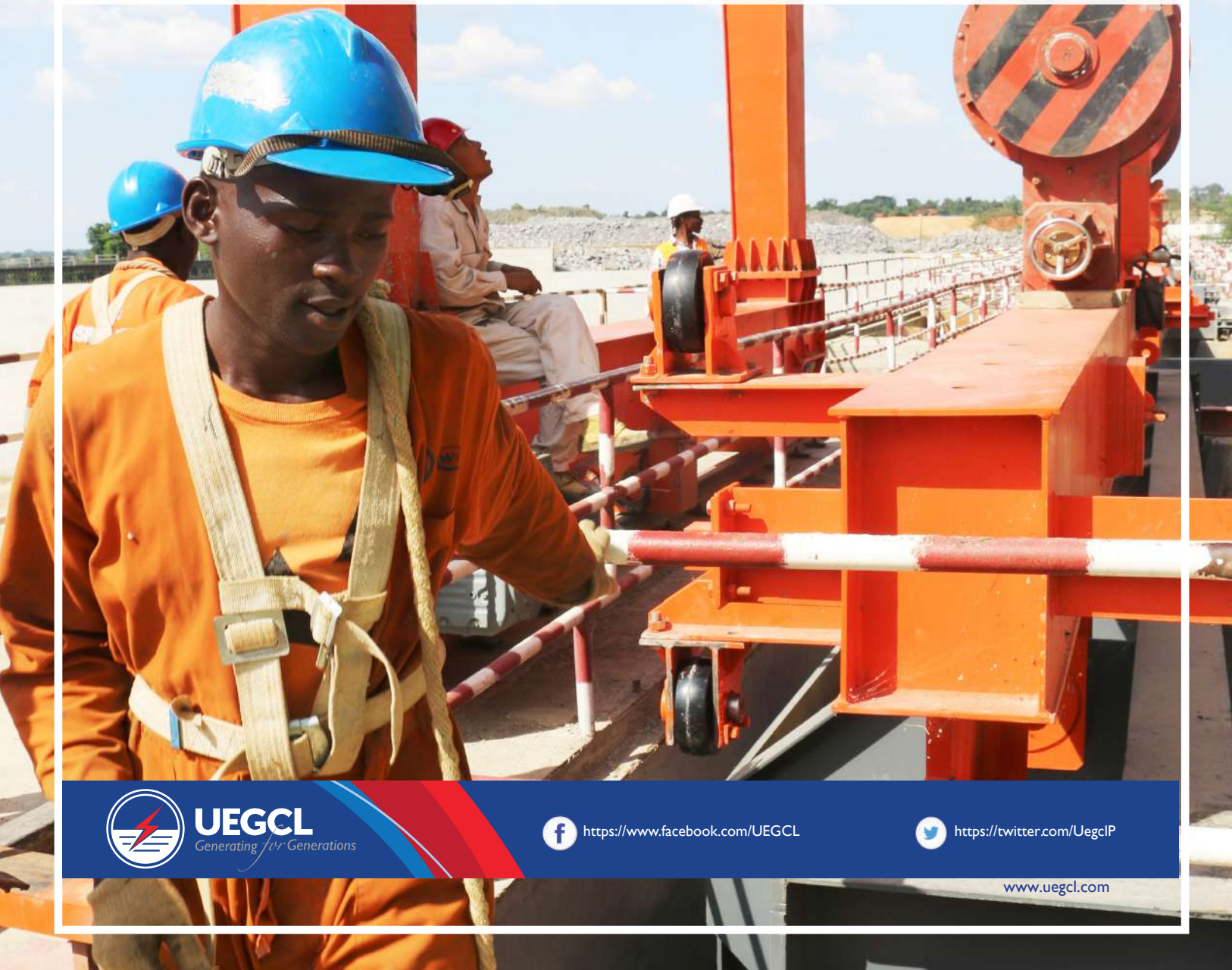
GENEWS

THE OFFICIAL NEWSLETTER OF UEGCL

Issue 2 2017



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A photo showing the upper and the lower spillways at Isimba 183(MW) HPP

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An aerial photo of Isimba 183 (MW) HPP after the second river diversion recently.

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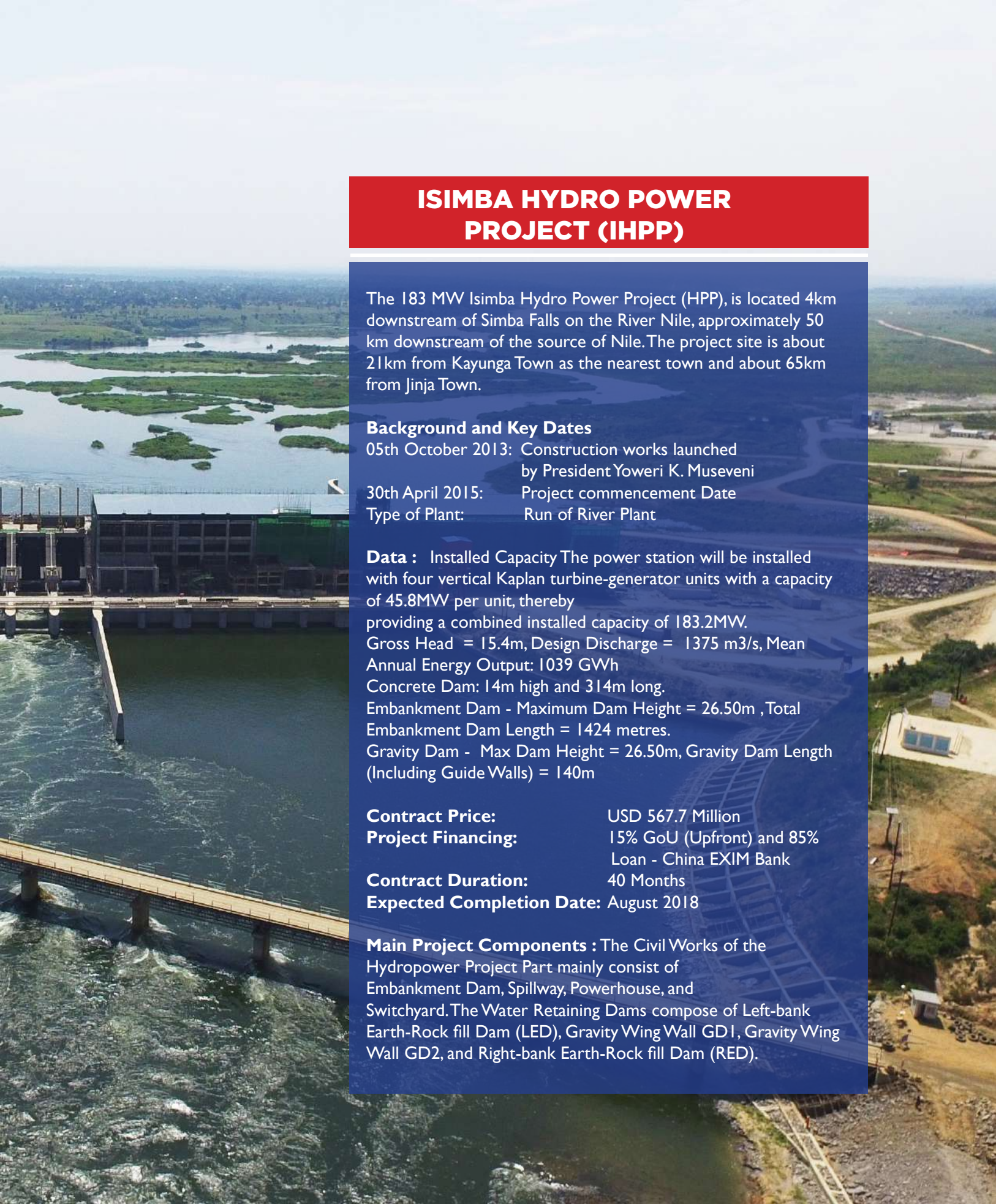

ISIMBA HYDRO POWER PROJECT (IHPP)

The 183 MW Isimba Hydro Power Project (HPP), is located 4km downstream of Simba Falls on the River Nile, approximately 50 km downstream of the source of Nile. The project site is about 21km from Kayunga Town as the nearest town and about 65km from Jinja Town.

Background and Key Dates

05th October 2013: Construction works launched by President Yoweri K. Museveni
30th April 2015: Project commencement Date
Type of Plant: Run of River Plant

Data : Installed Capacity The power station will be installed with four vertical Kaplan turbine-generator units with a capacity of 45.8MW per unit, thereby providing a combined installed capacity of 183.2MW.
Gross Head = 15.4m, Design Discharge = 1375 m3/s, Mean Annual Energy Output: 1039 GWh
Concrete Dam: 14m high and 314m long.
Embankment Dam - Maximum Dam Height = 26.50m , Total Embankment Dam Length = 1424 metres.
Gravity Dam - Max Dam Height = 26.50m, Gravity Dam Length (Including Guide Walls) = 140m

Contract Price: USD 567.7 Million
Project Financing: 15% GoU (Upfront) and 85% Loan - China EXIM Bank
Contract Duration: 40 Months
Expected Completion Date: August 2018

Main Project Components : The Civil Works of the Hydropower Project Part mainly consist of Embankment Dam, Spillway, Powerhouse, and Switchyard. The Water Retaining Dams compose of Left-bank Earth-Rock fill Dam (LED), Gravity Wing Wall GD1, Gravity Wing Wall GD2, and Right-bank Earth-Rock fill Dam (RED).

KARUMA HYDRO POWER PROJECT (KHPP)

The 600 MW Karuma HPP is located on the Nile River in Kiryandongo District in mid-northern Uganda, 110km downstream of Lake Kyoga, and 270km from Kampala the Capital of Uganda.

Background and Key Dates
12th August 2013: Construction works launched by President Yoweri K. Museveni

Type of Plant: Run of River Plant

Data : Installed Capacity: 600MW, Gross head: 70m, Design discharge: 1128m3/s, Mean Annual Energy Output: 4.373 billion kWh, Concrete Dam: 14m high and 314m long, Water conductor system: 6 x 7.7m diameter Tunnels approximately 238m long, 6x Tailrace Branch Tunnels (TBT), Surge Chamber and 2x Trailrace Tunnels (TRT) with finished diameter of 12.9m and lengths of 8,609m and 8,707m respectively.

Contract Price: USD 1.7 Billion (Karuma HPP – USD 1,398,516,759 and Karuma Interconnection – USD 289,905,220)

Project Financing: 15% GoU and 85% Loan - EXIM Bank of China

Contract Duration: 60 Months

Expected Completion Date: December 2018

Main Project Components : Dam, Power Intake, Power House, Transformer Cavern, Surge Chamber, Pressure Shafts, Cable Shaft and Tailrace Tunnels

A photo showing the downstream intake section under construction at Karuma 600 (MW) HPP

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From the CEO

Eng. Dr Harrison E MUTIKANGA

In the last edition of this bi-annual publication GENEWS, we read about the tremendous steps we were taking in delivering our Vision and Mission. "To be the leading power producer in the Great Lakes Region" and "To sustainably generate reliable and affordable electricity for socio-economic development," are our Vision and Mission respectively.

The outing of this, our second edition of this magazine, could never have been more significant. It coincides with the launch of our new Strategic Plan for the period 2018-2023. The new Strategic Plan that we launch this month, alongside this edition of GeNews enumerates our well thought out strategic aspirations and how we shall achieve them. Our Strategic Outlook is more concise with a clearer path to achieving our various goals and objectives. I invite you to take keen interest in this, our solemn promise to you, in whatever stakeholder capacity you are, and how we shall deliver this UEGCL promise to you.

In the last six months, a lot of water has literally gone under the bridge. We did register a successful second stage river diversion at Isimba (183MW) hydro power project, channeling the water back to its natural path after construction of the powerhouse. Today, the river flows through the spillway gates allowing works on the Left and right embankment dams to flourish. Progress at Isimba is worth noting, after all, it is expected to be commissioned no later than August of next year, 2018. With over 85% in physical progress, we crown the year having 'sunk' the first turbine unit at Isimba into position – a major milestone in the development of the project. This successful achievement and many more at Isimba is despite earlier turbulence from change of Owner's Engineer. The details of the progress at Isimba from the physical dam structure to the electro-mechanical and hydromechanical works; from the social Corporate Responsibility (CSR) initiatives to Community Development Action Plan (CDAP); from creating opportunities to the details of local content etc are enumerated in some articles herein.

The Karuma (600MW) project is not far from the Isimba progress. We are past the 80% physical progress mark with just twelve months to go. By even the most conservative, progress is impressive. Beyond the milestones in the generation facility, we have registered some commendable milestones at Karuma, for example, construction of the permanent employer's camp was commissioned in the last quarter of the year, while works on the Military hospital which is part of the CSR initiatives for the project, at Masindi is expected this month. Same applies for Amaji Primary School in Oyam, whose rehabilitation and expansion is also part of the CSR kitty for this project.

Despite some bottlenecks in the pace of the above projects like delayed land acquisition for the transmission lines and some quality assurance issues; I wish to reassure you that we are on course with these flagship projects.

As we wait for the Operation and Maintenance phase, we have subject our O&M team to immense training and apprenticeship in as many places as we could. A team of over thirty trained at the famed Kafue Gorge institute in Zambia for several months and a slightly bigger team is currently in China understudying operations at some facilities similar to the ones being built here.

Beyond Karuma and Isimba, I have the pleasure to inform you that progress on the

Muzizi (48 MW) and Nyagak III (6.6 MW) is looking good with the bulk of the civil works slated to commence next year. We are also prospecting with a couple other small hydros in line with our policy of diversifying our Generation portfolio to include plants that can serve the needs of the remote and rural areas. As a Company, we have also made the first steps towards implementing our Energy mix strategy to include other renewable energy sources such as Solar and Geothermal.

From a governance point of view, we released our audited books of accounts, registering commendable performance. Worthy to note is that UEGCL's total assets as at 30th June 2017 had grown to UGX 3.3 trillion from UGX1 trillion in 2015 as a result of on-going projects. At the same event of our Annual General Meeting, Eng. Gilbert KIMANZI was confirmed on the UEGCL Board. It is well deserved!

In putting together this magazine, we are not blind to the overriding quest to have it as an authority in industry news and practice; as a platform to debunk many held (as true) stereotypes and general untruths about the electricity sector's performance and its contribution to national development. I wish to salute those partners who have sent through your experiences and ideas as articles. Thus synergy will no doubt bring us more readers and hence a more enlightened discourse on matters of electricity service delivery. I will single out the Ministry of Energy and Mineral Development and Umeme for positively heeding our call for articles.

We remain indebted to the technical and other assistance from the Electricity Regulatory Authority, Ministries of Finance, planning and Economic Development as well as that of Energy and Mineral Development. In a special way, I wish to recognize and laud the development co-operation from our partners KfW, Afd and the Norwegian embassy. The rather uphill tasks of our contractors, consultants and supervisors at the various sites cannot be over emphasized while the local government and communities where our projects are located continue to be ever hospitable to our site teams and supportive to our project development. I thank you!.

Enjoy this magazine.

Editorial

Simon KASYATE
Corporate Affairs Manager

It's been quite a year! At UEGCL, 2017 has been that year unlike many others. I will illustrate this by highlighting just a few major successful milestones. In the second half of the year, UEGCL was ISO certified with the ISO 9001:2015 Quality Management System. For a company that has no direct interface with the consumers of her product, ISO certification, of the ISO 9001:2015 is a first in this country and a fete we continue to relish in. ISO 9001:2015 is an international

Quality Management Standard (QMS), applicable to all organizations irrespective of their sizes, sector or location, challenging them to demonstrate ability
to provide goods & services that meet customer and applicable regulatory
requirements. We work in a highly regulated environment because, as they say, that's the nature of the beast. Electricity, that incredible servant but terrible master (if mishandled) cannot be left solely to the forces of demand and supply sans regulation. To do so for any polity is to press the 'self-destruction' button. Aware of the pivotal role electricity plays in national development and spurring regional growth and competitiveness; and the daunting task on our heads –to deliver the country's flagship hydro power projects of Karuma (600MW) and Isimba (183MW); UEGCL is taking no chances. From attracting the best talent to exposing this very talent to as much training as there can possibly be; from having a Hawk's eye view over Karuma and Isimba implementation to research and development in other energy sources; from ensuring a responsible corporate citizenship to environmental management, occupational safety and health UEGCL has had quite a year in the trenches and this edition of GeNews is telling of this story. It's also been a profitable period having registered an asset growth from UGX 1 Trillion to UGX 3.3 Trillion as at 30th June 2017. This asset growth is attributed to on-going projects. The full financial statement is herein for all to see.

At UEGCL, 2017 marks the end of a 3-year strategic direction cycle dubbed the "New Vision and Strategic Direction 2015-2017" and also a start to a new 5-year strategic direction. The first strategic direction mainly focused on financial prudence, Customer satisfaction, enhanced internal business process and Learning and Growth. There is great result to show from this.
However, in line with our continuous improvement regime, this 5 year Strategic Plan aims at strategically positioning the company in fulfilling its mandate and mission of providing reliable, quality and affordable electricity for social and economic development of the country. The focus for the next five years is based on five strategic themes namely; Operational Excellence, Stakeholder & Reputation Management, Sustainable Growth, Engaged Workforce and Safety Excellence. For each of these themes, a number of strategic objectives have been developed together with company measures and targets, which will help to monitor progress of strategy execution.

And so, starting now, our job is clearly cut out!

Back to the magazine, in this, our second edition of the bi-annual magazine GeNews, we invited some of our key stakeholders to share with you their own operational experiences. The sector regulator Electricity Regulatory authority ERA, Ministry of Energy and Mineral Development as well as power distributor Umeme; positively heed our call to them and herein is an enriching read from each of them. And going forward, they will be a permanent fixture in these pages. Thank you folks! To my colleagues, the UEGCL staff, that indomitable G4G (Generating for Generations) family, what can I possibly add about your incredible selves? Those who shared your two pence on whatever topic or experience you had, we are eternally indebted –keep it up. For those who prefer to read from others and, you are equally incredible –thanks for being one of our treasured readers!
Talking about readers; as you get into the inner pages of this edition of GeNews, it's our firm belief that you come to the realization that as promised, this magazine strives to be and remain an industry authority on all matters electricity.

Generating for Generations!

Status Update on Isimba HPP

By Chad Silas AKITA

A photo showing the upper and the lower spillways at Isimba 183(MW) HPP

About Isimba:

Isimba Hydropower project (183MW) in Busana sub-county Kayunga District is 93km's drive from Uganda's capital, Kampala. The project was commissioned on 5 October 2013 by the president of Uganda, H.E Yoweri Kaguta Museveni. The project is contracted to China International Water & Electric Corporation (CWE). Actual works commenced on 30 April, 2015 and the project was designed for 40 months. Upon completion, the project will have consumed 567.7 Million USD. Part of this fund (85%) is a loan from the Exim Bank of China and the Republic of Uganda topped up 15% of the total contract fee. The loan which covers 85% of the construction will be paid back in 20 years.

CURRENT STATUS

A recent visit to the dam revealed that work was well under way as it is currently in its second phase. So far the Second river diversion has been done. Both the downstream and upstream cofferdams on the right river channel have been put in place awaiting dewatering. Water is now being diverted through the spillways which are next to the powerhouse.

Noteworthy, about three months back, the project hit a snag when the owners' engineer with Indian based Energy Infratech PvT limited contract was terminated due to allegations of fictitious reporting in their cash claims and fraudulent receipting. The owner's

engineer is supposed to supervise the Chinese contractors in charge of the dam construction on behalf of the government of Uganda.
Currently Uganda Electricity Generation Company Limited (UEGCL) is supervising the project as a stop-gap measure together with other expert engineers as they work towards contracting another owner's engineer. UEGCL, however, maintains that despite the termination of the owner' engineers' contract, the quality of work being done has not been compromised.

ECONOMIC SHORT AND LONG TERM BENEFITS

Uganda's economy is expected to grow at 6 per cent annually in the medium term juxtaposed with the construction of an oil refinery and the electric railway line- Standard Gauge Railway (SGR). This line will be fully powered to run on electricity generated by UEGCL through Isimba dam added unto the national grid. It is expected to be operational by 2018 and with such heavy infrastructure investments, the country will surely need supply of reliable electricity.

This project is also one of the key projects of the government and is seen as a key sector player for industrialization. As of 2014, when the project started, 85% of Ugandans lacked a connection to the electrical grid. The Isimba dam expected 183 Megawatts added to the national grid will contribute 23% to the national electricity supply. This will be an attracting factor for foreign and local investment in the industrial sector.

According to the national development plan, the target of power consumption per capita is increasing form 75kwh to

A photo showing the lower bracket for unit 2 in the powerhouse at Isimba 183(MW) HPP

A long shot showing the power house at Isimba 183 (MW) HPP

674 kWh per capital and therefore Uganda needs an additional 3500 MW to add to its national grid.
The project is one of the infrastructure projects that the government of Uganda is working on with regards to the fulfillment of its 2016-2021 manifesto of improving infrastructure development and setting Uganda on a path of industrial transformation through heavy investment in hydropower.

Employment Opportunities: The construction of the dam has come at a critical time when the government needs to create jobs for her people. Isimba Hydropower project according to the verifiable records employs 1691 Ugandans. These spread in the categories of laborers, operators, drivers, security guards, skilled and office staff respectively. Important to note, these are not limited to only the districts of Kayunga and Kamuli, where the project is situated. Thus this segment of the population has been able to have an assured income from

A photo showing a stator frame and its lifting beam at Isimba 183(MW) HPP in November 2017

A photo showing ongoing works on unit 2 lower bracket at Isimba 183 (MW) HPP

this project.

The road network: The Kayunga-Jinja road has been tarmacked and is operational. This has resulted in business to boom for the communities that share along this route. As pa contractual clauses, CWE-Isimba (183MW) HPP contractor is supposed to construct a road that connects to Kamuli district. This has short and long term benefits for people who ply along the Jinja road notwithstanding easing communication.

