bujagali project was a requirement for the economic analysis, omission or commission deliberately understated them understated in the analysis. The 6 or 6.5 US cents frequently quoted for the Bujagali project is a projected tariff that will be paid by consumers 30 years after commissioning the project and loan amortization. Tariffs that will be incurred after commissioning the project and during the loan amortization period have deliberately been omitted, with the explanation that there is a formula in the Power Purchase Agreement (PPA_2) for computing the tariff, whenever necessary and therefore "there is no need for tariff projections"[16]. What then was the price (tariff) against which the (PPA_2) was signed by government of Uganda?

It is, therefore, increasingly becoming clear that Bujagali Dam will not meet the basic energy needs of the majority of Ugandans who are now without power and live far from the national grid. Biomass (burning wood) continues to account for more than 90% of the nation's primary energy use, and only a fraction of the population can afford unsubsidized electricity. Bujagali will feed into a very limited national grid, its power bound mainly for Kampala, Jinja, Entebbe and other urban centers. Therefore, we are convinced that, even if the national grid covers the whole of Uganda, electricity from the Bujagali project would not be affordable. The high cost of the project will further limit funds available for rural electrification and is expected to lead to reductions in subsidies for electricity tariffs for grid-connected users. Uganda already has the most expensive power in the region and tariffs have more than doubled in recent months, thus pushing more people out of the already limited market for electricity. This will therefore negate the country's economic development and efforts for poverty eradication.

[16] As reported by the Executive Director of the Electricity Regulatory Authority (ERA) at a People's Public Hearing on the Bujagali Hydropower Project at Grand Imperial Hotel in Kampala held on 30th March 2007

We believe that the absence of an adequate and comprehensive economic and alternative (options) assessment of the Bujagali dam Project violates the African Development Bank Policies on Economic Evaluation of Investment Operations, Poverty Reduction, among others, which requires the evaluation of projects to ensure that they meet development goals. The Bank assesses the robustness of the project with respect to economic, financial, Institutional and environmental risks. The Bank's economic evaluation considers the sources, magnitude and effects of the risk associated with the project, by taking into account the possible range in values of the basic variables and assessing the robustness of the project's outcome with respect to changes in these values." There is sufficient evidence that the Bujagali dam project was not subject to this kind of analysis.

2.3.0. Information Disclosure, Transparency and Openness regarding the Bujagali Dam Project

2.3.1. It is a requirement of the African Development Bank that there is sufficient information disclosure, transparency and openness regarding Bank financed projects. It is our hope that the Bank will ensure that these principles are met.

2.3.2. More transparency and openness is needed on how various options have been evaluated. At least, project proponents should release all documents on the project's economic viability, including all studies on the Lake Victoria/Nile hydrology, the PPA_2, and options analysis. The information must be released with adequate time to review before further action is taken on Bujagali. The only document released for review was BEL's SEA, which does not address the overall issue of Lake Victoria's long-term health, other than to assert that Bujagali Dam will be designed based on the "Agreed Curve."

2.3.4. The key document that assigns economic risks, the Power Purchase Agreement (PPA_2), was only recently (January 8, 2007) released for public scrutiny at the Uganda Electricity Regulatory Authority's (ERA) Office in Kampala. It does not include the costs of Bujagali dam project, it does not apportion responsibilities, risks and guarantees between the parties regarding the dam project.

2.3.5. The previous PPA_2 for AESNP was first kept secret, until after the High Court of Uganda ruled[17] that it is a public document that should be made public. This was also the position of the Inspection Panel in 2002, which stated that "It seems evident that full disclosure of the PPA_2 is vital, if the intent is to place the public in a position to analyze, understand, and participate in informed discussion about viability of the Project and its impact on the economy and well-being of Ugandans." When the AESNP PPA_2 was finally released, it was revealed that it posed unjustifiable risks to the Ugandan government, consumers and taxpayers.

2.3.6. Uganda laws require that Parliament must approve the state's obligations under the PPA_2. There is no evidence that BEL's PPA_2 has been debated and approved by Uganda's Parliament, yet it is reported in BEL's SEA to have been signed way back in 2005 by government. BEL's PPA_2 was therefore signed without incorporating the costs of the project related to studies, construction and compensation and resettlement issues, which will definitely be reflected in the tariff of electricity from the Bujagali project. This is not proper.

We believe that the discrepancies in the PPA_2 process poses a great threat to the Ugandan society and economy and is a contravention of the law of Uganda and violates African

[17] Greenwatch vs GoU & UETC ref. HCT-00-CV-MC-0139 OF 2001

Development Bank's Policy on Information Disclosure, Accountability, Economic Evaluation of Investment Operations, Poverty Reduction, etc.

