



中国水利电力对外有限公司
CHINA INTERNATIONAL WATER & ELECTRIC CORP.



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THE EXPORT-IMPORT BANK OF CHINA

SUCCESSFUL COMPLETION OF ISIMBA HYDROPOWER PROJECT

The 183 MW Isimba Hydropower Plant and its associated Isimba-Bujagali Interconnection Project is now complete. Thus, the plant is already adding electricity on the grid. It is located along the White Nile River, 50km downstream of the outflow of Lake Victoria the World's second largest freshwater body.

Its construction was a response to the country's vision to increase its electricity-installed capacity in order to combat the severe power shortages plus forming the factor in industrializing the economy. This will accelerate the growth of the local economy and improve the social life of the nation. The Isimba contracted was to the China International Water and Electric Corporation (CWE) as an Engineering, Procurement and Construction (EPC) Contract by Government of Uganda (GoU) represented by Ministry of Energy and Mineral Development (MEMD). Accordingly, the EPC Contractor-CWE signed a forty-seven (47) months ending March 31 2019.

Overview on the Isimba (183 MW HPP)

The Isimba hydropower plant is a low-head run-of-the-river type, equipped with four Kaplan axial flow turbine generators, each with an output of 45.8 MW. Crossing the Koova Island towards both banks, the dam is 1599 m long, in crest length. From left bank to right bank, the main structures are left clay-core rockfill dam section: No.1 concrete gravity dam section, powerhouse dam section, the bottom outlet spillway with three outlets, the surface outlet spillway with two outlets. No.2 concrete gravity dam section, right clay-core rockfill dam section, the associated hydromechanical and electromechanical equipment. The Isimba Substation, the enhancement of the Bujagali Substation and a 42 km long 132 kV transmission line from Isimba HPP to Bujagali Substation. The above works commenced on April 30, 2015 and are presently, completed. Thus, all the four units have been successfully commissioned.

About China International Water & Electric Corporation

China International Water & Electric Corporation - the Isimba HPP EPC is one of the 24 wholly-owned subsidiaries of China Three Gorges Corporation (CTG) and boasts with immense experience in hydropower infrastructure developments plus Operation and maintenance. Currently, CTG is handling construction projects in more than 40 countries in Europe, Asia and Africa. CWE is steady to promote its recognition as an international clean energy construction and investment company. It focusses on encouraging localization, promotion of the economic development of project-host countries, benefitting local people, and creating a harmonious and eco-friendly world with projects of outstanding quality.

Environmental Protection & Wildlife Conservation

During construction of the Isimba HPP, CWE strictly followed Uganda's environment policy requirements anchored in the Environmental Impact Assessment (EIA) and Environmental Management Plan (ESMP). This informed the establishment of an effectively functioning environmental management system that covers the subjects of environmental impact assessment, environmental management plan, waste management, noise management, water quality management, soil erosion and restoration, environmental monitoring, biodiversity management.

The detailed measures undertaken under the environment management system comprise the following:

- 1) Building a waste holding facility: Sorting the waste at source according to the nature of material, such as per paper, plastic, construction waste, kitchen waste and ensuring delivery to the holding facility by a garbage truck on a daily basis. Thereafter delivered to the designated landfill area by the licensed waste transporter on a weekly basis.
- 2) Noise management: The EPCC often times has been installing a silencer at the source of noise generation. Furthermore, for the staff, visitors & other stakeholders accessing the site, distribution of earplugs/earmuffs was mandatory. In addition, for the designated personnel, occupational health & safety training on noise level monitoring was our priority.
- 3) Water management and quality: CWE set up a sewage treatment system for all the domestic effluent; set up sedimentation ponds system for all the industrial effluent. This not excluding regular water sampling and quality analysis in tandem with the national standards.

Isimba HPP is an important achievement in the China-Uganda economic and trade cooperation. During its construction, the Isimba HPP also makes a great contribution to Uganda development mainly in sectors including:

1. Local Economy Enhancement through

- a) Improvement of National Power Supply: according to estimates, 1131 MW will be required totally to meet the national electricity demand in the year 2020. Current installed capacity stands at 951 MW with 180 MW difference up to the required capacity without other main power supply available before Isimba HPP commissioning. Isimba HPP will contribute 183 MW making up 60% electricity shortage with the production of 1039 GWh per year. The completion of the Isimba HPP is a great milestone for it will close the above-targeted electricity installed capacity hardly a year to the schedule.
- b) Goods have been purchased from the local market and subcontracts signed with local companies.