Housing and Real Estate: Since the first speculations about the construction of Isimba (183MW) HPP, land in Kayunga and Kamuli across the Nile got a value addition. Shortly after the works commenced, local investors

A photo showing CWE employees carrying out minor remedial works in the spillway one at Isimba 183 (MW) HPP

Photo showing parts of the turbine unit at Isimba 183(MW) HPP

set up housing facilities in the two host districts to tap an income accruing from selling housing and lodging services. Recently, a descent single house in Kayunga cost about 150,000UGX while a double room goes for about 250,000 UGX. This is good news for the locals who have invested in housing and real estate.

Food and Water: Since 2015, the demand for food to feed workers and Chinese has increased respectively. This has boasted agriculture in the two districts even though the locals still employ rudimentary methods. Women more especially have earned a living on the income derived from selling food in the market situated within the contractors Camp at Isimba.

SOCIAL IMPACT

The construction of this dam like the case is with any other infrastructure has had both negative and positive social impact. The project has a component known as Community Development Action Plan (CDAP). CDAP has espoused the construction of schools, technical colleges, construction of health centers and markets. The point is to have the community derive value benefit from the project. At the current, all formalities to include the affected districts of Kayunga and Kamuli in CDAP have been finalized. The implementation of these projects will be in 2018.

UEGCL AND THE PROJECT:

According to the Dr. Engineer Harrison E. MUTIKANGA, 75% physical progress has been ach ieved and the dam will be ready for commissioning by August 2018.

Shah, one of the expert engineers contracted to supervise the construction said that they are monitoring the work done to avoid quality control issues.

"Once the 183 Megawatts have been added to the national grid, Ugandan's should expect more access to electricity and possibly a reduction in the power tariffs", Said Dr. Harrison addressing the media last month.

The project has helped in the skilling of local engineers and as such in the near future, Uganda is likely not to have to contract foreign companies to construct such.

Status Update on Karuma HPP

By : Flavia ANYIKO and Albert BYARUHANGA

Seven Hydro Power Plants are planned in a cascade on the River Nile in Uganda. The 600 MW Karuma Hydropower Project (Karuma HPP) is the third of the seven cascade plants. It is located 2.5Km upstream of Karuma Bridge in Kiryandongo District, 270 km from Kampala, the Capital of Uganda and 75 km from Gulu Town in Northern Uganda. Karuma HPP is a run-of-the-river (ROR) scheme located on the Victoria Nile stretch between Lake Kyoga and Murchison Falls.

The main purpose of the project is power generation with a total installed capacity of 600 MW. The hydro power plant is expected to provide reliable and affordable electricity for the socio-economic transformation of Uganda.

The Karuma HPP is under an Engineering, Procurement and Construction (EPC) contract between the Government of Uganda represented by the Ministry of Energy and

A photo showing the downstream intake section at Karuma 600(MW) HPP

Photo showing the intake section at the downstream under construction at Karuma 600(MW) HPP

Photo showing behind the downstream intake section at Karuma 600(MW) HPP

Photo showing the spiral casings inside the power house at Karuma 600(MW) HPP

Photo showing the tunnel to the power house and up to the surge chamber at Karuma 600(MW) HPP.

Photo showing the surge chamber inside the power house at Karuma 600(MW) HPP

Photo showing part of the tunnel at Karuma HPP

An aerial shot of Karuma 600(MW) HPP

Mineral Development (MEMD) the Employer and Sinohydro Corporation Limited of China the EPC Contractor. Uganda Electricity Generation Company Limited (UEGCL) is the Implementing Agency for the hydropower plant component of the project. UEGCL is charged with the responsibility of supervising both the EPC Contractor (Sinohydro) and the Owner's Engineer (Energy Infratech Pvt Limited). The Owner's Engineer is contracted by the client to provide consultancy and supervision services for the construction of the Karuma Hydropower Project.

The main components of the project include the Dam, Intake, Headrace tunnels, Underground Powerhouse and Main Transformer Cavern, Tailrace Surge Chamber and Tailrace Tunnels. The dam is an aggregation of 20 dam sections which include the non-overflow blocks on both sides, an overflow/spillway section, a sand flushing bottom outlet section, an ecological discharge releasing section and fish-way, with a total length of 314.4m and height of 14m. Adjacent to the dam are six Power Intake structures leading to six 7.7 m diameter headrace tunnels; one serving each 100 MW generating unit. The underground powerhouse mainly comprises of a 45m long and 19.6m wide erection bay for equipment installation and maintenance, a units bay where six hydro generator units (capacity 100 MW each) will be installed, an auxiliary powerhouse, transformer cavern and cable shaft. The tailrace surge chamber is of an orifice type divided into two chambers, each connecting to three turbine units and one of two tailrace tunnels. Tailrace tunnels TRT#1 and TRT#2 are 8,705 m and 8,609 m in length respectively.

Comparative Facts and Photos

The volume of rock excavated from the caverns is capable of filling up Nelson Mandela National Stadium, Namboole more than three (3) times whereas the space in the Powerhouse can accommodate "Mapeera House" more than four (4) times. The total length of projects tunnels, adits and shafts combined is almost equivalent to the distance from Entebbe to Kampala. Four dump trucks can run shoulder to shoulder in the tailrace tunnels. The scope and complexity of Karuma HPP makes it the largest infrastructure project to be undertaken in Uganda since the Uganda Railway.

Financial Progress

The total EPC cost of the Karuma HPP (hydropower plant) is USD 1,398,516,747 and the project is funded by EXIM Bank of China (85%) and counterpart funding by the Government of Uganda (15%). As of November 2017, project financial progress is at 56% with a gross amount of USD 783,632,756 certified for payment by end of November 2017.

Physical Works Progress

The project commencement date is 16 December 2013 with a duration of 60 months therefore the completion date is 15 December 2018. The overall progress of physical works is estimated at about 71% at the end of November 2017. Progress of civil works at the different project components is as follows: Dam blocks #1-16 (98.3%), Intake

concrete (87.4%), Pressure Shafts (100%), HRT horizontal (81.4%), Power House U1-6 up to El.948.55 (41.6%), Auxiliary Powerhouse (25.1%), Bus Duct Tunnels (100%), Main Transformer Cavern (65.6%), Surge Chamber (48.4%), Tailrace Branch Tunnel (23.3%), TRT Overt (86%) and TRT Invert (26%).

Construction of Lot I and II of the Employer's Permanent Camp commenced in November 2017 while Lot III & IV are pending design approval and contract signature. Lot I comprises of an office building and laboratory while Lot II includes a canteen building, 10.5 Type B houses and a Visitor's Centre. Lot III includes a Hostel block, Club House, Swimming Pool, House Type B, House Type C + D and House Type E. Lot IV is comprised of House Type B, C and D.

The manufacture of Hydro-mechanical and Electro-mechanical Works is in progress at various factories in China and Shop Inspections and Factory Acceptance Tests to check on progress and Quality Assurance respectively have been ongoing throughout 2017. The equipment being manufactured includes Turbine Runners, Distributors, Generators, Servomotors, Hoists and Cranes, Gates, Trash Racks, GSU Transformers, Auxiliary and Balance of Plant items. Some of the equipment has already been delivered and installed on site including penstocks, draft tubes, stay rings, spiral cases, EOT Crane, gate slots among others. In addition, training of the Employer's O&M staff on Stator Assembly and HPP Operation and Maintenance commenced in November and December 2017 respectively in China.

Health Safety and Environment

There has been noted improvement in aspects of health, safety and environmental performance covering PPE provision and usage, safe access systems, driver training, waste management, drinking water supply, air quality in underground works, wildlife monitoring and site security. Compliance with statutory and regulatory conditions for the various licenses for the construction works is monitored and tracked on a regular basis in conjunction with multi-sector stakeholders.

2018 Look Ahead

Karuma HPP works can be broadly categorized into three phases namely; site mobilization and excavation works, main structural concrete works and installation of electro-mechanical and hydro-mechanical equipment. The site mobilization and all excavation works had been completed by close of 2016, structural concrete works have been the key focus in 2017 and moving into 2018 the project works will mainly involve installation of equipment to pave way for the much anticipated electricity generation. UEGCL is committed to ensure the Karuma HPP is delivered on time, within budget and to the agreed quality specifications.

Generating for generations!

Members of the Project Steering Committee tour the dam section at Karuma HPP, during one of their routine visits to the project site.

Employee Spotlight

Q & A for Ms. Chiria Drakua Eunice

By Jonan KIIZA-PRO Isimba

About Self

When you encounter her for the first time, no doubt from the inception, she reflects a serious employee who minds her duties. Chiria Drakua Eunice is 59- years and has worked with UEGCL for the last nine years. As an accomplished administrator, she holds a master in management science of UMI and several qualifications at a postgraduate level in management, business administration and secretarial studies. She boasts with an amalgam of 38-years working experience from international organizations like UNDP-in Sierra Leone (1985-88), to government ministries including the Ministry of Defence (1978-79), Ministry of Agriculture(1980-84), Ministry of Justice(1988-90), Ministry of Water and Environment (1998-2008), Ministry of Energy (2008) and UEGCL 2009-to date.

What was UEGCL like in the past 10 years?

UEGCL has grown over the years with its mandate of only Concession Monitoring to Implementing Governments flagship projects of Karuma, Isimba, and Ayago projects. The Government of Uganda has put its trust in UEGCL to make its National Development Plan 2010 –2015 aspirations of which sets a projected target of increasing electricity consumption per capita from 75 KWh/Capita (2010) to 1,273 kWh/Capita (2020).

Where is UEGCL now in your opinion?

I believe UEGCL is at its peak of expansion in terms of its mandate and growth in terms of staff numbers growing from around 60 members to 140 presently and probably growing even much bigger. UEGCL is preparing to take over the Operations of Karuma and Isimba dams once completed. This work has put a lot of pressure on the time of the employee. Members put in extra working hours just to see workflows in a timely manner.

What have been your achievements in your stay at UEGCL?

Setting up administrative structures for UEGCL team from the Hydropower Development Unit, introducing Transport Policy in UEGCL, Successfully moving the UEGCL office from UEDCL Tower to its current home on Plot 6-9 Plot Close - Bukoto

What challenges do you recall that almost made you think of quitting your job?

I have never had such a time when I thought of quitting my job. I love my work and always take criticism of any kind in a positive manner and this has helped me to work very well with most people. I do not remember any time throughout my work life where I disagreed with my superiors or peers to the extent of wanting to quit. I have changed jobs for growth and career development. In a nutshell, I love working and I love what I do. Positivity has always helped me overcome challenges.

Have you ever lost your anger with any of your bosses?

None that I remember of.

How did you solve the scuffle?

Not applicable

What are some of the few areas you think the organization can improve?

Internal Communication, Develop an Organogram which gives staff the opportunity to see growth in their careers. Our current organogram seems rather flat. UEGCL needs to value the contribution of staff and appreciate them. The strength of an organization depends on the human capital.

What are your hobbies?

Watching Football, Reading, listening to music, love helping people.

Any word of advice for the young employees at UEGCL?

Humility, Positivity, Honesty, Respect for self and being focused in whatever they do will take them to great heights. Learn to work SMART.

Photo of Eunice Drakua, the Administration officer head office, who is also one of the few long serving employees at UEGCL.

Committee on Natural Resources-Parliament of Uganda Lauds UEGCL progress at Isimba HPP

By Jonan KIIZA-PRO Isimba

A group photo with some members on the committee of natural resources-parliament of Uganda at Isimba 183(MW) HPP in October 2017

Over a year ago, the Isimba HPP was the subject of numerous headlines about cracks that had appeared. There were even doubts that the dam construction would progress after this emerge. The criticism caught the attention of the legislators, more specifically the Parliamentary Committee on Natural Resources. On October 4, 2016, they paid a visit to the dam when the stories emerged. A year later, they visited again to see whether the cracks had now been dealt with in order to ensure value for money the Isimba and Karuma HPPs.

The committee members that visited the Isimba HPP in October 2017 were led by Chairperson, Hon. Alex Byarugaba (MP Isingiro South).

"We have come to check if the previous issues we found like cracks, the integrity of the embankment dam, compensation for some people affected by the project, the access road to Kamuli, safety for workers and others have been fixed," Said Hon. Byarugaba said.

A photo of the members on the committee of natural resources-parliament of Uganda boarding after their site inspection in October, 2017.

Onsite was State Minister for Energy Hon. Simon D'Ujanga, Project Steering Committee chairperson Eng. Dr. Badru M. Kiggundu, UEGCL CEO Dr. Eng. Harrison E. Mutikanga and Prof. Wang Yongtian, the Project Manager China Water and Electric Corporation, the contractor.

The committee was appraised on the progress of the project so far, the gains and the challenges as well as the sticking issues that will require their support to surmount.

Eng. Kiggundu briefed them on the reason for non-renewal of the contract for Energy Infratech PVT Ltd (the Owner's Engineer), which expired on September 7, 2017.

"You will agree with me that management and specific project management will often demand taking hard decision and administrative sanction but all this is within good faith and the overriding desire for success," he said, adding,

"History will judge us harshly if we, as the Project Steering Committee or as Ministry of Energy or UEGCL or even you as a concerned committee of Parliament looked on while specifications were altered at a whim, works went shoddy with reckless abandon and timelines negated without restraint at the country's flagship hydro power projects."

After a site tour, the committee members were visibility impressed by the progress of work so far. "Just ensure you tie the loose ends and let's bequeath our country a project worthy our efforts and money," said Hon. Hebert Ariko (MP Soroti Municipality).

Isimba hydropower dam is expected to be commissioned in December 2018 powering onto the grid 183MW from 4 turbine units. So far, the civil works are over 85% while the electromechanical and hydro-mechanical works are close to 50% complete.

Dr. Eng. Hajji Badru Kigunddu with some MP's at Isimba in October, 2017.

Dr. Eng. Hajji Badru Kigunddu with some MP's at Isimba in October, 2017.

Graduate trainee bonding

By Atholere ESERI

Eseri ATHOLERE is a graduate trainee attached to the Operations and Maintenance team at Isimba 183(MW) HPP

It is amazing how the stars line up just right and your life changes quickly and significantly. Graduating with a good bachelor's degree from an engineering school after consuming four years in academia is such a blessing. It turns in a double blessing when you get an opportunity to join Uganda Electricity Generation Company Limited (UEGCL) just after campus. After graduation day, the thought in everyone's mind is; "how am I getting the job?"

With a good class of a degree from the engineering school, one expects to have a well laid future which starts with a perfect job. This is never the case in reality for most graduates. Gone are the days when having a degree was a guarantee to a good job.

Today, the tradition has ever since changed. Nowadays, the quality of the degree is an important supplement. It gets a bit more grueling when one is seeking to work with a growth oriented ISO certified professional organization such as UEGCL. Here, even the quality of the degree might not be sufficient to earn one a job. There is need for an individual to validate the good degree which he/she holds.

Working with UEGCL is the most exciting and interesting an opportunity any mechanical Engineer cannot hesitate to grab. There is an invaluable experience for one to tap into, ranging from the simple mechanical systems to complex electro-mechanical and mechatronic systems. All forms of technology both old and new, pneumatic, mechanical, electrical and hydraulic systems are at ones' disposal. An opportunity to work as a graduate trainee at UEGCL introduces one to a highly enthusiastic and professional team which is committed to mentoring and ensuring the required career development. A trainee is valued and given the opportunity to interface with prospects and challenges. This provokes one to plan, think and thereby maximizing and efficiently utilizing one's potential for career advancement.

Besides the "taught- in-class", there is a lot much more to "hit the books" at UEGCL. Quality Management, Punctuality, Inter-personal skills, Safety consciousness and integrity are values one must pick on as long as you're associated with UECGL. Such virtues are important in life and yet there is no school where they are taught!

Eseri Atholere performing during the end of year party under the moment "UEGCL got talent"

UEGCL is a family with devoted members who mind about everyone's growth. There is a very high sense of belonging amongst the members. We are all proud of our positions in the family. No one would ever want to get detached once given the opportunity of membership. There is a lot of healthy and professional bonding amongst the family members at all levels. In addition to the bonds; all members treat each other with the highest degree of respect. The popular Friday breakfast which aims at bonding staff has promoted team spirit to the extent that it cannot go unspoken about. At UEGCL, we respect that each individual has his or her own biography that shapes his perspective. We pride ourselves on fostering an environment in which individual differences and diversities are embraced and encouraged. The value for candor and the belief that communicating honestly shows respect, makes UEGCL an outstanding organization in the 21 century. I must say that I am very proud for having been given an opportunity to be a part of such a crew!

I take the opportunity to thank all UEGCL staff for granting me the opportunity to work with them as I kick start my career as a mechanical engineer.

The Writer is a Graduate Trainee based at Isimba HPP

Can UEGCL become the 'NEXT' KENGEN?

Beautifully designed KENGEN branch Office at Olkaria

James OTTO
Strategy and Business Development

In January 2016, the management team of UEGCL undertook a benchmarking visit to the celebrated Kenya Electricity Generating Company Limited (KENGEN). The purpose of the visit was to share ideas, compare organisational practices and learn how the management of KENGEN have succeeded in building an organisation that is only 5 years older than UEGCL into one of the best public utilities in Africa. The benchmark was highly successful and some departments like Strategy and Business Development have translated some of the ideas into practice. A microscopic assessment of 6 factors both external and internal (those beyond KENGEN control and those controlled by KENGEN) provides a valuable lesson to UEGCL as we strive to generate for generations and become the 'next' KENGEN

1. KENYA'S ENERGY SECTOR

KENGEN and UEGCL visit at Olkaria 1 power plant.

A sneak peak of the institutional set up of Kenya shows a similarity with that of Uganda. Both countries have a line ministry responsible for policy formulation and a statutory body established to regulate the generation, transmission and distribution of electricity. Just like Uganda, Kenya's energy sector also underwent reforms and in 1996, the management of Kenya Power Company (KPC) was formally separated from Kenya Power and renamed KenGen in January 1997. In 2006, KenGen was listed on the Nairobi Securities Exchange after the Government of Kenya sold 30% of its stake in the company through a very successful Initial Public Offer (IPO).

KENGEN and UEGCL Management

1.1 Key differences KENGEN vs UEGCL

Whereas the institutional set up of the energy sectors between the two countries is very similar, there are glaring differences in the efficiency and effectiveness of their operation. In Uganda, our energy sector faces major challenges including the overlapping and conflicting roles within the sector, poor planning system of the sector as well as the inadequate capacity and independence of the agencies. These challenges have had a major impact on the operation of UEGCL to carry out its mandate. A comprehensive review of the sector reform, its policy, legal, regulatory and investment framework and its results should be undertaken. For UEGCL to become like KENGEN, the Uganda power sector needs to undergo a 'second phase reform' so that the challenges facing the sector can be addressed

2. CORPORATE GOVERNANCE

The KENGEN Board consists of eleven (11) members made up of a non-executive and independent Chairman, one executive Managing Director & CEO, the Cabinet Secretary-National Treasury, Principal Secretary-Ministry of Energy & Petroleum, plus seven independent and nonexecutive directors. The UEGCL Board essentially consists of a non-executive and independent Chairperson, Independent Non- Executive Directors and Non- Executive Directors.

Key differences KENGEN vs UEGCL

The difference between the two Board compositions is the presence of one executive Managing Director & CEO on the KENEGEN Board.

There have been endless arguments for and against the inclusion of CEO as a Board member. Those advocating for separation points potential conflicts of interest created when a CEO serves on the board. Those advocating for CEO as inclusion indicate that despite abundant research, there is no proof that CEO inclusion has a negative impact on companies. On the contrary, studies show that firms with CEO inclusion actually perform better. A recent study by PwC shows that 60% of the largest power and utilities in the US have CEO as their Board Chairperson.

ORGANIZATIONAL DESIGN

Gary Hamel once said, "Organizational structures of today demand too much from a few, and not much at all from everyone else". This is because Organizational structure helps a company assign a hierarchy that defines roles, responsibility, and supervision. If the company has a poor structure, then there will be unequal work load, slow decision making, unclear lines of communication, and low staff productivity.

UEGCL Board recently approved a new structure although it has not been fully implemented. The motive for a new structure has been the expanded mandate from concession monitoring to implementing Government flagship projects and the upcoming responsibility of Operation & Maintenance. In principle, the new UEGCL structure was aligned to the strategic direction 2015-2017 which is on the verge of expiring. Once the new strategic plan 2018-2023 is approved, then the organisation structure will also need to be reviewed for alignment.

KENGEN recently reviewed its organisation structure to address issues such as Span of Control, Departmentalization, Formalization and Centralization. With a staff of over 2400, the company had a tall structure with a hierarchy of 15 layers. After the review, they succeeded in reducing its hierarchy from 15 layers to just 6 layers!! This flatter structure will ensure reduced bureaucracy and has also improved teamwork.

Key differences KENGEN vs UEGCL

Both UEGCL and KENGEN have a flat functional structure aligned to their respective strategic plans. The main difference is that KENGEN has fully implements its structure and carries out periodic review of the structure to address any loopholes. The UEGCL structure has had issues ranging from unequal work load, unclear lines of communication, and low staff productivity. Management has made efforts to address these issues and the impact of the new organisational structure can only be appreciated after the entire structure has been implemented.

STRATEGY

"There is nothing as useless as doing efficiently that which should not be done at all" remarked Peter Drucker. The strategy and business performance directorate at KENGEN is charged with organizational performance which essentially has 9 fundamental elements in 3 clusters all centered on leadership. In a nutshell, the directorate handles strategy management, business performance and renewal.