2.4.0. Dam Safety Issues

Bujagali dam design does not adequately consider the safety problems regarding the old Owen Falls (Nalubaale) dam, especially now when the powerhouse and bridge have large cracks. BEL's SEA states that a Bujagali Dam Safety Panel (BDSP) shall be formed. Just forming a dam safety panel is not enough. There should have been an integral comprehensive plan and strategies for addressing dam safety issues. Such strategies should have included concrete steps to decommission the old Nalubaale and disaster preparedness mechanisms and associated costs. Such strategies are very important; especially since there was no EIA done for Kiira dam and no post-construction audit done for Nalubaale dam. The issue of whether Bujagali Dam would be able to survive a failure of the Owen Falls Dam is still a major concern. Failure to address dam safety issues and environmental audits in the SEA violates African Development Bank's Policies on Safety of Dams. The African Development Bank Environmental and Social Auditing Operational procedure (2000) *"states Audits form a central part of the Bank's project cycle. Audits are a tool to systematically, independently obtain and objectively obtain evidence to evaluate project compliance with environmental and social loan conditionalities and the Bank's crosscutting policies. To ensure that audits conducted by the Bank are of uniformly executed and to a high standard, the audit procedure and auditing process are to be integrated into Bank Operational Procedures".* The Banks Integrated Environmental and Social Impact Assessment (IESIA) guidelines (2003) stipulate that the bank will take an active part to promote *"best practices".*

2.5.0. Indigenous Peoples, Cultural and Spiritual Issues

BEL's SEA considers the project area as not inhabited by indigenous people. It therefore considers Basoga as not being indigenous, yet the Constitution of the Republic of Uganda (third schedule) considers Basoga as an indigenous people. Has the constitution of Uganda changed? Or is the Constitution of Uganda (1995) not relevant to the Bujagali project? African Development Bank's Environment and Social Auditing Operational procedures (2000) and IESIA 2003 guidelines consider indigenous people and cultural issues important in the development of Bank supported projects. Now that African Development Bank is planning to financially support Bujagali dam project in Uganda, any omission on the Bank's part in considering the importance of peoples and cultural property is a violation of the Bank's own policy and procedural guidelines. Cultural and spiritual issues in the Bujagali project area were inadequately covered in the SEA. It is assumed in the SEA to have addressed cultural and spiritual issues of the affected community. This, then calls for an effective consultation process involving all clans that are culturally and spiritually attached to Bujagali Falls followed by a public hearing.

2.6.0. Compensation and Resettlement

2.6.1. BEL's SEA states that AESNP, the previous project proponent, completed land acquisition, resettlement and relocation of all residents formerly located in the reservoir area and compensated land owners and other project affected people. However, houses and facilities provided to the resettled communities by AESNP are now dilapidated less than five years after construction, implying that the structures were poorly constructed and would probably soon crumble. This calls for a review of the structures into which

dam-affected people were resettled to establish their appropriateness and suitability as compensation and safety.

2.6.2. Most of the people who were moved in 2002 were not given land titles to their new lands, which caused great uncertainty. Problems that arose with the resettled communities were left unresolved for years after the original project sponsor (AESNP) abandoned the project. It took strenuous lobbying on their behalf by our organizations to get the government to respond to some of the problems. Attached herewith is a letter addressing the problems faced by the community resettled in Naminya by the dam developers and GoU.

2.6.3. The existing compensation and resettlement frameworks are out-dated and do not reflect current economic situations. This calls for a review of the existing compensation and resettlement frameworks with a view of updating and making relevant to current economic realities.

2.6.4. People affected by the Bujagali Interconnection Project were never compensated and resettled. It is therefore important that compensation and resettlement of these project-affected people is based on updated compensation and resettlement frameworks that are inline with the current economic situation. There is also need for commitment and strategies (mechanisms) on the part of the project sponsor on how the compensation and resettlement of project-affected communities will be handled.

2.6.5. The lack of a detailed and updated compensation and community development action plan in BEL's SEA is a violation of African Development Bank's policies on involuntary resettlement (2003), good governance (2000) and Environmental and Social Auditing (2000), Industrial Policy guidelines, Stakeholder Consultation and Participation (2001), among others.

2.7.0. Consultation Concerns

While there is evidence of consultations in BEL's SEA, project proponents confuse consultation with true participation in a decision-making process. Consultations with the 240 clans in Busoga and 52 clans of Buganda were not done at all. In addition, the SEA does not indicate how each of the stakeholders' concerns raised during the consultation process are going to be addressed. The failure to address concerns raised and obtain agreements during the consultation process by the dam developer violates African Development Bank's Policies on Stakeholder Consultation and Participation (2001) and Environmental, Social Auditing guidelines (2003), Environmental Policy (2004), among others.

2.8.0. Old and Inconsistent Data

BEL's Social and Environmental Studies (SEA) are based on old data that has little or no bearing to current situation. For example, sections 7.4.1.3 p336, water quality data, climate, air-borne particulate data, among others were done almost ten years ago and do not reflect the current environmental realities e.g. declining lake and river water levels, degradation of wetlands and forests, increased silting, climate change, etc. that have impacts on hydropower production. Fish species that were found to be endemic in the previous AESNP studies were mysteriously not discovered in BEL's SEA (*Annex III*), raising doubt on the fish report in BEL's studies. Was it a deliberate attempt on the part of the consultants to manipulate information? Or is that now the endemic fish species have become extinct?