Aerial view of ISIMBA HPP (from upstream)

These include cement, diesel/petrol/lubricants, explosives, steel and steel product, vehicles, customs clearance and transportation, MTN communication systems, construction equipment renting, workforce and food supply.

- c) The Isimba HPP has created more than 3000 jobs in various categories of technical disciplines, ranging from engaging ordinary labour to high skilled workforce i.e (qualified technicians and engineers). The Project has actually produced an active environment by engaging the local residents of the area and from the surrounding locations of Uganda. These have been able to earn their living from the aforementioned activities. Recognizing the future technical requirements and capacity building of the country, the Isimba HPP has also availed the local fresh graduates from the technical universities of Uganda with practical training on construction, installation, maintenance, supervision and operation of such a mega project. The figure for local workers goes to around 2500 receiving training on site including welders, artisans, drivers and operators.

2. Contribution to Local Community

From the beginning of the Isimba HPP, the EPC Contractor has recognized the importance of giving back to the communities.

Thus, the following social contributions have been proposed and accomplished for the uplift of the local community:

- a) Donated mosquito nets, footballs and other sports kits to the residents of Kayunga & Kamuli districts from the time the project commenced in July 2013.
- b) Constructed special water fetching path and platform for the villagers in September 2014.
- c) Constructed special business area in workers' canteen to support the local women to operate business and provide with free tables and stoves in November 2014.
- d) Donated stationery, such as notebooks, school bags, pencil boxes, to the pupils in Nurary School to promote the development of local education in November 2014.
- e) Sponsored the Proland club to participate in the annual football games in Kayunga district in June 2014.
- f) Widened and repaired the road access to the bank of Nile River from Kiterede village for about 1000 people in June 2015.
- g) Repaired the road access to Nampanyi village, more than 1500 people benefited from the repaired road in June 2015.
- h) Provide free medical services to the villagers in Kayunga district and donated medicines, about 600 people benefited from the activity in March 2015.
- i) Provide free medical services to the villagers in Kamuli district and donated medicines of about 700 people benefited from the activity in November 2015.
- j) Donated the agricultural machinery and living goods to Kamuli district in February 2015.
- k) Donated the agricultural machinery and living goods to Kayunga district in December 2015.
- l) Sponsored the Busaana Health Center to carry out community outreach program of 3 days, more than 1000 people benefited from the activity in December 2016.
- m) Donated 20 Tonnes cements to the Busaana subcounty government to repair the poor schools to promote the development of local education in December 2016.
- n) Improved infrastructure for NAKAKANDWA RC Primary School, where more than 900 existing students benefited in March 2017.
- o) Improved infrastructure for Mbulamuti Primary school in Kamuli District in May 2018.

Further to the above-mentioned benefits of socio-economic development, the Project has the distinction to connect the Kamuli and Kayunga Districts through providing a Public Bridge to be constructed downstream of the Power Station on the Nile River. This shall serve to resolve the long-awaited need of the people on the two opposite banks of River Nile. Realization of this component of the Project will symbolize the development of infrastructure within Uganda for the current and future needs of fast communication for the users.

Noteworthy, this accomplishment on the agreed schedule is attributed to the collective inputs and commitments of the team members from the Employer, the Engineer and the EPC Contractor. All the aforementioned exerted their full energies, worked to the best of their capabilities and know-how. Their cooperation for the desired goal that will remarkably boost the economy of Uganda and will bring a certain change in the social development of the Ugandan Nation.

Today, 21 March 2019 is an incredible milestone to all the implementing stakeholders as the EPC Contractor (CWE) is in a position of handing-over the Isimba Hydropower Project to the Ministry of Energy and Mineral Development and Uganda Electricity Generation Company Limited and Uganda Electricity Transmission Company Limited.

The plant can now ably supply 183 MW to the national grid, yielding high returns in the shape of power supply in the range of 1.039 billion kWh a year for Uganda. This significantly alleviating the power urgency for local industries, service sectors, daily life, and thus promoting the socio-economic development of the country.

The completion of the Project may be marked as not only a valuable achievement in the field of technology transfer and addressing power shortages for domestic consumption and powering industries, this will serve in improving the living standard of the common locals. As per the plan hatched by the Government of Uganda, the power generated from Isimba HPP shall also contribute to a reduction in power tariff for the local consumers.

The Isimba Hydropower Project is also considered as having aided in strengthening the social relations between the Chinese and the Ugandan nations in further understanding each other's societies, culture and behaviour. This has created a sound base for establishing strong interactions in future to benefit from each other's experiences. Wishing a long-term friendship between the two nations for the prosperity of humanity.



Aerial view of ISIMBA HPP (from downstream)