Key Difference KENGEN vs UEGCL

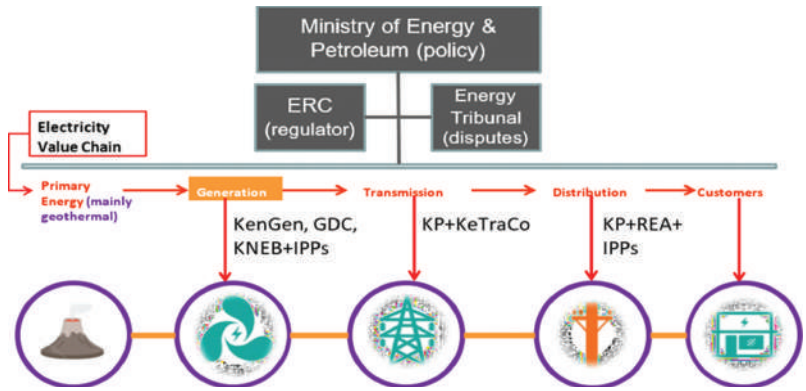
First and foremost, the Board of KENGEN has retained McKinsey & Company a worldwide management consulting firm as their strategy management advisor. This action underlines the Boards commitment to strategy.

Secondly, at KENGEN, the Board signs a performance contract with Government of Kenya. This performance contract is then cascaded down to the CEO and the department heads. At UEGCL, there is no performance contract between the UEGCL Board and the Government of Uganda although there exists performance contract between the CEO and the Board and the Heads of Departments

Thirdly, strategy renewal anchored on Innovation, Research and Development, as well as Knowledge Harvesting and Transfer is fully functional at KENGEN. At UEGCL, Research and Development is already being rolled out while the other tools for strategy renewal such as Innovation and Knowledge Harvesting and Transfer will be implemented in the foreseeable future.

ORGANISATION SYSTEMS

"In an organisation never follow a person follow the system"-Bharath Mamidoju. How does UEGCL systems compare to KENGEN? Before we make comparisons between the two systems, it's important that we define what an organization system is. Each day, business is conducted at UEGCL in a certain fashion. The way things are done can be referred to as the systems that you have in place. For example, the way UEGCL does project supervision, procurement,



Kenya Energy Sector setup

strategic planning, recruitment of new staff etc. In some organizations, similar systems are grouped into functions such as project management systems to refer to the way an organization carries out project management. Now that we know what a system is, let's look at the KENGEN systems and compare to UEGCL.

Essentially, KENGEN has several systems that both formal and automated. A case in point is the ICT department that has several systems such as security and architectural planning, ICT infrastructure systems, ICT business application systems and ICT relationship management systems.

Key differences KENGEN vs UEGCL

As stated earlier, KENGEN works with McKinsey & Company the worldwide management consulting firm that has been supporting them in institutional strategic activities which includes review and design of organisation systems to ensure smooth roll out of strategic plans. As such, they have a fully developed organisation system that is reviewed periodically as part of continual improvement as required by the ISO standard which KENGEN has certified to since 2004.

UEGCL is still a growing company especially in terms of system development. The recent acquisition of the ISO 9001:2015 certificate for the quality management system is one step in the right direction for organisation system development. But the real challenge is the implementation of the requirements of the ISO 9001:2015 standard so as to achieve tangible benefits and bring meaningful organisation systems at UEGCL

ORGANISATIONAL CULTURE

A lot of us don't understand what an organisational culture is and why it's considered the bedrock of company success. This is what Peter Schutz, the retired CEO of Porsche AG Worldwide had to say when he was hired to revive the dying auto giants Porsche; "The biggest challenge was to restore a dying organization, which was losing money, to growth and profitability. The first steps were not: Cutting costs, developing new products and/or services, inventing clever new marketing concepts, or clever advertising! Instead, the first steps were: Rebuilding a culture where all employees were a family, striving for a "shared" success! The basis for this success turned out to be winning major races again"

We were not in KENGEN long enough to fully understand their culture and shared values but we were lucky to be invited to attend their 'safety week' celebrations which is an annual week long activity aimed at building a culture of prevention on occupational safety hazards. The activity is attended by the CEO and the Directors with a lot of enthusiasm and it's deeply rooted as part of the several culture building initiatives the company invests in to ensure employee engagement. Jack Welch, the former CEO of General Electric once said, "There are only three measurements that tell you nearly everything you need to know about your organization's overall performance: employee engagement, customer satisfaction, and cash flow ...It goes without saying that no company, small or large, can win over the long run without energized employees who believe in the mission and understand how to achieve it…" while.

Key Differences KENGEN vs UEGCL

If someone asked you to describe UEGCL's culture, what would you say? To put in another way, how much do you love UEGCL? "Customers will never love a company until the employees love it first" -Simon Sinek, author, Start with Why.

Why Asset Management should be the future of UEGCL O&M Framework

Eng.George Tusingwire MUTETWEKA, Chief Operations Officer, James OTTO, Strategy and Business Development

UEGCL is in the preparation phase for setting up an appropriate framework for Operating and Maintaining Karuma, Isimba and later Nalubaale/ Kiira Hydropower Plants. In principle, UEGCL can adopt the 'traditional' approach to O&M which focuses on achieving a high plant reliability and availability. However, the O&M environment is in a constant state of evolution and there is pressure on the O&M managers to provide more than just plant reliability and availability. They are expected to be responsible for controlling costs, managing risks, evaluating and implementing new technologies, managing health and safety issues among others. This increased pressure has led to many plant operators to slowly migrate from the traditional approach to a new framework called Asset Management which provides a multidimensional view to managing an asset as compared to the traditional approach.

One such plant operator that is taking the lead in transitioning from the traditional approach to the asset management framework is Chelan County Public Utility District (P.U.D) No. 1 located in Wenatchee, Washington, USA. In June 2017, a team from UEGCL organised a benchmarking visit to the PUD to find areas of collaboration as well as to share experiences on Asset Management methodologies and best practices. The PUD has a total installed capacity of 1983 MW from Rocky Reach Dam (1,300MW), Rock Island Dam (624 MW) and Lake Chelan Dam (59 MW)

The transition to asset management at the PUD was triggered by the need to systematically plan and prioritize refurbishment requirements of their old power generation assets while ensuring that they were managing risks, investing the right amount at the right time in the assets and meeting their performance targets. At the start of the transition, the PUD in accordance with best practices from ISO (International Standards Organization) 55000, PAS-55 and the Institute of Asset Management (IAM) developed an asset management governance structure that is meant to establish polices and provide continuous monitoring of the implementation of the asset management practices.

Eng. Gilbert John KIMANZI, Chairperson, Technical Committee thanking Janel Ulrich, the Generation Asset Program Manager

The governance structure is made up of four (4) high level teams at the District which consisted of a District-wide Senior Sponsorship Team who are responsible for sponsoring the effort, providing accountability, decision making on District-wide issues. The second team was the District-wide Governance Team who are responsible for creating and reviewing District-wide

President Board of Commissioners - Centre (Randy Smith) and part of the Management team

standards which included reviewing the Strategic Asset Management Policy and Commitment annually and providing direction to the working team for District wide efforts. The third team is the District-wide Working Team who identifies and proposes District strategic actions, conducts work on the District strategic actions and develops Business Unit Strategies and specific Asset Strategies. The last team at the District level is the Stakeholder Communication Team who attend quarterly meetings, stay in touch with the progress of the effort and share information with others. Below the District wide teams, there are also governance structures at the different Business Unit consisting of three (3) layers. For example, at the Generation Business Unit, there is the Generation Senior Sponsor, Generation Governance Team and the Generation Working Team. This strong governance structure laid the foundation and provided accountability for the highly successful transition from the traditional method of O&M to Asset Management. In fact, during our inception meeting at the head office of the PUD, we were welcomed by the President Board of Commissioners who reiterated the commitment of the Commissioners to providing support to the Managers to ensure successful implementation of asset management. He also indicated that the purpose of the governance structure is not to create mandatory

Asset Management Discussion

requirements that people must follow, rather, to provide standardization when an area or areas decide to do something. After the establishment of the different governance structures, the PUD developed the Asset Management Commitment (Policy) which enabled the development of District wide Strategic Asset Management Plan (SAMP) which defined the objectives of Asset Management, the level of Risk Appetite and the Asset Strategies. The SAMP was then cascaded down to the different Business Units and translated to Asset Management Plans. For the Generation Business Unit, this led to the development of a 20 year proposal for Asset replacement based on condition monitoring as recorded using Hydropower Asset Management Partnership (hydroAMP).

The hydroAMP developed in 2001 by the Bureau of Reclamation (BOR), Hydro-Québec (HQ), the Army Corps of Engineers' Hydroelectric Design Center (HDC), and Bonneville Power Administration (BPA) and currently managed by CEATI is one of the best equipment condition assessment framework available. At the PUD, the hydroAMP together with Maximo (one of the world's leading enterprise asset management solution packages) have been the catalyst for the utilization of a condition-based replacement strategy and comprehensive risk assessment, optimization of maintenance and investment cost and plant availability.

The benchmarking visit was highly successful and the team was able to pick key lessons that will be implemented at UEGCL as we strive carry out O&M following Asset Management Framework. The lessons were elaborated in the back to station report but is summarised here for those who missed it.

i. UEGCL will need to adopt an Asset Management Standard such as ISO 55000 that will provide the framework for the smooth implementation of Asset Management.

ii. UEGCL will need to develop and maintain an appropriate Asset Management governance structure, policies, strategies and long term plans.

iii. Need to build capacity so as to enhance the skills level of the personnel to drive asset management.

iv. Need to invest in the appropriate Asset Information Technology Infrastructure including subscription to CEATI.

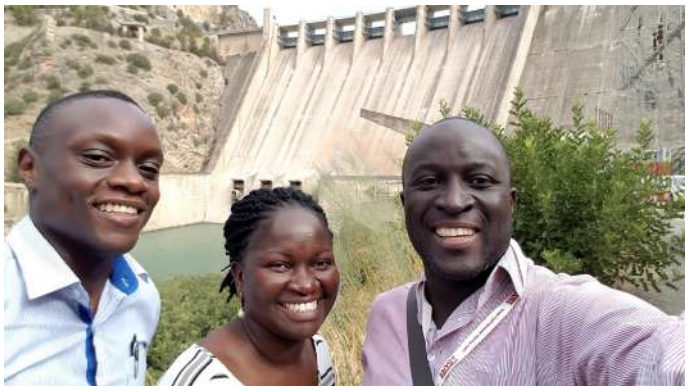
v. To ensure risk based decision making as required in Asset Management, UEGCL must define the risk appetite for UEGCL Asset Management.

vi. Last but not least, UEGCL should maintain partnerships and collaborations with plant operators such Chelan PUD who have successfully managed to implement Asset Management.

HYDRO 2017 Seville, Spain

By Ronald LUTAAYA & Mary MWOGEZA

"HYDRO" is an international annual conference focusing on the technical, environmental, social and economic aspects of hydro power plants, dams and multipurpose water resources development projects. The "HYDRO 2017" event featured a one-day pre-seminar workshop on "Design a hydropower plant in one day", 3-day technical exhibition that run concurrently with conference sessions, and a 4-day post conference study tour to multipurpose dams and hydropower plants. "HYDRO 2017" was held at Fibes Congress and Exhibition Centre, Seville, Spain with the theme "Shaping the future of hydropower" attracting over 1200 delegates from over 70 countries.



Ronald LUTAAYA, Mary MWOGEZA and Isaac ARINAITWE sharing a light moment during the Iznajar tour.

of the key aspects discussed included; determination of type of scheme, generation capacity, power house location and turbine selection.

The conference session comprised 4 parallel presentation sessions of over 230 papers of case studies and research spanning a broad range of aspects including risk, dam safety, flood mitigation, operation and maintenance, project cost control, power plant rehabilitation and most intriguing, technological advancements in hydro.

It was impossible to be disengaged from the captivation of a tested SAM turbine to unprecedented outputs of 40MW, now making it a formidable alternative to the vertical Kaplan in mid-range output plants, but with lower construction costs, shorter installation time and easier maintenance. The successful model of a Francis turbine with 40% reduction in dynamic stresses and permissible operation from 0 - 100% of design flow rates was a little shy of heavenly.

The icing on the cake were the exhibitors set up just a level below, over 250 stalls of solutions that virtually covered every inch of hydro power and will definitely come in handy to UEGCL during operation and maintenance and when it expands its business portfolio. From the remotely operated sonar tunnel inspection vehicles, to submersible generators, hydraulic bolts, real time power system simulators, hydraulic structure water proofing membranes that can be installed underwater, floating photovoltaic panels, self-lubricating bearings, hydrosuction sediment removers, 1-inch pipe generators (yes, 1-inch generators!), complete power stations in a 20-foot container... sigh, it was absolutely astounding. For an engineering enthusiast, an immensely thrilling experience and an unparalleled tech exposure is a meagre description of what the conference session was.

The general talk was of the conference closing dinner flamenco dancers of the previous night, and as the last tour participants trickled aboard the bus, it set off for Guillena pumped storage plant, marking the beginning of the 4-day study tour. The plant features an artificial upper reservoir of 2.33hm3 capacity, one 34m high straight gravity dam and 3 smaller arch dams that block other hill saddles. 3 70MW reversible Francis turbines fed by 800m long penstocks makeup the powerhouse. The lower reservoir is dammed 4km downstream of the power house on river Huelva. The governing system electrical panels feature an advanced fire protection system, consequent of fire that engulfed the control room in 2006.

Tajo de la Encantada HPP

The team was happy to share their experience, most especially of how the plant was recommissioned in 3 months with a new governing system. The tour proceeded to the La Minilla gravity dam also on river Huelva that spans 257m, 62m height and a storage capacity of 57.8hm3. The dam primary purpose is water supply of Seville through the La Canal Minilla. The dam has 4 sliding sluice gates of 6m with a tilt pad. Commissioned in 1985, was a 2.15MW unit with a horizontal axis Francis turbine and wheel fly on the generator shaft. Although decommissioned, it was astonishing to see a liquid resistor, technology only read about in the dusty books at the top of the shelf. Overnight stay was 1 hour away in the history rich city of Cordoba, in preparation for the La Brena II dam visit that dawned the second tour day.

La Brena II dam is a 119 m high multipurpose roller compacted concrete dam with a crest length of 685m, and capacity of 823hm3 on Guadiato river. It is an upgrade from a 60m high, 100hm3 1935 built La Brena I dam. The primary purpose of La Brena II dam is irrigation during the summer months but also features a powerhouse with two 17.5MW Francis turbines and 8 pumps. The dam structure suffered leakages of up to 12,000l/min that reduced to 4000l/min by grouting.

The third day commenced with a tour of Iznajar dam on river Genil at the southerly border of Cordoba. The main motivation for construction was flood protection, but is also used for irrigation

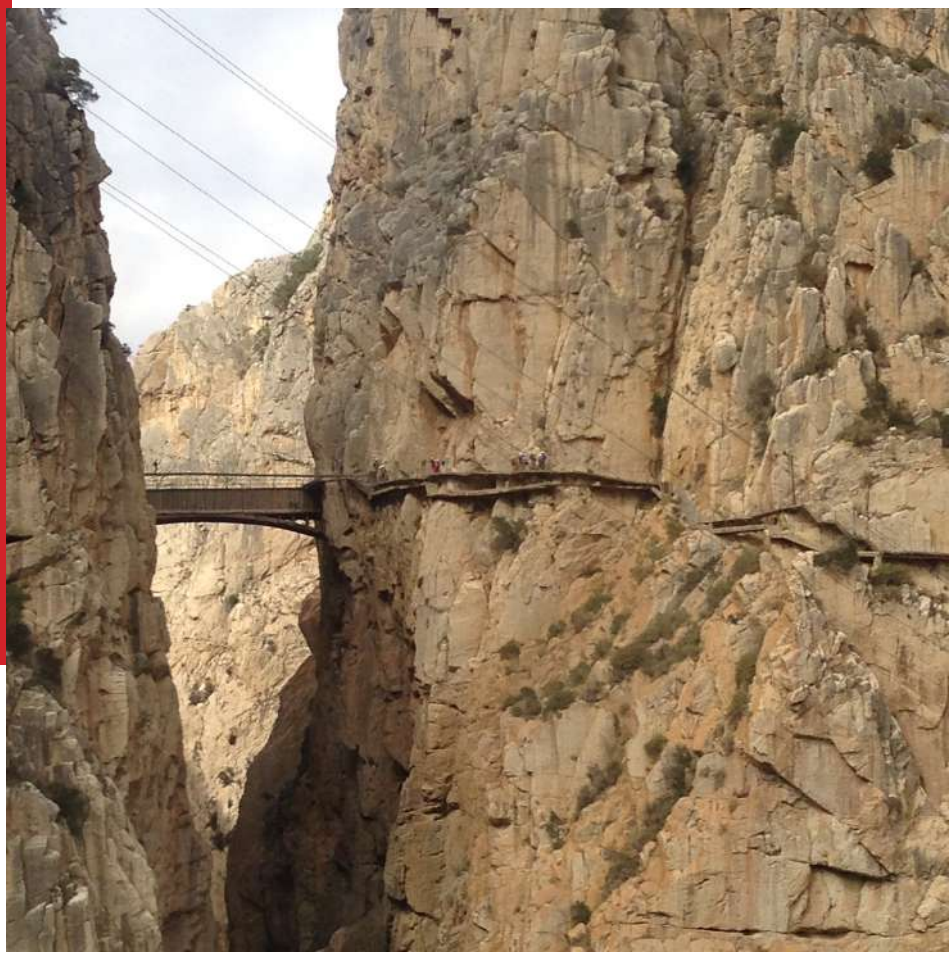


Photo showing Sierra Nevada foothills

Tour of La Brena II dam.

Tour of Guillena pumped storage plant

of the surrounding region of 60,000 hectares and features a 2 Francis turbine power house of 80MW installed capacity. The dam is 120m high, with a crest length of 407m and 8 radial gates. The dam also features 7 dewatering outlets, 1 of which was opened for the team to experience 950m3/s of water shooting into the air, creating a mini rainbow and fine mist that fell onto them. The dam is founded on limestone and secondary marls supported on different blocks. As such, the dam has 2 open structural joints of 2-foot width to allow independent dam block movement.

In the afternoon, the team proceeded to the foothills of the Sierra Nevada mountain to tour the Tajo de la Encantada pumped storage plant on river Guadalhorce. The narrow roads and hairpin turns winding up the hill side had the visual height intolerant members sitting stiff in the centre of the bus swearing not to look down. The other members were up all over the bus windows taking shots of the breath-taking views up the mega hills. The plant featured 4 92MW reversible Francis turbines, a lower reservoir impounded by a dam on river Gualohorce and a man-made upper reservoir of capacity 3.37hm3.

The team also visited two UNESCO World Heritage sites;

The Mosque-Cathedral: Most of the original small temple that stood at site was destroyed in 784 AD on orders of Abd al-Rahman I, the ruler then, to build the grand mosque of Cordoba. The mosque is still held by the original beautiful 856 columns made of granite, jasper, onyx and marble, supporting arches with the iconic red and white voussoirs. The area was reconquered by Christians in 1236, converting the mosque into a church. Astonishingly, the mosque was not destroyed but a church was built in its center, becoming the Mosque-Cathedral (Mezquita-Catedral as the locals call it) that is still admired to this day.

Alhambra, Granada an ancient palace and fortress was originally constructed as a small fortress in 889 AD but expanded over centuries to include royal residences and courts up to the 35 acres it now covers. It was home to founding King of Nasrid kingdom, Mohammed ibn Yusuf Ben Nasr and to Charles I & V. It is where Christopher Columbus received royal endorsement for his expedition. The ravishing Islamic calligraphy all-over the walls, fountain of lions, royal palaces and medieval gardens were etched in our minds and marked the conclusion of the trip.

REGIONAL COMPARISON

	UGANDA		KENYA		KENYA	RWANDA		RWANDA	TANZANIA		
Customer Category	**UShs/ kWh**	**$/kWh**	**KShs/ kWh**	**$/ kWh**	**Ushs/ kWh**	**Rwf/ kWh**	**$/ kWh**	**Ushs/kWh**	**TZ shs/ kWh**	**$/ kWh**	**Ushs/ kWh**
Domestic Customers *(Low voltage single phase supplied at 240 volts).*	685.6	0.19	21.9	0.21	768.3	189.0	0.22	803.3	350.0	0.16	567.2
Commercial *(Three phase low voltage load not exceeding 100 Amperes)*	619.1	0.17	22.8	0.22	800.2	126.0	0.15	535.5	292.0	0.13	473.2
Medium Industries *(Low voltage 415V, with maximum demand up to 500kVA)*	568.0	0.16	17.6	0.17	617.9	90.0	0.11	382.5	195.0	0.09	316.0
Large Industries *(High Voltage 11,000V or 33,000V, with maximum demand exceeding 500kVA but up to 1,500 kVA)*	368.1	0.10	16.2	0.16	566.8	83.0	0.10	352.8	157.0	0.07	254.4
Extra- Large Industries *(High Voltage 11,000V or 33,000V, with maximum demand exceeding 1,500kVA)*	364.6	0.10	15.6	0.15	545.7	83.0	0.10	352.8	152.0	0.07	246.3
Street Lighting	669.5	0.18	22.8	0.22	800.2	192.0	0.22	816.0	350.0	0.16	567.2
Exchange Rate Published by BoU (27th November 2017)	3,634.9	3,634.9	103.7	103.7	35.1	855.1	855.1	4.3	2,243.0	1.6	2,243.0

REGIONAL COMPARISON – UGANDA SHILLING EQUIVALENT

	UGANDA	KENYA	RWANDA	TANZANIA
Customer Category	UShs/kWh	Ushs/kWh	Ushs/kWh	Ushs/kWh
Domestic Customers *(Low voltage single phase supplied at 240 volts).*	685.6	768.3	803.3	567.2
Commercial *(Three phase low voltage load not exceeding 100 Amperes)*	619.1	800.2	535.5	473.2
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A group photo of some of the O&M team at Kafue Gorge in Zambia conducting a practical in electrical machines module

Growing Skills for a Better UEGCL

By Josephat KALANZI - Mechanical Engineer-Isimba HPP

The UEGCL Human Resource Directorate is mandated with the function of skilling staff to handle immediate and future challenges. The directorate has been able to achieve this by identifying institutions both in Africa and Europe to equip the staff. UEGCL was mandated by the government of Uganda to oversee the construction of ISIMBA Hydro Power Project and to also take charge of the power plant upon its completion.