2.9.0. Fauna (terrestrial & Aquatic)

BEL's EIA studies on animals, birds and aquatic life were carried out for very short periods of 1 to 2 months that do not give the variations in species distribution and diversity that usually occur over a period of one year. The failure to adequately conduct environmental assessments violates the ADB's Policies on Environmental and Social Auditing (2003), Environmental Policy (2004).

We have taken the following actions to try to resolve the above mentioned issues, but in Vain:-

Requested for the tariff evolution of the Bujagali project over the projects life, cumulative impact assessment of having many dams on the same river, evidence of a commitment (agreement) on the Kalagala off-set, an updated mechanisms and commitment on the compensation and resettlement framework, dam safety strategies and disaster preparedness mechanisms for Bujagali and power stations upstream the Nile, a comprehensive assessment of the hydrological and climate change risks, a comprehensive economic, affordability and options assessment of the Bujagali Dam project from World Bank, Uganda government and the developer (BEL). However, what is now available as Social and Environmental Assessment (SEA) for the project, PPA, economic and options analyses do not address our outstanding concerns.

We have sent our outstanding concerns to the World Bank (available at http://www.irn.org/programs/bujagali/index.php?id=061204letter.html).

We, therefore, believe that the failure of the Bujagali dam developer (BEL) to address the outstanding social, economic and environmental concerns we have raised violates African Development Bank's guiding policies, principles and procedures. Any support by the Bank to the Bujagali dam project in its current state is a violation of the Bank's own policies, principles and procedures for supporting development projects. Consequently, such an action of support will materially affected our rights and interests and is likely to jeopardize our future social, cultural, and environmental security. We request the Independent Review Mechanism (IRM) of African Development Bank to recommend to the Bank's Executive Directors that an investigation of these matters be conducted in order to resolve the controversies. As we have always stated there can be no sustainable development without "truth-telling and truth-seeking in development." African Development Bank itself recognizes and accepts that "*sustainable development is a dominant development paradigm for the 21st century, being pro-poor to counter unacceptable impoverishment rates and that development should meet the needs of the present without compromising the needs of the future"*

We look forward to your response.

Signed by:

Signed by:

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ANNEX I.

An Analysis of Power Planning Associates' "Bujagali II – Economic and Financial Evaluation Study – Final Reports"

By Pete Tsournos, Associate Professor, Department of Economics, California State University - Chico

The stated purpose of the study by Power Planning Associates, which was commissioned by the World Bank Group, is to evaluate the economic viability of the proposed Bujagali project in Uganda, while taking into account the economic, financial, social, and environmental aspects. International Rivers Network asked economist Pete Tsournos to analyze the report against a few key questions.

- **Does the report satisfactorily answer the question: "Can Bujagali operate economically during times of low water without more over-releases from Lake Victoria?**
- **What would be the economic implications of following the Agreed Curve (or is this information that not be extrapolated from the report)?**

The PPA report authors state that water already released for the existing Kiira and Nalubaale hydroelectric dams can be used to generate additional electricity downstream at Bujagali. In recent months, water was released above and beyond the "Agreed Curve" (a water-release agreement intended to ensure that the releases through the dams correspond to the natural flow of the river before damming) in order to mitigate a national shortage of electricity and high prices of energy. Coupled with an ongoing drought, the existing dams' water-release regime has led to dramatic reductions in the level of Lake Victoria. Since no additional water releases are necessary for the proposed downstream Bujagali site, more energy can be generated for any given water release. The authors state that Bujagali will generate 1.2 times the power already generated by the Nalubaale–Kiira complex, and that the generation of same total power would require a release of only 45% from the lake as compared to the present situation without Bujagali (p.47).

However, there are shortcomings to the analysis. First the analysis is based on a water release operation rule that does not follow the Agreed Curve. The existing dam operators' permits dictate allowable flows based on this agreement. PPA's recommended operation rule for Lake Victoria adopted for the analysis is instead a "constant release" scenario, which can be summarized as follows: Under the low hydrology scenario, the mean water release target is 687 m^3/s, while the high hydrology target is 1247 m^3/s, rather than the agreed curve of 400 m^3/s when lake levels are low (between 1133.5 and 1135 ft.) and 1850 m^3/s when lake levels high (exceeding 1136.2 ft) (p.51). The recommended operation rule is likely based on water release targets that optimize the operation of the electric turbines while also stabilizing (if not restoring) the water level of Lake Victoria. Appendix B.6.5 of the PPA report states that the recommended operation rule was derived so that the target energy will be supplied with a defined reliability of 95% of the time while the Minimum Operating level of the lake (taken as 1133.5) is only reached 5% of the time.