"It is necessary to train our Engineers and the Operations staff with the appropriate technical skills and exposures before commissioning this plant", Said Dr. Eng. Harrison E. Mutikanga the UEGCL CEO.

The team of 16 delegates were officially flagged off on the 23 August, 2017 to Kafue Gorge Regional Training Centre in Zambia where they have been until 3 November, 2017. Four of the participants were Isimba HPP Shift Charge Engineers, four Shift Assistants and the rest of the members in the team were Karuma HPP Operations staff.

Kafue Gorge Regional Training Centre is one of the most respectable training centres in Africa. They have got the necessary facilities to train in Shift Charge Operations and were also highly recommended by the management. The Training was sponsored by UEGCL and APUA (Association Power Utilities Africa).

About the Course Content

Josephat KALANZI receives his Certificate in Shift Charge Operations

The course content included; Introduction to KGRTC, Safety, Health & Environment Management, Electrical Machines, Power Station Control (Including study tour at VFPS), Oil Hydraulics & Water Hydraulics, Switchyard, Substation and Switchgear (including study visit to Leopards Hill & Kafue Town & West switchyards and substations), Electrical Diagram Reading, Electrical Diagram Reading, Power Systems Operation & Management (Including a study Visit to NCC), Water Hydraulics Lab Practical's, Maintenance Management, Demand Side Management, Speed Droop Characteristics of Synchronous Generators, Local Power Supply & Power Quality Management, Power Station practices. Upon completion of these modules, the team was subjected to experiences and knowledge gained.

The team was taken through both theory and practical's supplemented by study tours to the two national running plants. These included the National control Centre, three key substations plus power plant attachments. Arising from these placements, the team has since gained knowledge, skills coupled with the required exposure to handle operations and maintenance of the hydropower plant.

"With this kind of exposure, there's is no doubt that the team is up to speed to take on the flagship projects come the commissioning date in December, 2018" Said Eng. Kalanzi Josephat

Vote of Thanks

The team will forever be grateful to the management of UEGCL and APUA for this intangible asset. Special gratitude's go to the Chief Executive Office, Chief Operations Officer, Generation Manager, Karuma HPP and Operations Manager Karuma, all took the necessary preparations to make sure the training was a success.

UEGCL's O&M team at during their trip to the National control centre of Zambia.

UEGCL's O&M team at Kafue Gorge Zambia, ready for the field.

Middle background is Josephat KALANZI conducting a practical session.

"The various skills, knowledge and experiences obtained throughout the training are going to help us improve a lot on or reinforce our work practices and performance. And within the first few years after commissioning, UEGCL will have got a big return on investment", Eng. Kalanzi team leader.

A group photo of O&M team upon completing their course in shift charge operations at Kafue Gorge-Zambia

UEGCL's O&M team conducting practicals in the Electrical lab at Kafue Gorge

Josephat KALANZI poses for a photo at Kafue Gorge after Graduation

UEGCL's O&M team during their EHS (Environmental Health and Safety) Lectures at Africa Hall-Kafue Gorge.

SHIFT CHARGE OPERATIONS COURSE-10 WEEKS AT KGRTC		
COURSE MODULE		**DURATION**
1	Introduction to KGRTC	28th/08/2017
2	Safety, Health & Environment Management	28th/08/2017-1st/09/2017
3	Electrical Machines	4th/09/2017-11th/09/2017
4	Power Station Control (Including study tour at VFPS)	12th/09/2017-15th/09/2017
5	Oil Hydraulics & Water Hydraulics	18th/09/2017-22nd/09/2017
6	Switchyard, Substation and Switchgear (including study visit to Leopards Hill & Kafue Town & West switchyards and substations)	25th/09/2017-29th/09/2017
7	Electrical Diagram Reading	2nd/10/2017
8	Supervisory Management	3rd/10/2017-6th/10/2017
9	Power Systems Operation & Management (Including a study Visit to NCC)	9th/10/2017-12th/10/2017
10	Water Hydraulics Lab Practical's	16th/10/2017-17th/10/2017
11	Maintenance Management	19th/10/2017-20th/10/2017
12	Demand Side Management	23rd/10/2017 half day
13	Speed Droop Characteristics of Synchronous Generators	23rd/10/2017 half day
14	Local Power Supply & Power Quality Management	24th/10/2017 half day
15	Kafue Gorge Power Station Attachment (Shift Operation)	25th/10/2017-31st/10/2017
16	Kafue Gorge Power Station practices presentations	1st/11/2017
17	Study Visit to Kariba power station	2nd/11/2017
18	Clearance and Graduation	3rd/11/2017

Introduction to KGRTC, Safety, Health & Environment Management, Electrical Machines, Power Station Control (Including study tour at VFPS), Oil Hydraulics & Water Hydraulics, Switchyard, Substation and Switchgear (including study visit to Leopards Hill & Kafue Town & West switchyards and substations), Electrical Diagram Reading, Electrical Diagram Reading, Power Systems Operation & Management (Including a study Visit to NCC), Water Hydraulics Lab Practical's, Maintenance Management, Demand Side Management, Speed Droop Characteristics of Synchronous Generators, Local Power Supply & Power Quality Management, Power Station practices

Application of Balance Scorecard Framework in the Development of UEGCL's (2018-2023) Strategic plan

By: Barbara KAGORO & Henry LUTWAMA

1.0 Introduction
Background

Strategic Planning provides a structured mechanism by which a company achieves its medium to long term objectives. Broad objectives of strategic planning are to ensure that efforts of a company various departments achieve a common purpose. The plan is intended to be the primary tool management uses to negotiate, establish and communicate corporate priorities with stakeholders and it is the wheel that drives strategic performance within a company.

Problem Statement

UEGCL has over the last three years in its Strategic Direction 2015-17 implemented its plan which was developed with good intentions and strategies. However, in the process of implementation loopholes were identified key among which was the lack of alignment of the Goals/ Objectives with the strategic initiatives. UEGCL is in the process of formulating its strategy for the period 2018-2023, it is prudent and timely to ensure that the new strategy should be well aligned at all levels from the Vision to the initiatives. It is with this background that UEGCL targeted the alignment of its strategy adopting the BSC Strategic Planning Framework, which complement and effectively support the transformation of the UEGCL's Vision and Mission into Strategy and Action. Hence, by adopting the Balanced Scorecard tool, the Company aims at ensuring consistency of its Vision and Strategy as a way towards consolidating the UEGCL achievements and ensuring continuous performance improvement.

Training Justification

Key to the achievement of the above objectives was need for capacity building within the Company to empower staff with the knowledge and skills to effectively formulate a strategy aligned to UEGCL's aspirations. 4 champions undertook "The Balanced Scorecard Professional (BSP) certification course", hosted by the Balanced Scorecard Institute (BSI), USA.

Balanced Scorecard: What is it?

BSC is a system that strikes a balance between all aspects of an organization, it is designed to help everyone in the organization understand and work towards a shared vision. In Balanced scorecard language, the Vision, Mission and Strategy are decomposed into four different perspectives namely Financial perspective; Customer perspective; Internal Business process perspective; and Organizational capacity.

2.1 Over-arching strategy fundamentals

Strategy builds value from the Internal to the External as illustrated in Photo 1 below.

3.2 Nine Steps to Success

An illustration of the nine steps to Success Methodology to strategic planning and performance management. The subsequent sections highlight the key concepts and learnings regarding the BSC steps in question.

Step One: Assessment

It involves a review of the high level strategic elements and conducting an environmental scan. In addition, we were introduced to the Strategic Management Maturity Model that examines the level of maturity of an organization in terms of strategic management.

Step Two: Strategy

This is Scenario planning (risk identification and mitigation plans), choice of BSC perspectives and high level strategic themes, broad focus areas in which an organization must excel to achieve the Vision & results as well as change management planning.

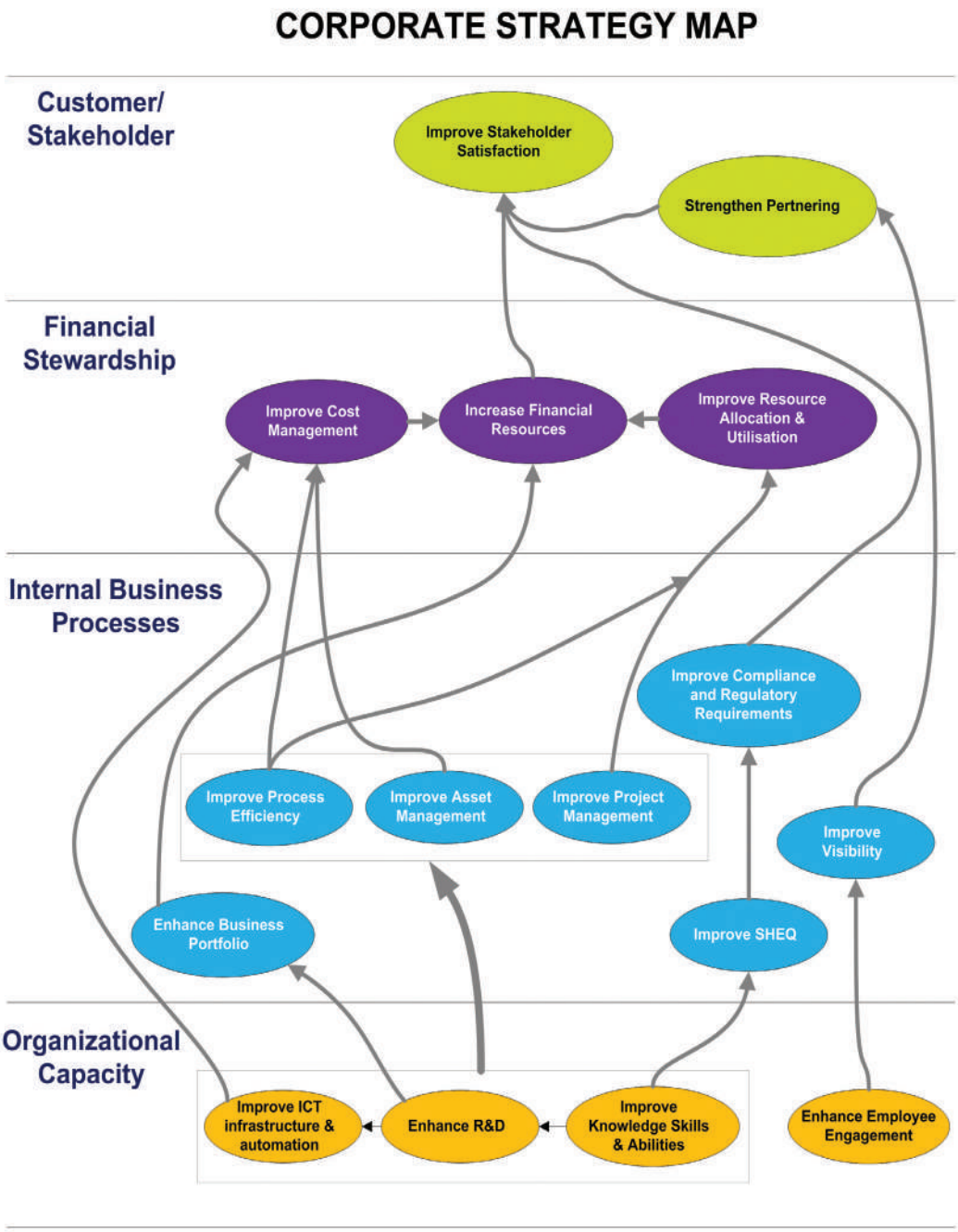
Step Three: Strategic Objectives

Strategic Objectives refer to action statements that describe what must be done on a continuous basis to be successful over time. They are created from the strategic theme results and are linked to a certain perspective and provide the basis for strategy alignment from the Corporate to Departments and individuals.

Inset Barbra KAGORO paying attention to the balance scorecard instructor at BSI-USA

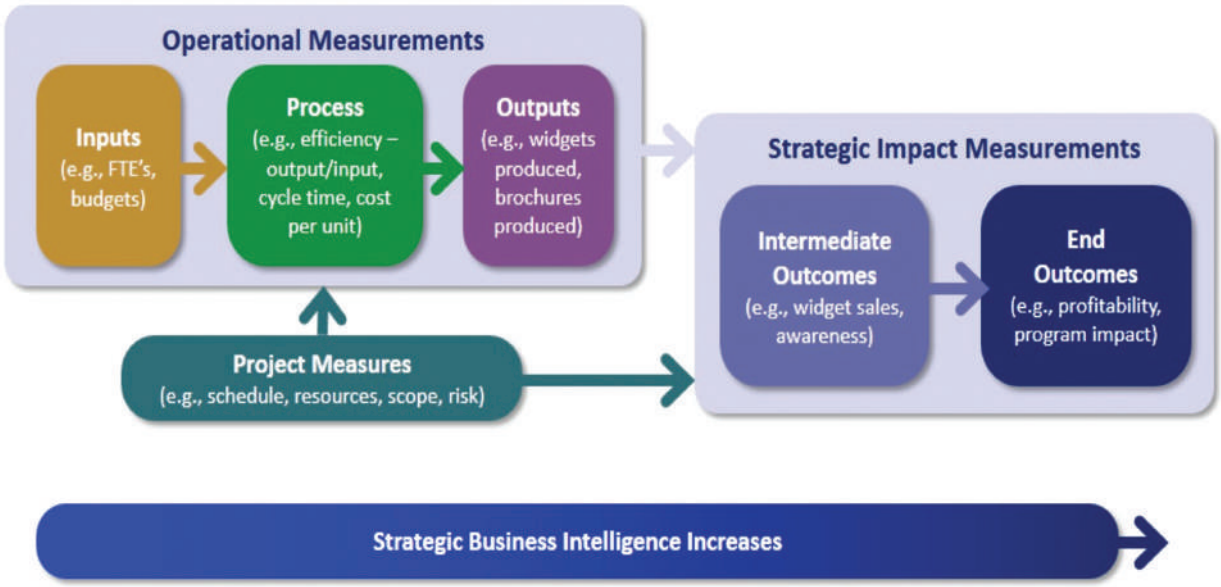
Step Four: Strategy Maps

Strategy maps form a good and simple visual representation of strategic objectives and are based on cause-effect relationships/linkages. According to the BSI, the value of the map is such that before any decision/undertaking is pursued, one major question should be answered, "Which strategic objective is it contributing to?



Step Five: Performance Measures

The institution ought to strike a balance between operational and strategic, lagging and leading indicators. While leading indicators are a precursor of future success, lagging ones measure how successful an organization was in achieving a given target.



Step Six: Initiatives

Initiatives are projects (new or existing) that have significant enterprise-wise impact and explicitly defined in terms of resources, owner, action steps, time bound, progress and expected results.

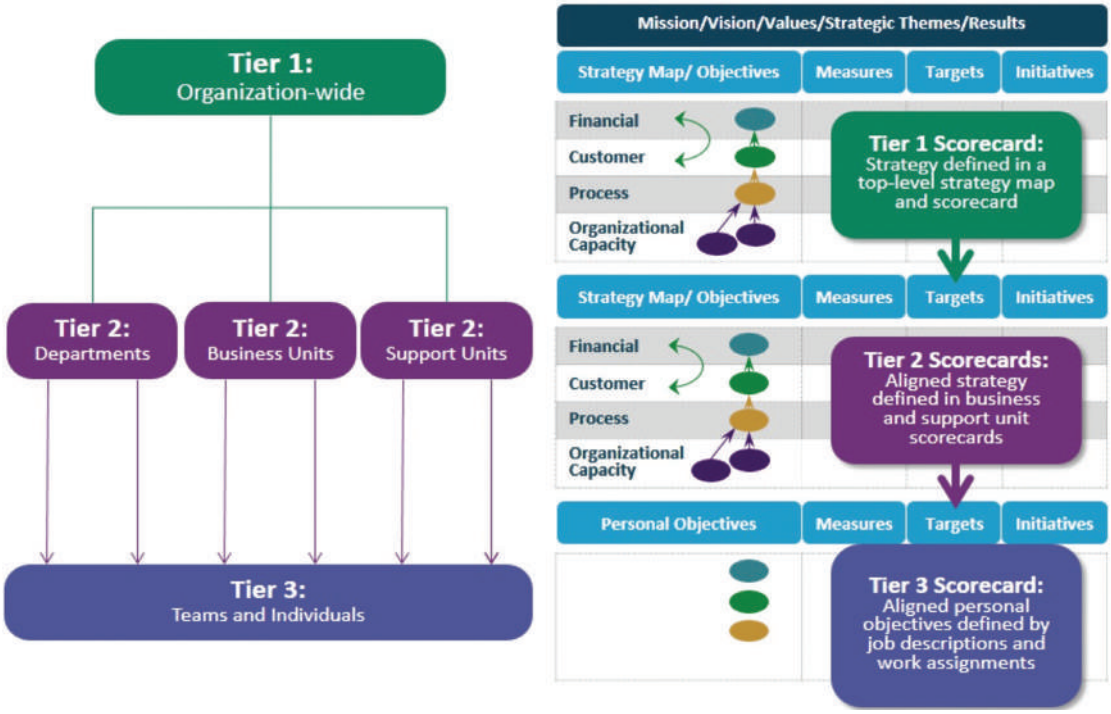
Step Seven: Performance Analysis

This step entails interpretation of performance data and communication for decision support.

Step Eight: Alignment

The biggest gap between high benefit BSC users and low benefit BSC users is in the area of alignment, "Kaplan & Norton." Alignment entails cascading the Corporate strategy to all business units/Departments and finally to individuals.

Organizational Strategy Can be Aligned by Cascading to different Tiers



Step Nine: Performance Evaluation

This involves review of progress towards organization goals and targets as well as review of the strategic planning and performance management system for effectiveness.

Way Forward

As UEGCL embarks on yet another 5 year strategic path and plan, we are optimistic that the skills gained during the BSC training shall significantly contribute to the successful design and implementation of strategy and ultimately the performance of the Company. This will be realized through: - improved strategy alignment, answering the fundamental question of whether "We are doing things right or doing the right thing" and embracing change for continuous improvement.

A group photo of UEGCL staff and some of their instructors at BSI-USA.

UEGCL staff Pose for a photo, infront of the White House USA.

Dam Safety, Operation and Maintenance

Eng. Fredrick WASIKE and Raymond Ayebare ARIHO

For two days starting August 31st to 1st September 2017,together with 3 other Engineers namely Otto Peter, Ariho Raymond, Manirakiza Wilberforce had an opportunity to attend a dam safety management, operation and maintenance training that took place at Oaklands Inn conference center in Randburg . The training was organized by PG consulting Engineers South Africa and was attended by a number of dam safety practitioners from South Africa. The training was so beneficial in the sense that it involved sharing of experience as well as practical assessments at the end of the training. Valuable lessons which we cannot trade for any other on how UEGCL can take care of its strategic assets together with recommendations for improvement are shared in this article

Why dam safety management

For whatever purpose a dam is constructed for, we learnt dam safety management is all about ensuring that the dam performs as intended and does not present unacceptable risks to public safety, property and welfare. It requires identifying structures/features that do pose risks and taking corrective actions to eliminate or reduce the risks in an efficient and cost effective manner. In most countries world over, interest in safety of dams has risen significantly due to the following.

– Growing number of aging dams all over the world. Uganda is not an exception with our first dam not only being over 63 years but also affected by concrete expansion. These two factors combined puts this dam at risk of possible failure if not carefully managed.

– Population growth in flood plain areas downstream of the dams is also another cause for worry for example if we are to take a scenario of Nalubaale dam along river Nile we are seeing quite a number of new establishments downstream like new dams, new recreation activities like rafting and as the population of the country grows the pressure for settlement also grows this results in people establishing homesteads and farms in areas susceptible to flooding in case of a dam breach.

– New hydrological information has revealed new hydrological conditions that were not taken care off in the initial designs of dams this possess a risk of additional loading on dams and can eventually lead to overtopping or sliding of a dam and ultimately leading to the failure of the dam.

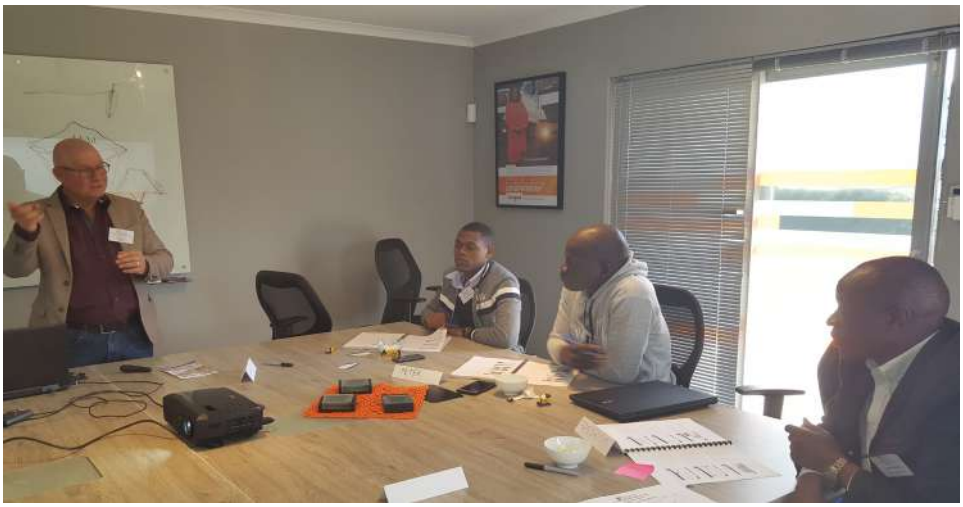
With all the above factors applicable to Uganda as well, a need to have a proactive approach to having a systems in place that can address the risk of dam failure cannot be over emphasized. Dam failure normally involves an uncontrollable release of water from the reservoir which can be destructive leading to loss of life and property to the people downstream. Some of the notable dam failures like that of Teton dam in the USA caused by piping present valuable lessons on what can possibly go wrong on UEGCL's embankment Dams like in Isimba and Kiira.

Dam bleach of Teton earth fill dam in USA

Picking lessons from such incidents, much as UEGCL has adopted measures such as zoning in the design of Isimba embankment dam, the need to and also having a robust surveillance system in place during the operation was given specific emphasis in this training

Operation and maintenance

In order to achieve an effective dam safety system, prudent practice requires that the dam owner does perform Regular operation and maintenance as well as thorough



UEGCL Dam Safety, Operations and Maintenance team receive lectures on Dam Safety in South Africa

UEGCL Dam Safety, Operations and Maintenance staff Posing for a photo moment.

and consistent inspection. All these must be practiced throughout the lifetime of a dam. The significance of maintaining proper function, cost efficiency, and compliance with safety regulations in place, can lead to the early detection of deficiencies and hence prevention of failure. Before the new dams at Isimba and Karuma are fully operational, UEGCL focus should be hinged on the following as critical elements for dam operations and maintenance.

- O&M Manual compilation and layout

The O&M manual is absolutely necessary for the efficient and safe operations of dams as it provides information on how routine inspections are performed. It also gives an insight into standard operating procedures of critical elements like spillways. Normally the life time of a dam is always greater than the life of the operator and hence the manual passes on the information to the future users of the dam. Currently these will be part and parcel of what the EPC for Isimba and Karuma is supposed to provide after construction but the quality of this will further be reviewed by an independent dam safety expert which gives a feeling of the seriousness that UEGCL is putting up as far as dam safety is concerned.

- Compilation and layout of emergency preparedness plan (EPP)

A robust dam safety management system must define the response required in the event of a dam related emergency. This plan helps to provide actions which facilitate public safety by notifying all appropriate authorities, Provide information to all stakeholders to allow for an informed evaluation to be made before and during emergency events. The plan also provides action for foreseeable flood emergencies affecting safety of the Power Facility and affected property downstream. It further illustrates actions to carry out repairs and reduce the impact of any such event where possible. UEGCL currently has individual emergency preparedness plans but through interactions in this training we discovered that a master emergency plan for all cascaded dams starting from Nalubaale up to Karuma should be developed and then the individual EPP's should supplement the master EPP.

- An established instrumentation Plan

Instruments such as vibrating wire piezometers, stand pipe piezometers, surface monuments, strain gauges, joint meters and inclinometers are used for the monitoring of concrete and embankment dams. All these instruments are being installed and monitored in UEGCL's new sites at both Isimba and Karuma HPPs. The ones that were installed in at the old dams of Nalubaale and Kiira dams are being monitored regularly and UEGCL ensure that they are in use through their concession supervision.

It goes without say that every dam faces a risk of possible failure and it's the Duty of engineers/technicians in operation and maintenance of dams that play a very important role in minimizing this potential hazard.

UEGCL has taken the initiative to have its staff trained in dam safety management with an intention of having a competent team that can effectively monitor the new and existing dams. This initiative will ensure that the structural and functional integrity of these dams remain sound.

Executing UEGCL's New Role of Projects Implementation and Contracts Administration.

By Andrew AMBAZIMAANA-Senior Civil Engineer, Isimba HPP.

UEGCL was incorporated as a company in March 2001 to operate and maintain the formerly UEB's Generation Stations at Nalubaale(180 MW) and Kiira Power Stations(200MW), and to complete the construction of Kiira Power Station and in 2003, the operation and maintenance of Narubaale and Kiira Power Stations was consessioned to Eskom Uganda and UEGCL's role was to monitor the concession.

Implementation of the two flagship projects of Isimba HPP and Karuma HPP saw UEGCL being appointed the implementing agency for the hydro power plant component and its roles stipulated in a memorandum of understanding signed between UEGCL, UETCL and MEMD. This memorandum of understanding was later enhanced with a deed of assignment which was handed over to UEGCL on 3rd November 2016.

This implied that our role as a company had to shift from only monitoring concession to developing and implementing power projects. This has seen the company hire a team of employees to take up this new role. The new role however requires the company to build capacity of employees in the field of construction management especially contracts administration.

Accordingly with a sponsorship from HNAC Technology Company Limited and UEGCL, I was able to attend a training in China titled " Technologies and Construction Management of Water Conservancy and Hydro Power Projects" from 14th to 27th May 2017 in Changsha, China.

Photo 1: At the International Centre for Small Hydro Power(ICSHP) in Changsha City, the venue for the training

The 7th Annual International Workshop on Technologies and Construction Management of Water Conservancy and Hydro Power Projects was organized by United Nations Industrial Development Organisation(UNIDO) International Center for Small Hydro Power Changsha Base & Training Center of Chinese Society for Hydropower Engineering) in partnership with ASEM water resources research and development centre.

The objectives of international workshops organised by UNIDO ICSHP Changsha Base and Training Center are meant to train professionals in the industry of small and medium hydropower in developing countries by helping participants understand the functions of construction management of hydropower projects through presentations, lectures and practices and to exchange and

Inset, Andrew AMBAZIMAANA-Senior Civil Engineer Isimba 183(MW) HPP ready for the conference in China early 2017

share experience from different countries on development and construction of hydropower projects.
The training which lasted for two weeks from 14th to 27th May 2017 attracted a number of participants from Russia, Burkina Faso, Ecuador, Kenya, Kyrgyzstan, Nepal, Pakistan, Samoa, Sri Lanka, Uganda, Vietnam and Zambia. The training workshop comprised of four major activities; presentations from facilitators, factory visits, technical exchange presentations and site tours.
I presented a paper on the status of hydropower development in Uganda highlighting on functions of UEGCL, the legal frame work in Uganda, the licensing framework and cycle, the status of hydropower in Uganda, the potential sites and opportunities for investment in Uganda

The participants were first taken through the over view of a hydro power station including principal components of a power plant such as the fore bay, penstock, powerhouse, turbines, generators, transformers, governors and substations. The mode of selection of turbines was very well elaborated indicating that the decision of which type of turbine to use mostly depends on two factors; the water head and the water discharge. Important to note is that the three largest power stations in Uganda have Kaplan turbines because of low water heads and the same applies to Isimba Hydro Power Project. Karuma HPP with a high gross water head of 70.0 m is however an exception because it will use Francis turbines.

The second presentation was about functions of construction management of hydro power projects. Putting aside the complexity of hydro power projects, it was noted that construction management principles remain the same across the board. Building and managing a team of different experts is key in construction management of big infrastructure projects. This aims at achieving the three most important project deliverables of cost, time and quality.
The facilitators ably took us through five functions of construction management.;

Cost Management

A group photo with some of the participants from the different countries who attended the conference in China on mini hydropower stations.

It is important to note that the main causes of project failures can be attributed to cost estimation failure and management failure. Inadequate project formulation such as poor field investigation, inadequate project information and bad cost estimates affect project implementation.

This function involves handling schedule of values, change order control, trade-off studies and claims for cost among others. It involves monitoring cost over runs and minimizing variations. Cost analysis of every change order or instruction ought to be done to ensure projects are delivered with estimated cost.

Time Management

Project failures can result from deliberate attempts made by manipulators during feasibility stage by incorporating inaccurate time with a view to secure business or start a project. This inaccuracy can lead to unrealistic objectives and thus create problems during the implementation stage. The schedule of project activities should be given due attention prior to construction and regular schedule analysis undertaken to compare actual progress to planned progress. During schedule analysis priority ought to be given to critical path activities whose delay affects the project duration.

Quality Management

Due to the uncertainty of and complexity of construction management of hydro power projects and variability within project environments, quality should be closely scrutinized and controlled throughout each stage of construction. The facilitator highlighted three factors which contribute to difficulties in quality management; first the quality control criteria for individual components are scattered in different national, industrial and local quality control codes for construction. Second it's difficult to identify the responsibility for quality control because project participants form a complex web of relationships. Third, the focus of quality control is always put on the final component with much less attention given to the process of construction. These problems greatly increase the difficulties of construction management and contribute to quality defects. Quality Assurance and Quality Control should be implemented on any construction site with attention given to test and inspection procedures.

Safety Management

In a high-hazard industry like hydro power construction, safety is an investment that provides real benefits. A safe work environment helps to keep skilled employees on the job and projects on track by reducing accidents that result in injuries and

schedule delays, while also reducing the risks of litigation and regulatory action. A strong safety record enhances a company's reputation, makes it more competitive and helps to manage insurance costs over time.
Fostering a successful safety culture, however, is a company-wide effort that requires commitment and participation from the Chief Executive Officer to Project Managers, Officers, Technicians and Support Staff. This commitment should extend to the selection of subcontractors who also embrace a strong safety ethic.

Contract Administration

Contract administration is mainly about ensuring that construction is done in conformance with contract documents. This function involves on site communication, project site meetings, field reporting, monitoring progress and quality of work, determining if the works are in general conformity with the contract documents, interpretation of the contract documents, providing Supplemental Instructions (SI), reviewing shop drawings and submittals, preparing change orders, determining substantial performance and reviewing different warranties
We also had an opportunity to visit three hydro power stations in Long Tan town; Liujiaping Hydropower Plant(16.5MW) with a water head of 507m, Yumitan Hydropower Plant(12.6MW) with a water head of 58m and Xupu Xinqiao Hydropower Plant(2.97MW) with a water head of 33m. Xupu Xinqiao power plant was being upgraded from 2.97 MW to 6.07MW by increasing the efficiency of the turbine generators and building new sets of water diversion system from the dam to the fore bay.

Photo 8: A group photo taken at Xupu Xinqiao Hydropower Plant switch yard sub-station (2.97MW)
The training was greatly beneficial and educative .It enhanced my skills and knowledge in managing construction projects especially hydropower projects and I have no doubt this will be helpful as I execute my duties at Isimba Hydro Power Project.

I am greatly indebted to HNAC Technology Co. Ltd and Uganda Electricity Generation Company Limited for the sponsorship that made the training in China possible!

Generating for Generations!

Andrew AMBAZIMAANA with Colleague wraping up the China trip.

Construction Quality Control and Site Inspection at Isimba HPP

By Angelo SEMAGULU-Senior Civil Engineer ISIMBA HPP

Photo 1: Group photo with Facilitator and some participants

Given UEGCL's Strategic direction of Operating Isimba it is rather very wise to ensure that QA & QC is critically monitored. Poor Quality of works will most likely increase the Operation and maintenance cost which would increase the price of electricity to the final consumer. To ensure conformance to project designs, standards and other elements of the civil works in relation to international recommendations, UEGCL found it worthy to send the author for Construction Quality control and site inspection training at Projacs Academy one of the leading Project and Construction Management training, development and service providers in the Middle East for a training in Quality Control and site Inspection. The main objectives of this training therefore was to enrich/equip participants with: understanding of fundamentals and

Photo 2: Participants listen to facilitator during training

concepts of QA/QC in Construction field, the boundaries of QC role and the tools and techniques for site inspection, Implement Quality Plans according to client requirements and applicable standards.

Increasingly Quality Assurance and Control has become elusive to many contractors so during the training we basically focused on how to improve and sustain quality on site, a lot more emphasis was directed towards quality concepts and Fundamentals, Quality Control which covered adherence to standards to achieve desired products as expect by customer , Quality Assurance covered part of quality management focused on providing confidence that quality requirements will be fulfilled , Quality Management System are implemented to ensure there is a strategic choice influenced by the varying objectives, needs, and products and services provided. The introduction to Defects exposed participants to what qualifies a product to not forgetting how to prevent them. We later closed off with Cost of Quality concepts and its' implementation, Quality Implementation in Construction Field.

In that Regard at Isimba we have ensure comprehensive understanding of Employer Requirements in relation to reference standards for design and construction work including but not limited to the materials used and methods applied.

One other element emphasized during training was the need to deploy the QA &QC team during the very early stages of the project to ensure suitable performance

Training also emphasized the need of accurate and useful information collection during construction is an important part of maintaining quality performance. We have since ensured all information e.g. lab test are properly scrutinized as they will be reference for future projects.

Training further spelled the Aspects of quality. These aspects drive quality implementation, any laxity will derail the Quality Aspects of the Project as has been the case in Isimba with the previous Owner's Engineer.

The key Lessons learnt in here mainly We have therefore ensured continuous monitoring of EPCC during implementation of these aspects/approaches in which we have placed a lot of emphasis on: controls, job management, defined and well managed processes and hold points, performance, and identification of records.

We have now a well-developed checklist for concreting on site to help us curb any nonconformance beforehand. A daily site diary has been adopted as a measure and record of any non-conforming test procedures. We have also since ensured a structured program in which Contractor submits a schedule of his weekly Quality control program. In this regard engineers are tasked to follow up on Quality of specific aspects for sections at which they are deployed to their logical conclusion. This has been effective as members have picked testing regime non-conformances to standards.

The next training mainly focused on Building and architecture, Construction and PM contracts these largely focused on the contract documentation which describes the design that the contractor is being paid to construct, a specification describing the

materials and workmanship required, Construction contracts as QMS, Roles of Engineer, Employer, and Contractor. Emphasized extra care should be taken to be taken for Buildings and Structure during structural design.
In this section we looked at the procurement process, and also review the three basic selection methods. Competitive Bidding, Competitive Negotiation, Direct Negotiation. The selection Criteria was further broken down into Pre-Qualification Technical Evaluation, Financial Evaluation covering the main basics against which a successful bidder is chosen.

As a precursor to implementation a number of other activities have to be undertaken these include: Procurement, Supplier selection, Supplier evaluation, Verification of supplied items and services, Contractor's responsibilities. The facilitator put a lot of emphasis on verification/Inspection of supplied items and services. Inspection involves appraisal, examination, measurement, testing, gauging, and comparison of materials or items.
In brief inspection is meant to determine if the material or item is in proper quantity and condition, and if it conforms to the applicable or specified requirements. Inspections are generally divided into three categories: Receiving inspection, In-process inspection and Final inspection.
In quality control the role of inspection is to verify and validate the variance data;.

One of the lesson learnt and enforced is Critical witnessing of test and ensuring that procedures as stipulated in standards has been one other major key aspect that has been enforced since taking over as interim Owner's Engineer. We also review QC results in relation to raw data captured during tests.

One of the modern ways of inspection is by use of non-destructive tests (NDT). Defined as quantitatively measure/Inspect some characteristic of an object without doing harm.
We also explored quality of Conformance in construction site, Perfect construction concepts, Sampling and inspection plans, disposition of nonconformities, Control of measurement methods and devices. I
We have ensured critical enforcement of standard building practices. Care has been taken to ensure the basic engineering practices have been enforced in the review of structural components of the Mechanical workshop and switch yard control building.
Relating all the above, the Author and Isimba HPP at large have benefited in a number of ways:

We have been keen on ensuring the contractor submits work method statements which are reviewed and approved. A lot of emphasis at the moment is driven towards ensuring that contractor follows approved method statements which still a challenge but with a number of technical meeting and onsite instructions a certain level of success has been achieved.

As the interim OE we have ensured Quality Assurance during our many coordinated unscheduled site visits increasingly keeping track of quality of progress of works on a step by step basis since some works may be inaccessible during final inspections. This has enabled some non-conformities to be arrested at a much earlier stage (Having eyes on the ground).
Progressively it has become routine that Contractor presents Compressive strength results, Bearing capacity test and any other results for previous/ successive sections before undertaking final inspections for new sections. Any nonconformance in regard to quality can also equally be pointed out.

The issue of sampling of materials had largely been one of the most critical over time. The frequencies and nature of samples taken back then were biased but with continuous and repetitive random sampling as spelled out in the standards we are more certain about the results obtained as result of the proper sampling procedures.
Dispositions of non-conformities: There is normally urgent need to dispose of any non-conformities. Corrective Action in that way organizations must take action to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions must be appropriate to the effects of the nonconformities encountered. As the interim OE at Isimba we have adopted nonconformance reports NCRs unlike previous OE. They are issued to the contractor for non-conformances with the necessary corrective actions. In the nonconformance report it is clearly noted which provisions of the contract the contractor has failed to adhere to.

In conclusion, Construction tradition must have a robust quality management program as it is critical to the overall success of a construction project. Effective programs create a processes for clarifying standards and requirements, establish means and methods for managing the process, defines responsibilities and accountabilities.

A Stitch in time

BY Apolo SEMPANYI

EHS Officer Karuma HPP

We are all well versed with the old adage but how many times do we give it thought or apply in our daily lives? In occupational safety and health prevention is better and cheaper than reaction (cure). Planning and preparation go a long way in ensuring safety in the workplace. Training and capacity building is one of the proactive ways to manage safety. In August I attended IOSH Managing Safely course at RRC Middle East training center in Dubai.

The Institution of Occupational Safety and Health (IOSH) is the world's leading professional body for people responsible for safety and health in the workplace whose main role is to support safety and health professionals. IOSH acts as a champion, supporter, adviser, advocate and trainer for safety and health professionals working in organizations of all sizes. It gives the safety and health profession a consistent, independent, authoritative voice at the highest levels.

Why Businesses Choose IOSH Managing Safety

- Course approved by IOSH, an internationally recognized health & safety body
- Certificate issued by IOSH, guaranteeing quality of training and delegates' achievement
- Improved productivity & profitability through:

-Reduction in accidents and safety incidents

-Improved staff satisfaction through increased safety awareness throughout the organization

- Enhanced reputation with customers and suppliers
- Reduction in costs arising from avoidable insurance claims and legal fees.

Main objectives of the training were:

- To give managers and supervisors an understanding of everyone's safety and health responsibilities in the workplace.
- To enable managers and supervisors to recognize how they can influence, control and monitor risk to improve safety and health issues in the workplace.

LESSONS LEARNED: This course helped me to acquire an understanding of:

- The key reasons to manage health and safety in the workplace.
- Identification of workplace hazards and risks, their impact and how to manage them.
- Assessing, reducing and controlling risks in the workplace.
- Characteristics and benefits of an effective health and management system.
- Emergency response to incidents and have to evaluate them.

KEY LESSONS LEARNT

1. As a core value of UEGCL, safety hasn't been given much attention. A proper and effective health and safety management system has to be implemented. A health and safety policy is a must and long overdue. This shows commitment and gives direction to health and safety systems.
2. As UEGCL builds its brand, health and safety are key ingredients. Many strong brands are hinged on good health and safety practices and culture. Investing resources and time in health and safety will boost the UEGCL brand.
3. As UEGCL strives to be the leading power producer in the great lakes region, it should be benchmarked against the best. ISO 14001 and OSHAS 8001 certification are a must.
4. IOSH and NEBOSH certification for staff boosts the company's reputation and ensures international standards of doing work.

The Dubai Experience

Dubai is the gem of the Middle East where tradition intersects with modernism and opulence; and where the city's energy is palpable. From its architectural marvels and modern engineering feats to the big malls and organized streets with sleek cars make the heat and humidity bearable. The tallest building in the world, the dancing fountains, the 7 star hotel, man-made islands the list is endless…. And what's Dubai without the desert. Offering unparalleled sunsets that cast a glow over the warm sand, henna designers, belly dancers, camels, large desert vistas, a barbecue of traditional Arabian fare and sweets all make visiting the desert in Dubai unforgettable.

Implementing Safety as a Core Value and an International Standard

By Ivan ZIMBE
Control & Instrumentation Engineer Isimba HPP

Safety, the core value

Uganda Electricity Generation Company Limited (UEGCL) thrives on a collective commitment to embrace a safety culture on all projects and operations. Safety as one of the core values of UEGCL is upheld throughout the organization. The first induction at any of our Hydro-Power Project site is about safety, but what is this safety?

Understanding Safety

From a French word sauf, safety is the state of being "safe" and the condition of being protected from harm or other non-desirable outcomes in a given environ. Safety can also refer to the control of recognized hazards in order to achieve an acceptable level of risk. The hydropower construction site is an uncontrolled high-risk environment with hazards ranging from large volumes of water, falling objects, sharp objects and great heights. Now that the risks are identified, what do we do at our HPP's to mitigate these risks?

Safety Implementation

Personal protective equipment (PPE) denotes to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection. PPE is equipment that will protect the user against health or safety risks at work. Items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear and safety harnesses are PPE. At UEGCL, it is mandatory for one to always have his/her PPE on when accessing the project sites. This is as well authoritatively echoed by any safety officer situated at the site.

"These are the first words that welcomed me to Isimba HPP site, over a cup of tea where a toolbox talk is usually conducted during the session of breakfast".

UEGCL has implemented her first step towards a safe working environment through awareness, procuring of protective gears for employees and further implementing safety as a core value. This has been done in accordance with the strategic goals of UEGCL in 2018 project registration of OHSAS 18001 Occupational Health and Safety Management standards, but what does this entail?

Safety, a joint responsibility, and the organization's strategic goal

You are responsible for your own safety and the safety of the people around you. At our HPP sites, safety is every individual's responsibility. Organizational health and safety management is a process that stems from:

- Planning which includes establishing the objectives and processes necessary to deliver results in accordance with the organization's OH&S policy
- Doing which means implementing the process
- Checking understood as monitoring and measuring performance against OH&S policy, objectives, legal and other requirements, and report results
- Acting, which involves taking

actions to continually improve OH&S **Performance**

UEGCL is rolling out an OH&S policy that will imprint the safety culture permanently to its employees. Safety is as simple as ABC, "Always be careful". Your first success is to be careful.

5 tips to get your health back on track

By Dr. Paul KASENENE

Health is everyone's desire. Nevertheless, not all of us are necessarily healthy because of some choices we make that are not so favorable to our health.

Whether you are on track with your health or whether you need some help, I would like to share five simple tips that can help you to continue with your wellness journey, or that can contribute to getting your health back on track.