The entire economic analysis is based upon lake levels as have been observed in the last 100 years, rather than the lower levels that have been recently experienced. The report also assumes that climate change will not make an appreciable change in the Lake's levels for the project's economic lifetime. **These two assumptions, combined with the reliance on the less-dynamic hydrological model known as the "constant release" model as proposed in the PPA report, make it difficult to know whether the Lake will experience future declines due to the operation of the three dams.** The economic implications of following the Agreed Curve are difficult to extrapolate from the report. Generally speaking, if the operation rule of Lake Victoria was restricted to follow the Agreed Curve, then the estimated benefits of the Bujagali are likely overstated, and especially so if climate change has a greater impact on the Nile outflow than the report acknowledges.

The price/value of electricity is greatest when water and electricity are scarce. If the agreed flow 400 m^3/s, rather than the recommended 687 m^3/s, is followed during the low hydrology scenario, less electricity will be generated at a time when the price/value of electricity is relatively high. Under the low-hydrology scenario, the target energy level will not likely be met 95% of the time and the NPV and rate of return of the project under the low-hydrology scenario will be overstated and expected returns are less likely, with the Agreed Curve release of 400 m^3/s vs. the assumed release of 687 m^3/s. Furthermore, the least cost expansion plan may also be affected if less electricity can be produced from Bujagali, under the low-hydrology scenario when only 400 m^3/s of water is released. If target levels of energy cannot be met with Bujagali, other more costly sources may need to be considered, until the proposed Karuma project can be commissioned, no earlier than 2012.

If 687m^3/s, rather than 400m^3/s, is released during the low-hydrology scenario, and the objective is to keep the level of the lake stable, less water must be released during the high-hydrology scenario. The proposed water releases of only 1133.2 m^3/s, rather than agreed releases of 1850 m^3/s, during the high-hydrology scenario, will likely have little impact on the estimated benefits of Bujagali. When water is relatively abundant, the price/value of electricity is lower and the capacity of Bujagali is reached at 1247 m^3/s. any additional water released beyond 1247 m^3/s will only increase generation in Nalubaale–Kiira, not Bujagali.

The authors themselves state that the disadvantage of following the Agreed Curve is that variable water releases and thus variable energy output from all hydroelectric generators on the Victoria Nile does not allow for stable scheduling of generation to meet the total demand of the power system and to export energy to neighboring countries. Beyond this statement, the authors do not offer any formal analysis of the economic implications of following the Agreed Curve.

II. Impacts of Climate Change

The report states that climate change is not found to be significant enough in the medium term (to 2030), to influence hydrological scenarios for this dam. This assumption is driven by two factors: the literature on climate change cited, and the 10% social discount rate, utilized by the World Bank and the authors of the report.

The assessment of the impact of climate change on Lake Victoria water levels seems to be based on limited studies, particularly a single study by Tate, Sutcliffe, *et al*. Tate, Sutcliffe, et al, consider two 30-year baseline periods, 2021-2050 and 2070-2099. For the 2021-2050 periods, the authors predict slightly smaller than historically observed outflows, while predicting slightly higher than present outflows for the 2070-2099 period. Thus, the authors believe it is acceptable to use historical evidence from 1900-2005 as a basis to predict and model future hydrological conditions (page 33 appendix). However, in summarizing the literature on the climate change in the Nile basin and predicted changes in Nile flow, Paris, Yamana, and Young state that nearly all studies predict temperatures will increase, but precipitation predictions are uncertain. Paris *et al*. further state that the literature review confirms that there is a great deal of uncertainty in predicting future Nile flows (including the White Nile), and thus it is important to consider different scenarios of climate change and water flows when assessing the performance of proposed dams on the Nile. **While the authors of the Bujagali assessment consider both high- and low-flow scenarios within the study, both scenarios are based on past historical evidence rather than the various predicted future scenarios of water flows altered by climate change.**

However, as long as the World Bank mandates the utilization of a 10% social discount rate, the intermediate and long-term effects of climate change will have only a moderate impact on the analysis. On page 35 of the appendix, the authors state: "In the process of present-worth calculation of all costs and benefits of various expansion strategies, based on a social discount rate of 10%, the present worth of elements of the calculation beyond 15 to 20 years after commissioning each new project is quite low. As a consequence, one should identify hydrological scenarios that form the most representative periods of 15 to 20 years from the known historical series of net inflows into the lake."

The World Bank utilizes a social discount rate of 10%. The discount chosen has a great impact when evaluating long-term issues such as the impacts of global warming. Suppose global warming leads to $100 million in climate related damages 50 years from now, a discount rate of 10% implies that we should only spend roughly $850,000 to avoid such damages. In other words, $100 million, 50 years from now, discounted by 10% is worth roughly $850,000 today. On the other hand, the NPV of $100 million, 50 years from now, is $8 million and $61 million when utilizing a social discount rate of 5% and 1%, respectively. **By utilizing a social discount rate of 10% the World Bank favors projects that produce short-term benefits and long-term costs.** Even a modest discount rate will favor small benefits conferred today over much larger benefits conferred in the distant future. Many economists have argued that when evaluating the intergenerational consequences of climate change, a high discount rate unfairly places a smaller weight or value on the well being of future generations relative to the well-being of current generations. For example, the Stern Review on the Economics of Climate Change utilizes a discount rate of 0.1% when assessing the impacts of global warming. Even Nordhaus, who disagrees with the utilization of 0.1%, in his critique of the Stern Report, utilizes an initial social discount rate of 3% that slowly decreases to 1% over a 300-year period when evaluating the impacts of global warming. As long as the World Bank utilizes a social discount rate of 10%, it is unlikely that the various predicted future scenarios of water flows altered by climate change, 30 or more years down the road, will have much impact on the economic analysis of the Bujagali project.