1. Start your day by drinking at least 500mls (2 glasses) of water and then drink plenty of water throughout your day.

Starting each day with water is one of the best things you can do to boost your health. Most of the detoxification in your body happens when you sleep, and mostly at night. The drinking of water first thing in the morning helps to support the elimination of any toxins and toxic waste that needs to be removed. It also contributes to keeping your bowels moving which also supports the further removal of waste products. I recommend that you have water in your bedroom so that when you wake up in the morning, it is right there for you to drink. You are less likely to drink water in the morning if you have to walk out of your room in search of it.
You should then try to go on and drink up to at least 2 liters of water per day. I recommend drinking water half an hour before meals and then 1 to 2 hours after eating. Try and minimize the amount of water and fluids that you drink as you eat. To find out an estimate of how much water you need, visit my blog on my website at https://www.drkasenene.com/blog

2. Get a 5 to 7-minute body stretch each morning

Many of us find that making time for exercise can be challenging in this busy and demanding world that we leave in. However, if being fit and healthy is really your priority, then finding only 5 to 7 minutes in the morning before you start your day to stretch your body and keep it vibrant shouldn't be too much to ask. In fact, this is quite important because stretching improves blood flow and circulation to the whole body and especially to the brain which can, therefore, improve your mental sharpness and focus. And this is even more crucial in the morning after you have been asleep for several hours when you need to concentrate more as you begin your workday.
Stretching also has many other benefits such as improving your energy levels and reducing feelings of lethargy that you may sometimes feel in the morning even after sleeping for several hours.
Stretching has also been shown to improve your posture especially for people who have desk jobs and sit a lot throughout the day.

But how exactly do you stretch? Simple movements like bending and touching your toes, making circular motions at the shoulder and wrist and any other creative movements that you feel can stretch your muscles and body can be done. What is most important is that

you stretch. Over time you can put in more time to learn specific exercises that will be of more benefit to you, and that can reduce your risk of injury.

Remember to be careful and not to overdo it. Listen to your body and improve your ability to achieve more efficient stretching over time.

3. Eat something raw at each meal

A lot of the health-producing compounds that are found in most foods are sensitive to extremes of temperatures but especially to heat. Cooking food at high temperatures and even processing and refining foods actually can denature many of the vitamins and phytonutrients found in fruits and vegetables and also kills enzymes and bacteria that are found in food that is necessary for digestion, assimilation and even utilization of other nutrients for health purposes.

The actual recommendation is that 50 percent of all food consumed should not be cooked or should be eaten raw (When I say raw, I don't mean food that is not yet ripe – like a green mango - I mean food that is not cooked or changed).

While it may not be easy at this point for many people to adjust to 50% raw food, ensuring that you have and eat something raw at each meal is realistic and practical. For example, have two servings of fruit for breakfast, have some avocado, nuts, seeds or a fresh vegetable salad with your lunch and dinner or even add a glass of a freshly prepared fruit/vegetable juice or smoothie.

The idea is to have a good amount of your meal raw and if possible eat the raw food first before any cooked food.

4. Go to bed early and aim to get at least 7 hours of sleep

Many people do not realise, that getting a good night's sleep is one of the secret ingredients to great health.

It is so vital to health, that even if you do everything else right if you do not get enough sleep or good quality sleep,

you could still be at increased risk for chronic diseases like type 2 diabetes and heart disease.

The recommended amount of sleep is at least 7 to 8 hours of continuous sleep each night. If you are getting less than 6 hours of sleep per day, this is not helping your health. Your body needs time to rest and recover from the activities of the day and prepare for tomorrow, so be sure you're getting the proper amount of sleep.

The time you go to bed also matters a lot. The body has a biological clock that follows the rhythms of nature. This biological clock has been primed to expect you to go to bed a few hours after sunset, at about 9 pm. This is the time that your body actually would like to commence healing, detoxification and other vital processes that sustain and restore health. The thing is the body will only start these processes once you sleep. Going to bed late means that you miss out on many of the benefits that sleep provides.

One will ask that if I sleep later but still get my 7 to 8 hours of sleep, isn't that ok? The answer is No, that is not ok. Again, your body knows that when the sun rises, the part of your day that is filled with activity is about to begin. Shortly before sunrise or round about the time of sunrise, many of the benefits that come with the sleeping stop in preparation for your rising whether or not you go and sleep for more hours to make up the recommended amount of time.

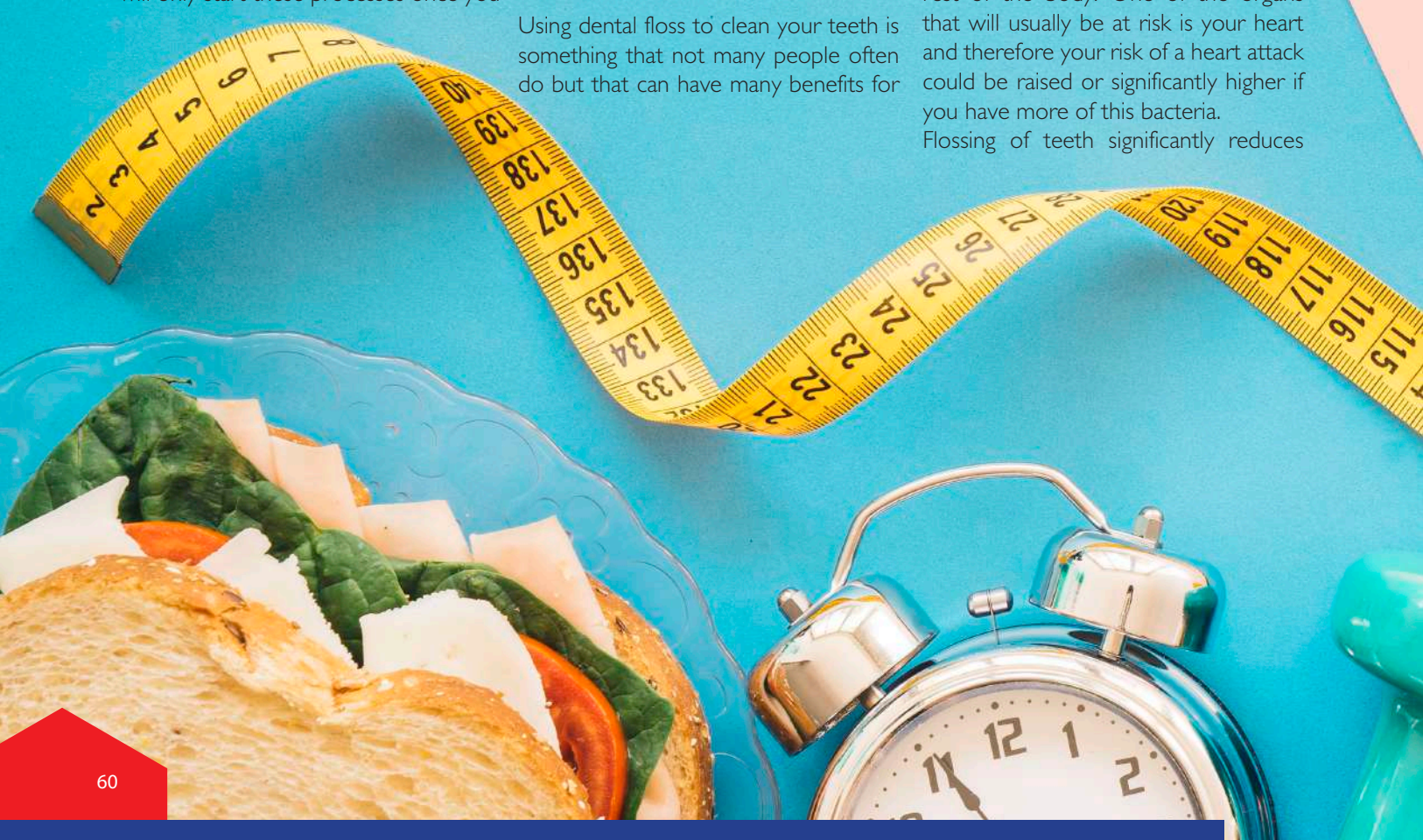
It is therefore important to try to go to bed early, no later than 10 pm and get at least 7 to 8 hours of sleep.

5. Use dental floss to clean your teeth at least once daily

Using dental floss to clean your teeth is something that not many people often do but that can have many benefits for your health.

The most obvious is that it will improve your dental health and significantly reduce your risk for cavities and dental diseases. This is because dental floss can reach areas between the teeth and remove bacteria and lodged food particles that even the best toothbrush or brushing technique cannot match. For this reason alone it is vital.

But also, we now know that there is a solid connection between the health of your mouth and your overall health. People who have more bacteria between their teeth and in their mouth are probably not flossing or not flossing as much. Research shows that higher levels of bacteria in your mouth – worsened by diseased gums may find their way into your bloodstream and release inflammatory chemicals which can cause inflammation throughout the rest of the body. One of the organs that will usually be at risk is your heart and therefore your risk of a heart attack could be raised or significantly higher if you have more of this bacteria.
Flossing of teeth significantly reduces



your risk for this bacteria build up and therefore can reduce your risk of a heart attack, cardiovascular disease, and inflammation in your body. Amazing.

One bonus is that flossing your teeth will definitely help to reduce bad breath.

Take time to look up the best way to floss your teeth.

BONUS TIP: Practice Gratitude

The tip that I feel is the most important to health is this one. Practicing gratitude. Why is this so important?

Most of our body's ability to fight disease and stay healthy is regulated and controlled by something we call our immune system. The immune system's ability to respond to danger and fight disease is also dependent upon having the right immune supporting chemicals in the right quantity and available at the right time.

We know that stress and a negative mental state have the ability to depress our immune system but what many people don't know is that a positive mindset and gratitude has the reverse effect.

When you say "thank you" and you really mean it, your brain releases chemicals such as serotonin, dopamine and other chemicals that act as immune boosters, antidepressants, stress relievers and anti-inflammatory substances. It is simply amazing.

Gratitude interventions have been shown to result in improved sleep, more frequent exercise and stronger cardiovascular and immune systems.

And guess what, there is always something to be grateful for. If you honestly want to reduce your risk of diseases linked to inflammation such as cancer, diabetes, high blood pressure, autoimmune disease and even to reduce the effects of stress and depression, I strongly encourage you to practice gratitude in your life.

How can you practice gratitude?

Find anything that works for you. However, I recommend that every morning before you get out of bed and every evening before you sleep, take a moment and recall 20 to 30 things to be grateful for. Go through them one by one. Say them out loud or just think about them. But the power is not in what you are thankful for, the power is the feeling of gratitude. So feel the appreciation for each item on your list.

If you are struggling with finding something to be grateful for, begin with the ability to read this. Then think about the fact that you are alive, family, friends and so forth.

What are you most grateful for in this moment? Right here, right now. Seriously, stop and ask yourself

Remember that there is always more to be grateful for than to be unhappy about. And as long as that remains true, then simply by practicing gratitude, you tip the balance in your favor regarding health over disease.

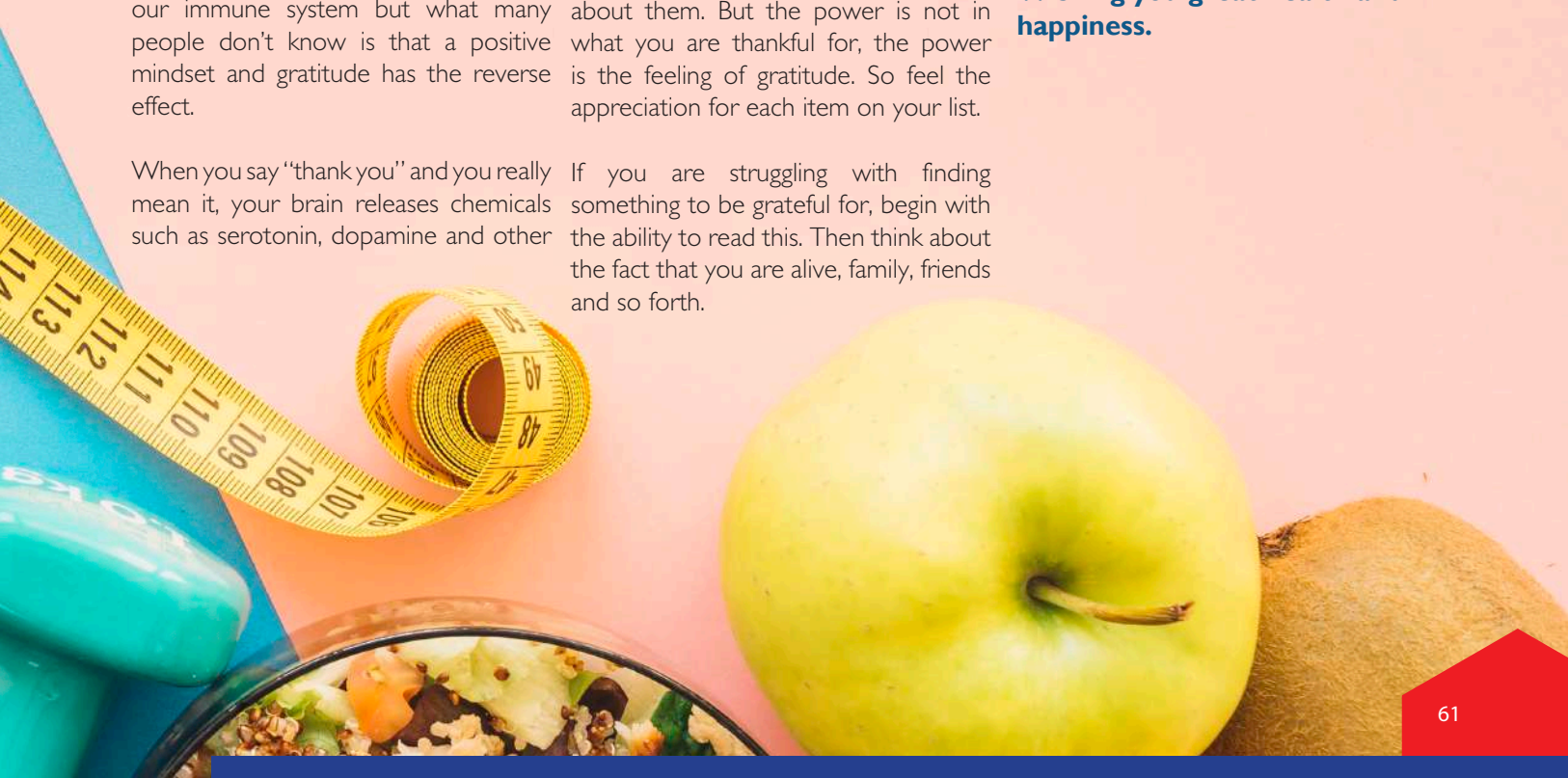
I really do hope you can integrate this into your life.

I hope these five tips and especially the bonus tip will make an impact on your life and your health. The key is in the application. You must apply them to see the benefit.

The Writer is a Wellness Physician. At WellCare Wellness Clinic – Bandali Rise, Bugolobi
www.drkasenene.com

Please also follow me on twitter @paulkasenene and visit my website at https://www.drkasenene.com

Wishing you great health and happiness.



The Three-Gorges Dam: Nothing as big; yet Big on Size, Big on ideas, big big big!

By Simon KASYATE - Corporate Affairs Manager

Thanks to Google, you can know 'all' about a place you have never been to; an installation you have never visited and people you have never met. That's the power of information, literally, at your fingertips! But make no mistake, there is nothing as informative and enlightening as visiting a place or installation or meeting people – you realise for the most part that they are far from any mental image or description by others. After all, we all have our unique ways and means of perception.

And that's exactly how humbling the experience of visiting the Three Gorges dam in China is, as compared to reading text about it or watching documentaries and even movies about it.

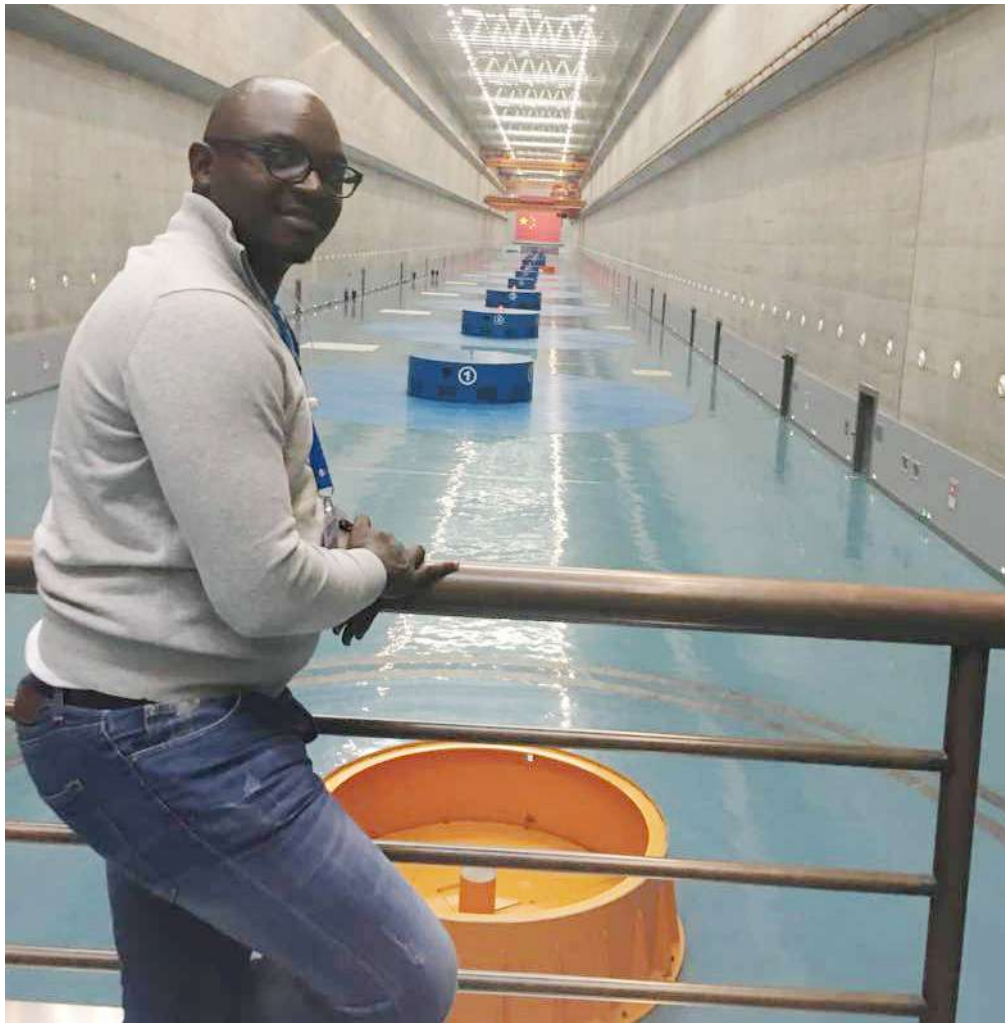
What's agreed across board from those that have visited it or those that get to know about the place from as many sources; it is a gargantuan

The down stream section of the THREE GORGES Dam

installation! In our local context, the largest hydro power station is Bujagali with 5 turbine units, each with an installed capacity of 50MW. Karuma is feted to be the biggest in the country once commissioned. Six turbines, each with an installed capacity of 100MW. Now that's huge, compared to Bujagali; no? Now if you think Karuma is huge, wait! At Three-Gorges dam, there are 34 turbine unites! Yes, 34! Now compare with the six at Karuma. But that's not all.

The total installed capacity at Karuma is expected to be 600MW, for the whole dam project. Now hear this; at Three-Gorges dam, 32 of the 34 turbines have EACH an installed capacity of 700MW! Take a moment, breath and take this in! It means that one turbine at Three Gorges is larger (in terms of capacity) than our biggest dam! Well, that's what it is.

However, to make such comparisons, without putting into context the sheer size of the river on which this dam and ours are located is to be disingenuous. Built on the Yangtze



Members of Parliament on the Natural Resources Committee, led by the Chairman Hon.Alex Byarugaba (4th left) and Projects Steering Committee Chairperson, Eng. Badru Kiggundu (4th right) pose outside the THREE GORGES Dam during a visit to China in November 2017

River, The Three Gorges Dam is the world's largest power station in terms of installed capacity (22,500 MW). It started full operations in 2012 as hydro power plant while the shipping component wasn't ready until December 2015.

We were taken on this jaw-dropping experience of visiting the Three Gorges dam by China Water and Electric Corporation CWE, the contractor for the 183MW Isimba hydro Power plant on the R Nile. CWE is a subsidiary of the Three Gorges corporation.

Beyond the operational and architectural fascinations at this place, one will be impressed by the number of tourists visiting the location, both local and foreign. There is zoning depending on the tour scheme booked, including a circuit for VIP guests. Luxury Ships also ply the upstream and downstream parts of the dam allowing for a panoramic view of the dam depending on which side of it you are located. The merchandising at the tourist centre is so captivating that you will barely walk out empty handed.

And that's one major lesson we carried home. For Karuma hydro Power project which is an architectural marvel in own right (we are talking about an underground power house and a mosaic of tunnels, a visitors centre on the surface is envisaged. This shall provide visitors with an experiential tour of the power plant as well as take them down memory lane of what the location looked like before and during the construction of the dam. A merchandise shop with dam memorabilia is also envisage, so when you visit Karuma dam; you may walk out a proud owner of a sweater with inscriptions like 'I have been to Karuma; you?''

Such installations provide learning to o all sorts of people from technical folks to tourists to conservationists to politicians to everyone! Talking about politicians, the Three Gorges project could not have taken off it did not take a deliberate political decision. Prior to start of construction of this mega structure, The China National People's Congress went to vote in 1992: out of 2,633 delegates, 1,767 voted in favour, 177 voted against, 664 abstained, and 25 members did not vote. In our case, the National Development Plan III still informs the decision on the next big projects.

Having visited this installation in the company of Ugandan legislators on the Parliamentary committee on Natural Resources, and observing as they nodded in approval of what political alignment and service for co try above all other consideration has bestowed on China in their project; we count on their support as we strive to bring to life many other power generation projects in the medium and long term.

Dotcom Trends: The Power of a Selfie!

By Noella NSABA - PR Assistant

From the days of Joseph Nicephore Niépce in 1816, photography has not stopped to astonish. From negatives to high definition memory digital graphics, the revolution is continuing. Advancement in technology, more especially in telecommunication has seen generations and generations of phones made with convenience to take and store high-quality photographs. The word selfie came to life around 2004 with its hashtag first appearing on Twitter. A selfie is a photograph one has taken of oneself, with a smartphone or webcam, often used for social media. Taking this type of self- portrait became easier in 2010 when Apple introduced a front-facing camera on its iPhone series and no doubt, Android users can never relate. As the saying goes that a picture speaks more than a thousand words, so how many words exactly does a selfie speak?

Muhammed LUBOGO, Cathy KARUNGA, Prossy NAKAUKA, and Rita BECHO enjoying a selfie moment.

This is how we do selfie ladies, Noella Nsaba-the PR Assistant with her dotcom trends during the recent visits at Nalubaale power station in October 2017.

Ever since visuals have continued to drive customer engagement and the different organisations need to take advantage of the selfie revolution to boost their respective social media pages. Now you may say that a selfie can never be incorporated into the working world but let me change your mind.

Selfies show personality. Selfies by their own nature are personal. Their content usually says a lot about the people who work in the company. They are much more effective for connecting to publics both internal and external than posed photographs. For example, a selfie of employees at the office or a related event can be a powerful message that says, "We like to work here, and we support the company's mission."

In the dot-com world of today, there is always the need to provide evidence, selfies can help to create the needed proof. When a selfie is posted with a company product for example, with the background of Karuma hydropower project this acts as proof that the dam actually exists. A selfie acts a perfect ad and social proof of the organisation's success. That being said, maybe there is more reason to incorporate the selfie revolution in the company's social media plan.

Yaka offers new customer experience

By Stephen ILONGOLE

KAMPALA

In 2011, electricity distributor Umeme launched the pre-payment system, commonly known as Yaka. This was meant to allow customers conveniently manage and control their electricity costs better. Previously, customers would wait for bills to be delivered and then they would pay for used electricity. The pre-paid metering took that away and customers make payments before they can use the electricity.

Before being launched countrywide, a pilot study about the pre-payment metering solution was conducted in the areas of Kitintale, Mbuya, Mutungo, Luzira and surrounding areas to assess the impact of the system on Umeme's business operations, power loss reduction and customer service delivery. After a successful trial, a roll out programme was developed with the target to have all Umeme's domestic and small commercial customers converted to prepayment metering.According to Josephat Atuhurra, the Umeme Energy Metering Services Manager, convincing people to migrate to the pre-payment system from the post-paid system was not easy at all as the project faced resistance from customers who by that time had not been sensitized about how it works. In order to change perceptions, Umeme carried out sensitization through a series of workshops and trainings. "The training involved explaining to customers how the entire system works as well as the breakdown of the billing. Later, customers understood how the new technology works and embraced the new arrangement," he says. Mr Samuel Tabu, a resident of Kireka, a Kampala suburb, says after receiving sensitization about the pre-payment system, adapting to the new technology was not a big challenge.

Ms Amelia Aketch, a resident of Kira says with prepaid system, she no longer experiences power disconnections from Umeme because of bills as she is now able to know how much she can spend on electricity.

To drive convenience in vending, Umeme introduced an open payment system platform (TouchPay) that integrates with mobile money and various bank platforms. Mr. Atuhurra says the prepaid system has enabled Umeme to reduce on defaults as well as contributing to revenue growth of the firm. "The pre-paid system is more efficient and reliable unlike the old system where customers accumulated big debts. The less debts accumulated by the customers has helped Umeme achieve its collection targets, which is not the case when the post-paid system was in use," he says.

According to Mr Atuhurra, the pre-payment system allows customers to control and monitor their electricity consumption. "The service has been made convenient by extending it to the customer. The customer is offered many vending options 24 hours, seven days a week. The customer is able to buy electricity units in affordable quantities before use," he adds.

Mr Danstum Kimbowa, an engineer with Umeme Ltd, says the introduction of pre-paid system has helped to narrow down the billing cycle that was wide during the time of post-paid. He says this has reduced the costs of production since less personnel is needed for billing.

How does prepayment metering work?

According to the Umeme website, upon conversion from a post-paid meter to the Yaka System, a customer is issued a metre card, which also has a meter number. A customer purchases Yaka units by paying the amount he/she wants by using the given specific metre number. After paying, one receives a 20 digit token, load the token onto Yaka metre and watch to see if the purchased units have been added. Once the units are added, one is able to use electricity. When the units are running low, the metre makes a continuous beeping noise to warn you.

Computing Yaka

The computation of Yaka is impacted by three things; the discounted units, service fee, and the VAT. Discounted units (15 units each at Shs150) are earned once in 30 days.

Service Fee of Shs 3360 is charged once in 30 days. VAT is charged on every transaction.

"Therefore if one makes multiple transactions during 30 days, he earns discounted units once, and service fee is levied once. These affect the units you get in each transaction," the Umeme website reads in part.

Converting from post-paid to Yaka

Before being put on prepaid system, the Umeme team serves the client with a conversion schedule/ notification letter, contract of supply agreement form and a prepaid information pack

After signing the documents, the Yaka meter is installed with 30 pre-loaded units and a client is notified by SMS.

Arrears on my Post Paid bill

According to Umeme website, the customer has the option to clear the arrears outright but if he or she is unable to, the arrears are transferred onto the new Yaka account and gradually deducted at a rate of 30% of the subsequent token purchases until the debt is cleared.

ERA targets to consolidate the gains in the electricity supply industry

By Eng Ziria Tibulwa WAAKO Executive Director ERA

Eng. Ziria Tibulwa WAAKO, the Executive Director of Electricity Regulatory Authority (ERA)

The Electricity Regulatory Authority (ERA) is a Statutory Body responsible for regulating the Generation, Transmission, Distribution, Sale, Import and Export of electricity in Uganda.

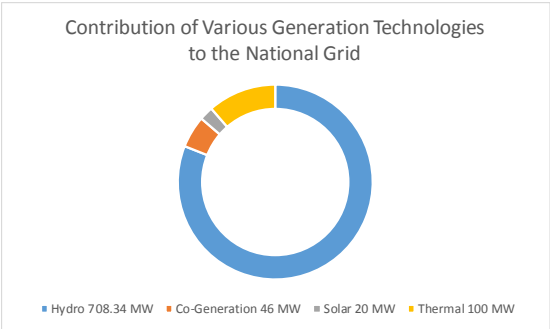
In undertaking this mandate in line with the Electricity Act, 1999, the Authority: Issues Permits and Licenses; Prescribe charges and rates; Establishes the Electricity Tariff (price) for all consumer categories; Sets and enforces License terms and conditions; and Sets and enforces performance standards for the players in the Electricity Supply Industry. The Authority further advises the Honourable Minister of Energy and Mineral Development regarding the need for electricity projects to ensure adequate generation capacity, transmission and distribution infrastructure to deliver safe, reliable electric power supply in a sustainable manner.

Under the stewardship of the Authority, the Electricity Supply Industry has developed by leaps and bounds as illustrated:

1. 22 operational Electricity Generation companies;
2. 1 (one) Government-owned Power Transmission company;
3. Nine (9) Power Distribution companies, with two Off-Grids;
4. Growth in the country's Generation capacity from 394.9 MW in 2000 to 929.64 MW in 2017;
5. Diversification of the Energy Mix with 874.34 MW supplied to the National Grid as thus: Hydro – 708.34 MW (81%), Thermal - 100 MW (11.4%), Co-generation – 46 MW (5.3%), and Solar – 20 MW (2.3%);
6. Distribution Energy Loss Target of 15.7% in 2017 (compared to an actual of 35.7% in 2004);
7. Transmission Loss Target of 3.38% in 2017 (compared to 4.8% in 2005).
8. Private Capital Investments worth over US$ 2,324.8 Million;
9. Over 1,100,000 customers connected to electricity service by the distribution companies;
10. Energy Sales of 2,600 GWh in 2016 (compared to 706 GWh in 2001);
11. Commissioning of two (2) Grid-Connected Solar Photo Voltaic Power Plants that will add 20 MW to the National Grid;
12. Reduction in the licensing period from six (6) months to three (3) months.
13. Investment of UGX 60 Million in Societal Shared Value for each of the last three financial years.

Stakeholders commission the 10MWp Tororo Solar north plant in Tororo District.

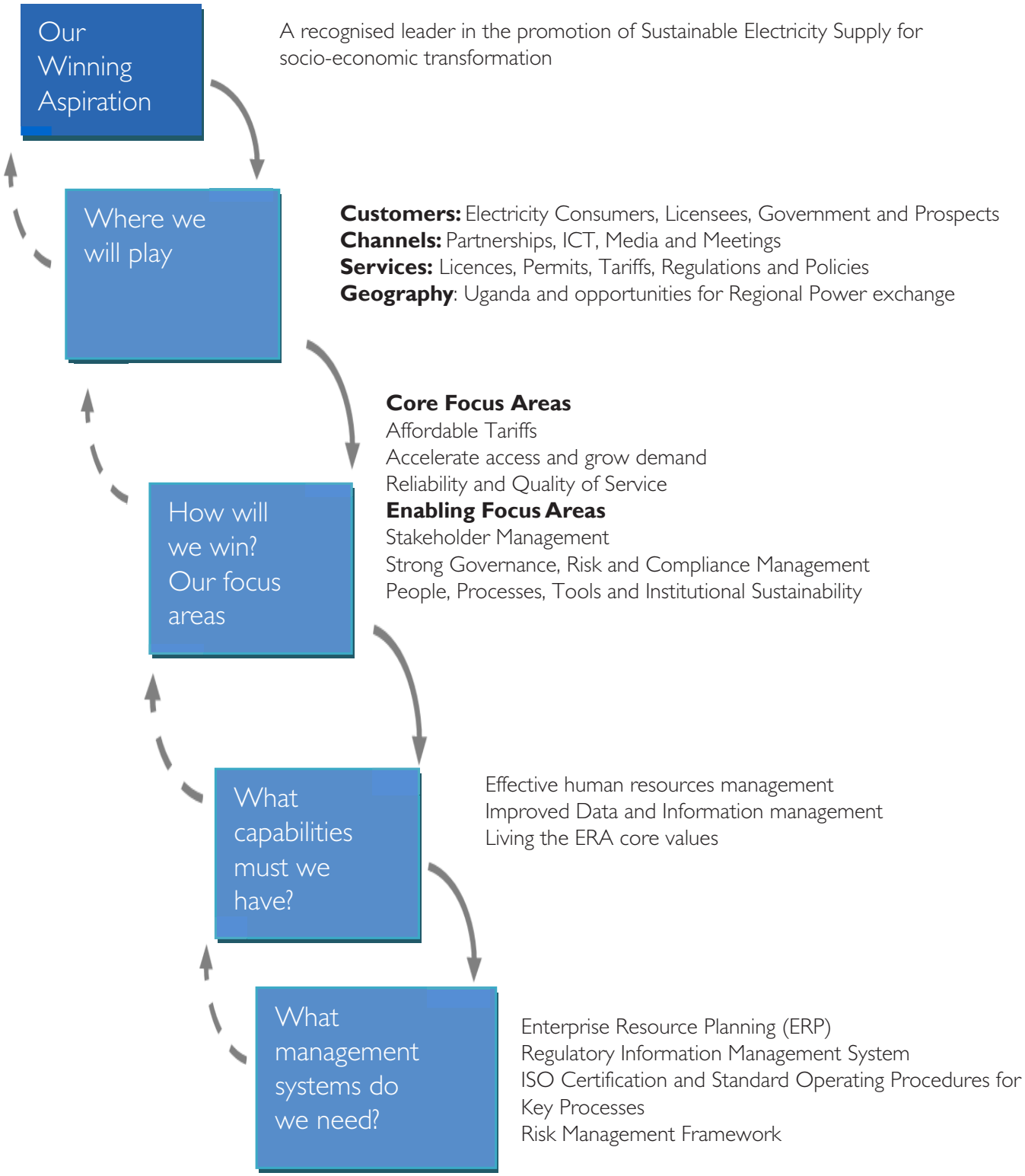
Technology	Contribution to the Grid	%age Contribution
Hydro	708.34 MW	81.00%
Co-Generation	46 MW	5.30%
Solar	20 MW	2.30%
Thermal	100 MW	11.40%



During the financial years 2017/18 to 2019/20, ERA will contribute to the attainment of the Uganda Vision 2040 by focusing on three key areas, as illustrated in the three-year road map.

ERA's Three-Year Roadmap

ERA's winning aspiration in the next three (3) years (2017/18 to 2019/20) is to be "a Recognized Leader in the Promotion of Sustainable Electricity Supply for Socio-Economic Transformation." ERA shall achieve this by focusing on three Core Areas, namely: Affordable Tariffs; Acceleration of Access and Demand Growth; and Reliable Power and Quality of Service.


Our Winning Aspiration
A recognised leader in the promotion of Sustainable Electricity Supply for socio-economic transformation
Where we will play
Customers: Electricity Consumers, Licensees, Government and Prospects
Channels: Partnerships, ICT, Media and Meetings
Services: Licences, Permits, Tariffs, Regulations and Policies
Geography: Uganda and opportunities for Regional Power exchange
How will we win? Our focus areas
Core Focus Areas
Affordable Tariffs
Accelerate access and grow demand
Reliability and Quality of Service
Enabling Focus Areas
Stakeholder Management
Strong Governance, Risk and Compliance Management
People, Processes, Tools and Institutional Sustainability
What capabilities must we have?
Effective human resources management
Improved Data and Information management
Living the ERA core values
What management systems do we need?
Enterprise Resource Planning (ERP)
Regulatory Information Management System
ISO Certification and Standard Operating Procedures for Key Processes
Risk Management Framework

Energy management systems can improve plant energy efficiency

By James Baanabe ISINGOMA
The Acting Director Energy Resources Development,
Ministry of Energy and Mineral Development Uganda.

Ministry of
Energy and Mineral Development
Uganda.

What is Energy Management? Energy management is the systematic use of management and technology to improve the energy performance of an organisation including energy efficiency. Energy management includes all measures that are executed to achieve the minimum possible energy use and cost while meeting the true needs of the activities occurring within a facility including monitoring, controlling, and conserving of energy, planning and operation of energy production and energy consumption units. Actions intended to achieve this are normally focused on increasing efficiency, reducing wasted energy, and finding superior energy alternatives.

Energy Management in Uganda's Context: Most organizations in Uganda are facing challenges in implementing energy management programmes in their facilities. This is mainly because energy management has not received critical attention. Unlike Health & Safety, Environment Management, Quality Management that are integrated in organisations, Energy Management is not. As a result, a number of facilities both private and public are faced with high energy bills that could be avoided. Government of Uganda through various programmes has engaged industrial facilities to implement energy efficiency and management interventions, including but not limited to undertaking energy audits, as well as investing in energy efficient technologies. Government is now promoting and encouraging facilities and organizations to integrate energy management in the organisation structure.

Why is Energy Management Important? Energy management is the key to saving energy in any organization. Reducing energy use makes perfect business sense; it saves money, enhances corporate reputation and helps everyone lead the fight against climate change. Therefore, the energy consumer needs to understand that there is a need to control the costs of the energy function or service provided.

Barriers to Energy Management. Energy management has not been fully embraced due to some barriers which include; i) Laimited access to capital. Consumers often face high up-front costs for energy-efficient systems which hinder the investments in energy-efficiency technologies; ii) Lack of Energy efficiency standards and Labels for appliances. iii) Behavioural barriers that characterize the end-user's decision-marking relating to energy consumption such as Public's awareness and attitudes toward energy efficiency could greatly affect their energy-related purchase and consumption behaviours; Perceived risk of energy-efficiency investments. Consumers and businesses can be very risk averse in terms of investing in energy efficiency technologies; There is often a lack of information on the performance of energy-efficient technologies. Consumers tend not to change their energy consumption behaviour if little information is provided.

The Energy Management ISO 50001: To have Energy Management properly integrated there is an international standard that has gained worldwide reputation that needs consideration for adoption by high energy consuming facilities. This is the ISO 50001. The international standard that outlines energy management practices is considered to be the best, globally. Implementing the standard can help organisations to save energy, cut costs, and meet environmental and

carbon reduction targets.

ISO50001 provides an internationally acceptable integrated approach to Energy Management. The purpose of an Energy Management System is to provide organizations with a systematic approach for managing energy use and consumption based on measurement, planning, operational control evaluation, and management review processes.

Like many other energy management systems (EnMS) standards, ISO 50001 is based on the Plan-Do-Check-Act (PDCA) cycle. It integrates both the technical and managerial activities. The PDCA cycle essentially the foundation of every ISO standard. The ISO 50001 cycle consists of the following:

1. Plan – Establish guidelines and provisions For EnMS operation following ISO 50001

2. Do – Operate business under the established EnMS

3. Check – Verify that you operate business under the established EnMS following ISO 50001

4. Act – Report the result of verification at management review

The verification of compliance to the ISO 50001 Energy Management System standard is done by the actual results written in reports and records as evidences against written guidelines and provisions, procedures and plans. This means that documentation is the most important aspect to consider when one seeks efficient operation of EnMS compatible to ISO 50001.

The Ministry of Energy and Mineral Development together with UNBS is promoting the use of this standard in high energy consuming facilities.The process will involve creating awareness on the ISO 50001 Standard. This will be followed by training for interested organisations by an experienced firm in the Management Standard. After training, the companies that participated will implement the standard with support of the Ministry of Energy and Mineral Development and UNBS.

Companies interested in taking part in the training in ISO 50001 can contact:

Photo of Mr. James Banabe ISINGOMA at Sheraton Hotel addressing stakeholders on the energy sector in Uganda.

The author holds a B. Sc. Degree in Industrial Chemistry, Masters Degrees in Energy Studies and Business Administration and is a Certified Energy Auditor.

Amber House, P.O. Box 72720 Kampala,
Email: ceecd@energy.go.ug.
Telephone 0414 341494.

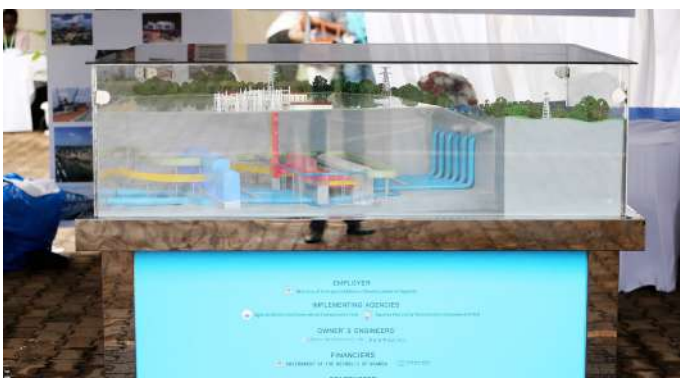
UEGCL takes part In the URA Taxpayers Appreciation Week

By Noella NSABA- PR Assistant

SHOWTIME: Corporate Affairs Manager Simon KASYATE curates the Karuma Hydro Power Plant Model at the URA Tax Appreciation week. The foreground is Ali SEKATAWA of the Uganda Petroleum Authority.

The Uganda Revenue Authority (URA) is a government revenue collection agency responsible for enforcing, assessing, collecting, and accounting for the various taxes imposed in Uganda. For the past twelve years, URA has been organizing the taxpayer's appreciation week. This year 2017 theme was, '"Appreciating Uganda`s Taxpayer; The Link between Public Accountability and Tax Compliance"'. UEGCL and other government ministries, departments and agencies (MDAs), converged at the Kololo Independence Grounds in Kampala to showcase their services during this year's event. The three-day event commenced on Wednesday 27 to 29 September, 2017. On this occasion the tax body shared information to stakeholders about how the collected revenue is

HERE WE ARE: Show goers mesmerized by the 3D model of the Karuma Hydro Power Project at the URA tax appreciation week exhibition 2017, at Kololo Independence grounds.



expended, engaged in constructive discourse with officials and other participants.

UEGCL participated in this memorable event and was also able to provide accountability of what money that is collected from taxes is doing to enhance the generation of electricity in Uganda. An imaginative impression of Karuma Hydro Power Plant (HPP) was showcased during the event and was used to clearly show how power will be generated at the 600MW plant.

Visitors were able to learn one or two things, but most important to understand and appreciate the role of UEGCL and the differentiated roles of the other players in the Energy sector. Established by the Uganda government, UEGCL is funded by taxpayer funds. The projects that UEGCL will be responsible for operating and maintaining are also partly funded by the taxpayers. The tariff that the people will be paying for the power generated will have a tax component. That is UEGCL graced the appreciation week organised by URA, in order for people to see, ask and inquire about what their money had been up to.

Among others, URA was able to give back to the public free medical services, free verification of land titles, business registration and verification, blood donation and free registration of births to those who happened to attend.

The Employer's camp at Karuma Hydropower Project Commissioned

By Jonan KIIZA
PRO- Isimba

The Minister of state for energy Hon. Eng. Simon D'Ujanga on 27 October 2017 flagged off the construction of the employer's camp at Karuma hydropower project (HPP) in Kiryandongo district.

"Electricity is a driver of socio-economic development and the force behind the growth of countries including China, Singapore, Malaysia and South Korea", stated Eng. Simon D'Ujanga while commissioning the employers camp at Karuma.

Karuma Hydropower project is located along the River Nile in Kiryandongo, one of the districts that form Bunyoro kingdom. Karuma HPP-600MW will with no doubt upon completion become the biggest hydropower dam in Uganda. The dam was contracted under the engineering, procurement, and construction (EPC), with the ministry of energy and mineral development as the employer. Uganda Electricity and Generation Company Limited (UEGCL) double as the government implementing agency and the supervisor of Sinohydro Corporation Limited, the EPC contractor. To ensure the quality of works, the employer has contracted the owner's engineer, Energy Infratech Pvt. Limited.

Karuma HPP comprises of the generation facility (dam), the underground powerhouse, transformer carven, surge chamber, tunnels and access ducts. There's also a transmission facility that will host three transmission lines meant to evacuate power from Karuma to Kawanda, Olwiyo, and Lira respectively.

As per design, the project has a permanent employer's camp. This is where UEGCL will base to execute her operations and the maintenance function of this facility upon it being officially handed over.

" This place will have a laboratory, Canteen, a Visitors Centre, a clubhouse, a guest house and a fully-fledged staff housing unit", Said Dr. Harrison E. Mutikanga in his maiden speech at the groundbreaking ceremony!