III. Social and Environmental Cost

While the authors of the PPA study contend that the constant release scenario may stabilize lake levels and is beneficial in terms of energy generation and planning, there may be environmental impacts created when water releases no longer mimic "natural flows". The more stable water flow can potentially lead to an increase in sedimentation, a change in water temperature, a change in vegetation and geomorphology that could affect fisheries and ecosystem functions. The constant water flow could also affect livelihoods, such as tourism and whitewater recreation opportunities, riverside farming, and the ability to produce electricity downstream. **The authors only highlight the benefits and not the costs associated with the change in water flows.** The authors do acknowledge the potential effects of changing water flows by stating that the exact criteria in shifting from low releases to high releases should depend on factors such as the minimum requirements on the lake level expressed by riparian stakeholders of the lake, requirements expressed by populations living near or downstream of Lake Victoria, power demand of the Uganda power system, power export opportunities and other means of power generation available. However, no attempt is made to estimate cumulative social and environmental costs of the proposed changes in water releases. Furthermore, when considering the incremental social cost and environmental costs of Bujagali, impacts are accounted for in a manner that is biased toward hydroelectric generation.

The incremental environmental/social costs or damages from the Bujagali project are never monetized. By doing so, one is placing a zero dollar value to the environmental damages and social costs, by default. Only the mitigation program costs (actual expenditures) can be included as an environmental cost of the Bujagali project, which may or may not be enough to compensate for the environmental and social damage that will actually take place. On the other hand, the authors do monetize the environmental benefit of the avoided CO_2 from the Bujagali project. The report should include the monetized environmental costs of building a dam and altering water flows. The same rigorous, quantitative analysis techniques employed in the Stern Report can be applied to the Bujagali project, so that the fullmonetized social and environmental cost of the project can be determined. By only including the benefits and not the full social and environmental costs, the authors will underestimate the incremental impact of the Bujagali project.

- **Does the report clearly justify its assumptions that Bujagali will lower the cost of electricity in Uganda? What are the real-life implications of Bujagali on tariffs and affordability of electricity?**

The macroeconomic benefits of the Bujagali project are moderate at best and could not be determined in a rigorous or systematic manner, within the report. The macro-economic analysis considers two cases (1) the least-cost expansion plan with Bujagali and Karuma and (2) the least cost expansion plan without Bujagali and with Karuma commissioned as soon as possible, in 2012. The consultants have assumed the base demand forecast, base fuel and capital cost and the low-hydrology scenario when considering each of the two cases.

The main differences in the two cases are: thermal energy is displaced earlier, two investments take place instead of one, and tariffs will be lower, in the "with Bujagali" case relative to the "without Bujagali" case. The direct impact on households is expected

to be small, since most households are not connected to grid, but for those who are connected, tariffs are expected to be 5% lower "with Bujagali" relative to the case "without Bujagali". Even if cost savings to producers are passed onto consumers, households can expect very little impact on the price of goods and services, since the price reduction in electricity to producers is small. Furthermore, the cost reduction in electricity production is unlikely to be great enough to be a factor in attracting new investment to Uganda, under either scenario.

The main advantage of the Bujagali project is that relatively costly thermal generated electricity is displaced. The Bujagali project has a higher NPV and likely a stronger macroeconomic effect, with the low hydrology scenario, relative to the high hydrology scenario. Under the high hydrology scenario, more electricity can be generated from the existing Nalubaale–Kiira operation, and thus displace more thermal generated electricity, relative to the low hydrology scenario. As the authors note, the energy capability of Bujagali is used up more quickly and displaces more thermal at an earlier date under the low hydrology scenario, relative to the high hydrology scenario. Under the high hydrology scenario, which is not considered, less thermal is displaced by Bujagali and at a later date, and, thus, will have a smaller impact on the cost of electricity production, tariffs and macro-economy. The work of the authors seems to indicate that under the high hydrology scenario, either Bujagali or Karuma could be avoided altogether. The benefits to the macro-economy will be dampened if only one investment takes place rather than two.

The macro-economic analysis is also based upon the low hydrology scenario mean water release target should of 687 m^3/s, rather than the Agreed Curve of 400 m^3/s. If target levels of energy cannot be met with Bujagali when the Agreed Curve is adhered to, other more costly sources of electricity must be considered, until the proposed Karuma project can be commissioned. Thus, the reduction in tariffs and macroeconomic impact will be smaller than the moderate impacts that have been estimated for the project.

IV. Conclusion

Had the authors based their analysis on the Agreed Curve, the expected benefits and value of the project would be lower than they are under the constant-release scenario as reported in the study. By operating Lake Victoria more like a reservoir, the expected benefits of Bujagali are likely greater than what could be expected under the more natural flows of the Agreed Curve. Despite basing the analysis on assumptions that will yield higher expected benefits, the effect of the proposed Bujagali project on the economy of Uganda is still moderate at best. Social and environmental impacts are poorly addressed throughout the analysis. When considering the incremental social costs of the project, the social benefits of hydroelectricity are included while the social costs are not systematically estimated and largely ignored, thus potentially creating a bias towards hydroelectricity in estimating the least-cost expansion plan. The report also fails to consider the economic, social and, environmental impact of the proposed changes to water releases, even though the report seems to acknowledge that various stakeholders will be impacted by changes to lake levels and downstream water flows. Finally, nearly all climate change studies predict changes in temperature and precipitation, in the Nile River Basin yet this extensive literature is ignored. Instead of addressing the potential effects of climate change, the entire analysis is based on historical data. It remains unclear

whether the proposed constant water release plan will indeed restore and stabilize Lake Victoria water levels, under the various climate change scenarios

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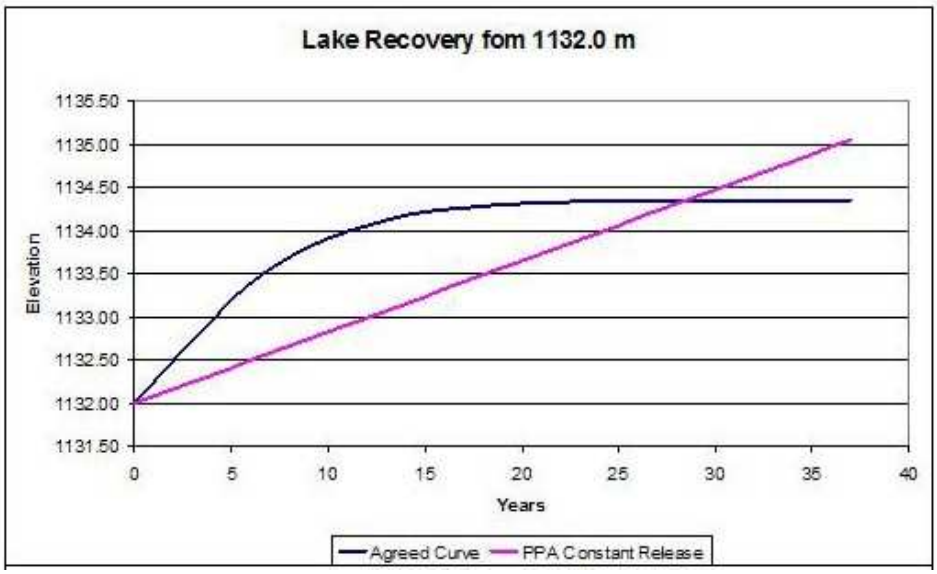
ANNEX II

Analysis of Lake Victoria and The Proposed Hydrological Curve Change

By Daniel Kull, Independent Hydrologist

New Release Regime for Bujagali Dam Would Slow Recovery of Lake

A new hydrological release plan (known as the "Constant Release" curve) has been proposed by Power Planning Associates for the Bujagali Dam project. This raises the question: "How will the new curve affect the recovery of Lake Victoria, which has already been badly harmed by excessive releases from two existing dams?" International Rivers Network asked hydrologist Daniel Kull to look at this question. Here is his reply.



The graph above shows that the Agreed Curve allows the lake level to recover more quickly than with the PPA proposed outflow regime. The graph looks at how Lake Victoria would recover from a baseline level of 1132.0 m (a low level that was experienced late last year) during 35 years of constant average inflow (average net basin supply "NBS" 1900-2005 computed in the PPA report). As the graph shows, the Agreed Curve releases would restore the lake to a relatively "normal" level within about six years, while the Constant Release flow will not reach that level for close to 18 years. The Agreed Curve response is more representative of a naturally functioning lake, as opposed to the PPA regime, which resembles the filling of a reservoir.

Daniel Kull is the author of Connections Between Recent Water Level Drops in Lake Victoria, Dam Operations and Drought *(February 2006), which can be downloaded from http://tinyurl.com/2mpjzm*

The lake's level as of January 2007 was reported to be 1,132.34 metres above sea level, according to the Tanzania *Daily News* (http://www.dailynews-tsn.com/page.php?id=5214). From the late 1800s to about 1960, lake levels averaged between 1133.86 and 1134.86.

ANNEX III

Concerns about the Impacts of the Bujagali Dam Project on Endangered Fishes and Fisheries in the Victoria Nile

By Les Kaufman*

A report on sampling for this project (Nov. 2001 Haplochromine Habitat Study for Bujagali Hydropower Project) has identified, on river sections above and below the proposed dam site, the occurrence of species listed as extinct, critically endangered, or endangered. It also listed species never before recorded in Uganda. The discovery of range extensions of recently described taxa, and the recovery of vulnerable, threatened, and endangered taxa from the Victoria Nile should not be interpreted to mean that these fishes are more secure in the wild than previously thought. Rather, it is an indication that the Victoria Nile offers a refugium for these taxa that should be carefully safeguarded as insurance against extinction.

With regard to all haplochromine species, there is an inadequate database from which to draw precisely the kinds of conclusions that the Bujagali report aspires to reach. The scientific community has long appreciated the need for a thorough survey with particular focus on the haplochromine cichlids, and has pushed for it for many years, but to date there is very sparse sampling effort (the Bujagali study notwithstanding) in the Lake Victoria Region.

Another important consideration is that haplochromine taxonomy is currently sufficiently in flux that the scientist responsible for every identification should be listed along with other scientists consulted in making this determination. Furthermore, voucher specimens should be in a proper museum archival system, referred to by specimen and lot number and should be available for taxonomic confirmation on request. In addition, voucher photographs should be made available on the Internet and DNA material archived for species confirmation, a procedure that can in theory be carried out at Makerere University (qualified Ugandan scientists exist; funding is absent).

The most appropriate interpretation of the Bujagali results to date is that the Victoria Nile is an important refugium for certain endangered haplochromine cichlid species, and activities that might negatively impact these populations should be avoided.

While the data presented in the Nov. 2001 Haplochromine Habitat Study is the product of a well designed and implemented study that effort alone is inadequate to rule out a likelihood of negative impacts to the survival of endangered species caused by dam construction. The discovery of other populations of threatened or endangered haplochromines downstream and/or upstream of the proposed dam site is welcome information, but does not by itself assure that the remaining populations are secure or that the meta-population impacts of losing the Bujagali sub-populations will be negligible. Furthermore, no comprehensive dataset exists to provide a baseline for the biological diversity of the surrounding Nile and Lake Victoria systems. Thus, while the IUCN Red List provides the best available information, a comprehensive baseline study and continued monitoring are required to adequately assess and document the effects on aquatic wildlife and food fishes of the proposed Bujagali dam. Indeed, a solid commitment of the resources necessary to generate a sufficient database and analytical basis for rigorous conservation decision-making would itself constitute an immense positive step for the region. It is even possible that this work alone could ultimately do more good for environmental sustainability in the Nile basin than any harm brought upon the

ecosystem by a thoughtfully and responsibly executed Bujagali dam. Local and international scientists advised that a thorough biodiversity study be conducted of the Victoria Nile and adjacent waters in Lake Victoria and Lake Kyoga, with emphasis on haplochromines, as a key part of the Bujagali EIA. A groundbreaking region-wide biodiversity survey was one of the major components of LVEMP as originally conceived. For whatever reason, neither has come to pass, leaving us in our current predicament.

While the potential impacts to species diversity and ecosystem services from the proposed dam are extremely high, we recognize the intense need for affordable electricity that avoids greenhouse gas emissions. If significant additional measures were taken to better monitor, design the proposed dam, and mitigate its impacts, the result could be a positive dam development project rather than an ecological tragedy. Proper monitoring requires a comprehensive study to establish baseline conditions and monitor changes during and after project construction. Additional design measures should be considered, their efficacy assessed, and a best practice put in place. These should include more serious consideration of the idea of a fish ladder or other provisions for conservation of *Anadromous* fishes (including *Barbus altianalis* and the endangered *Labeo victorianus*), the gazetting and proper enforcement of aquatic reserves for known critical habitats of endangered haplochromines and other wildlife, afforestation (using native vegetation) of the steep and erosion-prone banks and islands, and possibly even restoration programs for endangered species such as the mbiru, *Oreochromis variabilis*, which may still be present at low density. Rather than being limited to the immediate vicinity of Bujagali, these mitigative and restorative measures should be carried out as part of a comprehensive plan for sustainability from end to end along the short but ecologically, economically, and culturally important stretch of river that is the Victoria Nile.

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NAMINYA RESETTLEMENT AREAS
WAKISI SUB-COUNTY
MUKONO DISTRICT

18 February 2007

To: The Director
Bujagali Energy Limited (BEL)
Jinja, Uganda

Dear Sir,

RE: <u>Unfulfilled promises by Bujagali dam project and Problems we are facing at the Naminya Resettlement area.</u>

We the people who were displaced by the proposed Bujagali dam and resettled in Naminya Resettlement area are writing to you to express the problems we are facing in this area since we were resettled.

Before we were resettled, we were promised many things, but up to now, it is five years, many of those things have never been fulfilled or provided

The following are the problems:

1. Land titles

We were promised that all the resettled people would be given plots of land with land titles. Few people have so far received land titles for their plots after long waiting and protests to government. Many of us are not sure whether or not we shall be able to get land titles for our plots of land. This has caused uncertainty to whether the land we have belongs to us or another person holding the land title, who can easily evict us. We have heard rumours that the land we have belongs to Madhvani

2. School

We were promised a Primary School for our children, but today, our families are increasing and the children do not have any primary school to go to. We have improvised by using one of the vacant houses in the resettlement area as a nursery and primary 1 to 4 classes. But, we are continuously warned to vacate the premises and take our children elsewhere. Where shall we take our children for

schooling? The nearby school is a missionary and private school and the owners have refused our children to go to attend in that school.

3. Health centre

We were promised a Health Centre III with maternity ward, laboratory, minor theatre, inpatient wards, but today what we have is a model house with two health personnel which operates 5 days a week and only 3 hours a day. To get this facility was a very long struggle with the help of some NGOs that linked us to Mukono District Local Government. The question is, "When shall we ever get the type of health facility that was promised"?

4. Water

We were promised water tanks for harvesting rain water on every house, but after using those tanks for less than one year, they started licking and now majority of them are not functioning. The available 3 functional plastics water tanks were provided by an NGO.

There is only one borehole in the community that can not serve the whole community. Even then, it is not centrally located and not easily accessible by the majority of the resettled people.

5. Housing

The houses that we were provided with are sub-standard and incomplete. By the time, people were resettled, the houses did not have kitchens, were not plastered and lacked ceilings. The houses are too small to cater for our families, especially those of us with two wives and many children. To make the maters worse, the houses are now cracked and we fear that they will fall on us.

6. Latrines

The latrines that were provided were too small in size and shallow (less than 8 ft deep) and whenever it rains, they are filled with water that floods which could pose danger to our health.

7. Electricity

We were promised electricity, but up to now, we have never been given electricity. Moreover, during the resettlement, some settlers were given plots in the way-leave of the high voltage transmission lines, that evacuates electricity from Jinja to Kampala. Later on, these people are being told that they can not use these plots and yet they are not given alternative plots.

8. Sources of income and food

Where we originally were, we carried out fishing and farming as sources of income, but the plots we were given in the resettlement area are not enough for farming. Moreover, we no longer have access to the river to do fishing, because the river has been fenced-off by the dam developers. This has negatively affected our sources of income and food. The fish ponds that were promised to us have never been put in place.

9. Resettlement disturbance package

We were promised a resettlement disturbance package for a period of fiver years, but up to now, we have never received anything.

10. Community centre

We were promised a community centre, but up to now, it has never been put in place

11. Market

We were promised a market nearby, but up to now the market has never been constructed.

12. Environment protection

We were promised tree seedlings to plant in our compounds and the resettlement area, but up to now we have never received any seedlings, yet the resettlement is on a slope and is bear without trees.

13. Employment

We were promised jobs once construction of Bujagali dam starts. But we need written assurance that we shall get those jobs when construction of the dam starts, particularly we want to know how many of our people will be employed.

14. Routine maintenance of access roads and other infrastructure

We were promised routine maintenance of our access roads, but up to now, maintenance has never been done

15. Visitations and consultations by World Bank, Government and the dam developer

Government and the dam developers. Why is it that whenever World Bank, Government and the Bujagali dam developers visit us, they just pass through without talking to us. They just discuss among themselves and leave. Even when they want to discuss with us, they do not give us ample time for us to prepare ourselves. Does being in a resettlement are, remove our respect of being citizens of this country?

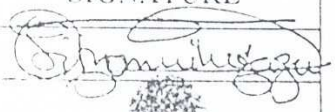
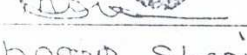
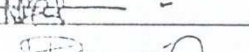
We look forward for your answers to our problems.

Signed by the resettlers of Naminya Resettlement area.

We attach the signatures of the resettlers.

c.c. Hon. Minister of Energy and Mineral Development
c.c. Hon. Minister of Lands
c.c. Hon. Minister of Local Government
c.c. Hon. M.P. Buikwe
c.c. Hon. M.P. Women
c.c. NAPE
c.c. I.G.G.
c.c. R.D.C. Mukono
c.c. Chairman L.C.5 Mukono
c.c. Chairman L.C.III Wakisi
c.c. Chairman L.C.II Naminya
c.c. Chairman L.C.I Namilyango
c.c. World Bank

NAME	SIGNATURE
Mukisa yeweri	
Kuzza Lawrence	
Onzego Lukaire.	
Gambe Lusi	Gambe
Lukowe Nakisita	
Obungei Mathias	
Kauma Lakiya	
Otabongo Steven	
Nakamiya Teodora	
Ngobi vicent	
KAWUKA PETER	PETER
Kawuka ASTET	
Kezaya Amoiti	
Mukaidulye .B.	
Namagaya Jane	
Sunday amudu	
NASANDE SULINYANA	
NAIMODE MUIMUNA	
OYITE KIZLOLI	Oyite K
Nyombi Francis	
Akiyomo .F.	
Nabwire Christin	
Mugebune Jemasi	mugebune
Nyombi florence	
Amola Jane	
Kakayi Lona	
Mugema Robert	
Bazila Lsiza	
Weddundwe Sam	

NAME	SIGNATURE
Mwiluggazu Sityo Samuel	
Bulage Margret	
Bogere David	
Bogere SHERIFER	bogere Sheriter
NAFUUNA GRACE	
WANYAMA ALEX