The occasion was highly attended by the district chairpersons, security heads and local government heads of the three districts of Kiryandongo, Nwoya, and Oyam.

The minister of state for energy, Hon. Eng. Simon D'Ujanga further accentuated the economic implication of this project to the country.

"Once completed, not only we will be able to provide reliable and affordable power to our people but also we will employ more than 100 people from the different disciplines..." Said Eng. Hon D'Ujanga

As a sign of respect to Mother Nature, Hon. Eng. Simon D'Ujanga together with UEGCL's board chairperson Eng. Dr. Margret Njuki, Dr. Eng. Harrison Mutikanga (UEGCL's CEO) and Hajji Badru Kiggundu-chairperson steering committee planted trees around the project employer's camp.

The minister in his final remarks applauded UEGCL the (supervising agent) and Sinohydro Construction (EPC contractor) for the progress so far made. He, without end, thanked the local community for the support. "Keep up the support for the successful completion of this project", concluded Hon. Eng. Simon D'Ujanga, minister of state for energy who also, was the guest of honor.

A photo showing some of the staff of KRISNA Construction Ltd, the official contractor of the employers camp at Karuma HPP.

Dr. Eng. Badru KIGGUNDU Chairman Steering Comittee posing for a photo during the commissioning of the employers camp at Karuma HPP

Dr. Eng. Harrison E. MUTIKANGA, the Contractor's representative and Eng. Badru Kigunddu sharing a light moment during the commissioning of the employer's camp in October, 2017

Eng. Proscovia M. NJUKI and Dr. Harrison E. MUTIKANGA laying a brick, on the new employers camp at Karuma HPP.

Second River Diversion Begin at Isimba Hydropower Project!

By Jonan KIIZA-PRO Isimba

Aerial view of Isimba HPP (183 MW). Extreme upper left background shows the right and upper downstream cofferdams completed. Lower right background shows water running through the five outlets after stage one cofferdams were demolished.

The second river diversion at Isimba 183 (MW) Hydropower project has been completed. River diversion is the act of diverting a portion of river or all water from the main course to another natural or man-made channel. The Isimba 183(MW) HPP was clustered in two stages namely, the first and second stage cofferdams. In stage one, cofferdams made of earth, stones and boulders were used in the upstream and downstream of the left river channel to facilitate the construction of the civil structures and the first section of the LED.

In stage two, still, the cofferdams have been established in the right river channel. This has allowed the water to be diverted through the newly constructed spillways which are close to the powerhouse. The spillways consist of five outlets; three of which are for the low level outlets and the remaining two are for the upper level outlets. Other activities in this stage included the demolishing of all cofferdams which were built during stage one. Effectively, this has allowed water through the left channel section and through the spillways. Closure has been achieved and dewatering of the foundation pit to allow the right embankment dam construction works on the right river channel and across to the right bank has commenced.

At Isimba, the river ruptures into two branches; the left and right river channels joining through the Koova Island. Various project structures and constituents span across the left river channel, Koova Island, and on the

Rear View of the power house at Isimba 183 (MW) HPP

Front view of the guide wall at Isimba 183 (MW)HPP

right river channel correspondingly. This is vindicated by the fact that the river flows in the northern direction.

The Power House, Gravity Dams, and Spillways were constructed on the left river channel which is the largest river channel at the dam site section. Structurally, the dam has the left embankment dam (LED) and the right embankment dam. Part of the right embankment dam is located on Koova Island and stretches up the extent of Kamuli district. The switchyard is however positioned on the left hand side of the power house. This ongoing activity is very significant as it further avows UEGCL's position of delivering this project in the coming year 2018.

Aerial rear photo showing the power house at the current with water running through the spillways on the left of the river channel

THE CSR side of UEGCL.

By Muhammad LUBOGO
Public Relations Officer,
Karuma

A group photo of some of the UEGCL' staff who participated in the 2017 MTN Marathon race.

The practice of CSR or Corporate Social Responsibility as a standard for companies and businesses to follow has evolved from its early days as a slogan that was considered trendy by some firms following it to the present-day realities of the 21st century where it is no longer just fashionable but a business requirement to be socially responsible.

In the CSR continues to evolve and is also referred to as social investment, investment in the communities that are around us. Businesses and entities like UEGCL have realized that profit maximization alone is not good enough. We need to work towards ensuring that the people or communities around us are also in a better place than we found them.

The reason why companies must look beyond profits is also due to the peculiar situation that humanity finds itself in the second decade of the 21st century. Given the political, economic, social and environmental crises that humans as a race are confronting, corporations have a role to play since they contribute the most to the economic well-being of humanity and in turn influence the political.

UEGCL has a number of planned CSR activities like construction of Amaji Primary School, Masindi barracks HCIV, Dicunyi Health Center III among others which will come along with the Karuma and Isimba HPPs. Out of those planned CSR activities, UEGCL regularly participates in the MTN Marathon and Rotary Cancer Run. MTN Marathon brings over 20,000 people from different countries, walks of life, social class, tribes and is arguably the second biggest social event in Uganda after the Kampala City Festival.

Unlike MTN Marathon where runners come together for different causes each year, the Rotary Cancer Run focuses on the different aspects of the deadly cancer disease and how it can be diagnosed.

Each year, UEGCL staff members from different work stations (Head Office, Karuma HPP, Jinja & Isimba HPP) and all departments make it a point to turn up and represent Team G4G. At the starting line before members set off for

their different races (10KM, 21KM, 42KM and some opt for the 5KM walk), everyone is eager to see who comes back first. On this day, we get to discover the "Kiprotich's" among us who get to the finish line within record time. The best part of the day comes after one crosses the finish line and joins the UEGCL Hospitality tent where everyone is welcomed with refreshments, catch up moments, get to know who came in first, take selfies, clear muscle pulls and call it a day.

Bottom line, UEGCL is committed to deliver on its projects as the tagline goes Generating for Generations and is proud to take part in these life changing initiatives.

Dr. Harrison E. MUTIKANGA, CEO UEGCL poses for a photo after winning a gold medal for 10Kms during the 2017 MTN marathon

Moments of some of the UEGCL Staff after completing the 10Km Marathon race in November, 2017.

In the lower background, Simon KASYATE-corporate Affairs Manager at UEGCL very exuberant after finishing the 10 Km MTN marathon race

Is Information on your phone safe?

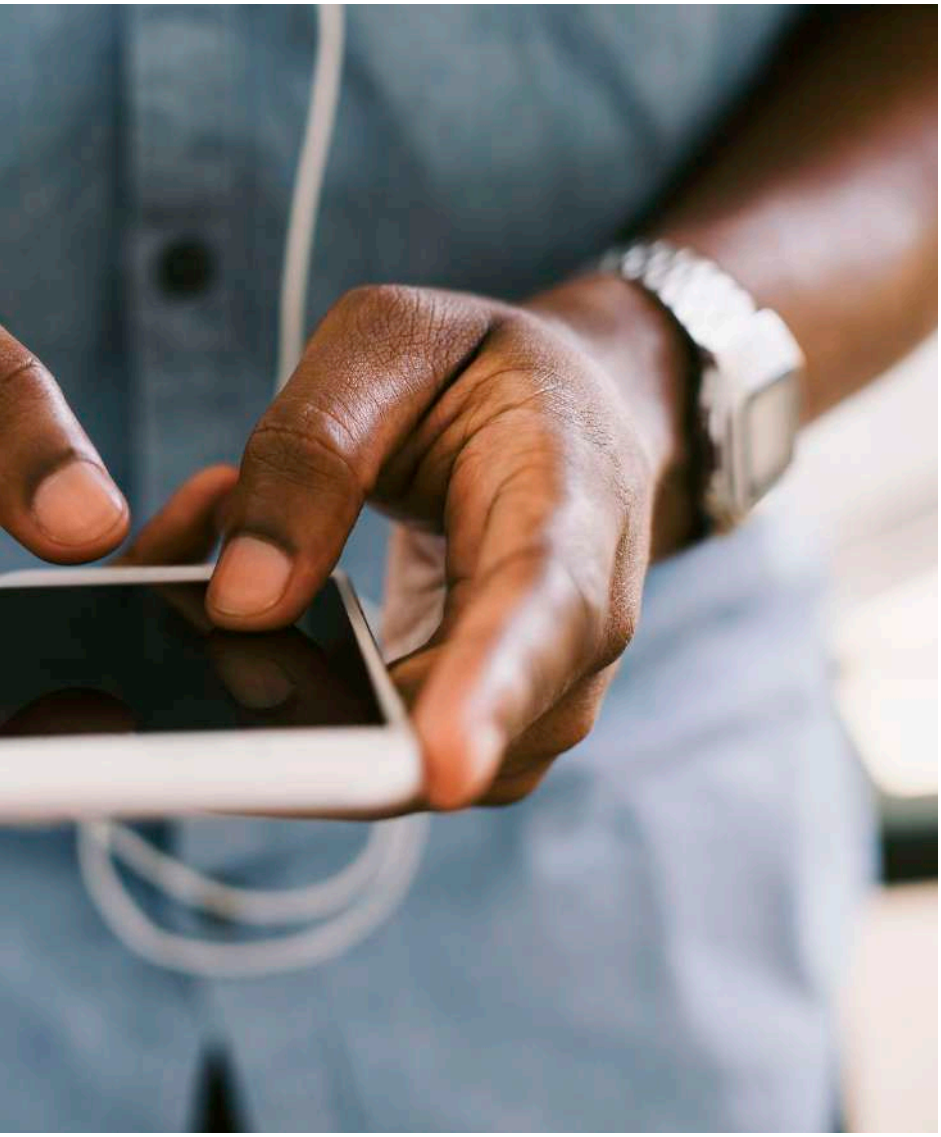
By Carol BISHAGENDA & Elizabeth KAHUNDE.

In 2011, there was an increase in Mobile malicious attacks and phone thefts all over the world, these software's target mobile phones and cause their systems to crash down and also leads to loss of confidential information while hacking is the process of gaining unauthorized access to mobile phones. People can easily hack using software's or applications or even scan codes off the internet. A study has been carried out by Uganda Communications Commission (UCC) shows that there has been on trajectory growth in mobile usage, increasing from 20.7% in 2008 to 52.3% in 2014. Much of Uganda internet use is driven by mobile phones that are internet enabled. The number of internet users as of 2015 was estimated to be 12million and about 7million subscribe through mobile phones. This is mainly due to the increasing need to be socially connected and share information through sites like Facebook, Twitter and WhatsApp.

The thing with Mobile phone security it's challenging because devices are designed to connect in many different ways whether it is a text message, email, and web browsing, Bluetooth connectivity, we should take note that communication is a potential attack route. For example recently a case of hacking was reported in Uganda, where ministries lost over 180billion over hacking, people hacked into their websites and Telecom mails.

As human interaction is the main purpose of a mobile device, there are more chances to trick users. "People are much more likely to click on malicious images or videos sent to a mobile phone than to a PC, because it feels more familiar and natural. Smart phone security has now become a top priority, one that everyone should really be concerned with because an attack on our smart phones can very easily give access to very important information on them, from account passwords to bank details. The increasing risk is the fact that we bring our devices into organisations and leverage them without oversight, joining company network through WIFI (Wireless) .This "backdoor" connectivity results into potential loss of information and exposure. However, simple steps can help against more common hackers, to avoid all these unplanned occurrences its best we;

- Keep your operating system up-to-date. As soon as providers like Apple or Android send information



that an update are ready, please download and install it. Many hackers take advantage of vulnerabilities in out-of-date operating systems. Updates patch these holes and make your phone more secure.

- Install security software on your Mobile Phone. Anti-virus are avail for all operating systems. If you want free, reliable protection, go with Avast, which provides security from hackers and thieves. The Anti- theft feature in this application will lock your device on SIM card change and will secretly capture photos and record audios which are emailed to you.
- Set a passcode. Pick something that's complex yet easy to remember. Avoid birthdays, pets' names, bank PINs, or part of your phone number. Follow the instructions at Apple or Android support to set yours up.
- Vet apps before installing them. Don't just download any, before downloading apps make sure they are from only from a reputable seller or site, such as Apple's App Store or iTunes or google play store. Also be very careful if you use an Android phone Google doesn't vet all its apps as carefully as Apple.

- Disable Wi-Fi, Bluetooth and GPS when you're not using them. These allow potential hackers to locate your phone with a simple scan. Follow the instructions in your user's manual or support section of the phone manufacturer's website. These settings are usually defaulted to the "on" mode on newer phones.

The thing about mobile phones enable their size and distinctive portability make them susceptible to being stolen, in addition to that the smaller screens force developers to make security trade-offs to accommodate a better mobile user experience forgetting

While threats are universal, being protected doesn't have to be difficult. If anything increasingly important in today's digital world. Make sure you are not left behind and say you were not warned.

The Women's Fashion Hub

By Rita BECHO

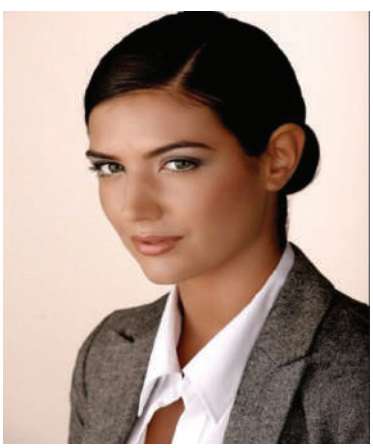
In the story: Internet Photos.

In the corporate world, fashion subscribed to by the employees adds value to the organization's brand. Fashion can be popular style or trend especially in clothing, footwear, and accessories. Often it is an evolving trend in which one dresses. Aspects of fashion can be unisex, however, some trends are neutral. In the corporate world, fashion and trends are fundamental thus we don't have to be boring in our style.

Here are 10 corporate fashion trends one can adopt;

Hair and makeup: Makeup for a corporate lady should be kept simple and neutral. Foundation too needs to be simple and one that matches ones' skin tone. Keep the shouting red lipstick for the weekend.

For the hair, whether it's natural curls, long, short, held back, straight or whatever style, ensure it looks good, neat and clean you. Avoid shouting hair colors because these are not corporate.



Nails: This could be known as manicure and pedicure, nails should be kept short, clean and neat when the nail polish starts to chip, and it should be removed immediately. The nail polish shouldn't be shouting, though cool and easily unnoticeable.

Accessories: Necklaces and earrings give an impression about a woman and therefore a little pin for the day to day activities in the office would look more corporate than the really large hoops that could cause a distraction in the office or those that are usually impressed for parties. For men, a change of watches gives an impression of punctuality and a touch of class.

Blazers: These bring enlightenment to one's outfit. These could be worn with jeans, a dress or a beautiful tank top. Classic black is highly recommended to start with since it can fall over neutral clothes or printed ones.

Down shirts: These can be worn with a pencil skirt or with fitting trousers. These don't usually require planning as long as one knows the type of skirt or trousers that will complement the shirt.

Dresses; These come in different colors and designs that are corporate friendly, that is; knee length and a few short sleeves. Dresses don't usually consume a lot of one's time because it's a complete outfit.

A structured tote bag: Also referred to as work week bags. Look for something that can carry all one needs at work for their day to day activities. These could be mini laptops, files, for the organization or even your personal belongings like cosmetics, sanitary material amongst other necessities.

Polished black pumps: Very trendy in the women's fashion world. Even when trends change, black pumps always stay on top. The pointed toe pump can be worn all year round. However, these depend on one's taste and preferences.

Flats or loafers: Very necessary for a woman while in office to ease her movements. When the heels are too high and the feet need some rest, one can opt for the flats or loafers. These keep you comfortable and good to go.

Random Lens

Together we're stronger: UEGCL staff demonstrating the slogan during the end of year 2017 party at Kabira International club.

UEGCL's December baby Agaba RUGABA sharing his cake with Milton OKWEDA and Prossy NAKAUKA of ISIMBA

UEGCL and MURVP Staff jubilate after concluding the voluntary counselling and testing exercise at ISIMBA HPP on World Aids day.

It is the Balance Scorecard time: Edgar KANSIIME paying attention during BSC Training at Head Office in November, 2017.

UEGCL Staff posing for a photo after the Balance Scorecard Training at Head office in November, 2017.

Allan Kajik-UEGCL Administration Manager picking instructions during the end of year 2017 party team building exercise

Beatrice NABACWA, and Hariet Oyulu EKUDDE whispering to each other during the team building exercise at Kabira Int. Club.

Excited is Doreen, Environmental Officer ISIMBA HPP.

Middle last background photo: Eng. Proscovia M.Njuki leads the board of directors for a site tour at Karuma 600(MW) HPP in December, 2017.

Middle background – Muhammad Lubogo-PRO Karuma leading the choir during the group music competitions at the end of year 2017 buildup exercises

Balloon walk and dance was an incredible experience in this end of year' party 2017

CWE staff excited after receiving condoms during this year's World Aids Day celebrations at Isimba 183(MW) HPP

Artistic impression of Isimba (183MW) Hydro Power Plant.

From the roof top, the beauty of the well-trimmed gardens at UEGCL's Nalubaale power Station

Andrew AMBAZIMAANA poses with a certificate of participation after the China International workshop in 2017.

Artisic Impression of the UEGCL office at Karuma Hydro Power Station.

Artistic impression of the VISITOR'S CENTER, at Karuma Hydro Power Plant.

UEGCL's Human resources Manager, Jackline Kembabazi posing with her little sister after completing 10Kms in the 2017 MTN marathon.

UEGCL's Human Resources Director Harriet Oyule EKude, Chief Strategy& Business Development David ISINGOMA sharing a light moment with Cissy Ssekajiija Nawatene the Public Relations Officer during the 2016 end of year party.

Project Manager Isimba Chad Silas AKITA with Francis NDYAKURA EHS Officer celebrating Xmas 2017.

Eng. Samson YIRGU a consultant at Isimba (183Mw) HPP joined the team to celebrate Christmas 2017.

Aerial View of Isimba (183MW) after Second stage river diversion.

UEGCL
in the Media


GOLDEN HANDS VISIONARY TEAMS
That have turned around organisations, people, markets and industries
UEGCL
Eng Mutikanga steering Uganda Electricity


GOLDEN HANDS VISIONARY TEAMS
That have turned around organisations, people, markets and industries
UEGCL
Generation Company Ltd (UEGCL) to success


Karuma dam supervisor to be replaced
By John Odyek
Karuma dam is 11 months to the completion deadline


'Govt to reduce power tariffs after Karuma starts working'


BUSINESS
FOREX Rates
Karuma Dam contractor cleared to resume works
IN BRIEF
Business News


Construction of housing units for Karuma dam workers launched
By John Odyek
BETWEEN THE LINES:


Uganda looks to neighbours to sell surplus electricity

UEGCL
in the Media

UEGCL @UegclOfficial · 24 Nov
#KarumaProgress: As the day shift goes to sleep, the evening shift steps in and work continues at the Karuma Hydro Power Station. We are "Team No Sleep".

Rita and 7 others

4 37 43

UEGCL Retweeted

UEGCL @UegclOfficial · 14 Dec
UEGCL believes in having a skilled work force and currently we have staff members in China undergoing training on how to handle these projects (Karuma & Isimba) - @UEGCL_CEO #AMCETalk

Muha and 5 others

9 12

Tweets | Tweets & replies | Media | Likes

UEGCL Retweeted

UEGCL @UegclOfficial · 14 Dec
"Currently we are only relying on hydro because it's more stable and it is still the cheapest source of electricity" - @UEGCL_CEO #AMCETalk @ACME_Uganda @Icmuha

10 6

UEGCL @UegclOfficial · 14 Dec
Question: I want to know, are you (UEGCL) responsible for last night's black out?

@UEGCL_CEO: there was a problem at a sub-station at Bujagali but it was restored #ACMETalk

1 6 6

UEGCL added 4 new photos.
Dec 20 at 14:33 ·

#KarumaProgress; The downstream Intake section of the Karuma Hydro Power Project is slowly coming to life. These 6 Intake structures will allow water into the 6 power generating units in the Power House each generating 100 MW to give a total of 600MW.

UEGCL added 4 new photos.
Dec 14 at 18:24 ·

Kicking off public lecture at the African Centre for Media Excellence with a brief introduction about UEGCL from **Simon Kasyate**, Corporate Affairs Manager. **#ACMETalks**.

UEGCL added 5 new photos.
Dec 19 at 11:24 ·

Isimba (183MW) hydro power project this morning! Treat as FAKE NEWS, alarmist rumors earlier circulated (without much traction) that the 'dam' had collapsed.

UEGCL added 9 new photos.
Dec 14 at 21:30 ·

#Photos: Dr. Eng. Harrison E. Mutikanga held a public lecture at African Centre for Media Excellence where he talked about electricity generation in Uganda, the role of UEGCL, update on the Karuma & Isimba hydro power projects, challenges facing the power sector and new investments in energy generation.

Eng. Harrison also took some questions from...
Continue Reading

UEGCL
Generating for Generations

FINANCIAL STATEMENTS FOR THE YEAR ENDED 30TH JUNE 2017

UGANDA ELECTRICITY GENERATION COMPANY LIMITED
STATEMENT OF COMPREHENSIVE INCOME
FOR THE 18 MONTHS ENDED 30 JUNE 2017

Concession fees	14,760,123	10,933,855
Other operating income	2,151,800	42,431,476
Total income	**16,911,923**	**53,365,331**
Staff costs and employee benefits	(5,554,886)	(3,531,996)
Administration expenses	(6,726,598)	(33,922,623)
Depreciation and amortization charge	(19,266,230)	(12,540,862)
Foreign exchange gains/(losses)	91,056	1,273,637
Total operating expenses	**(31,456,658)**	**(48,721,844)**
Operating profit/(loss)	**(14,544,735)**	**4,643,487**
Interest income	636,422	758,404
Profit/(Loss) before tax	**(13,908,313)**	**5,401,891**
Income tax expense		-
Profit/(Loss) for the year	**(13,908,313)**	**5,401,891**
Other comprehensive income	-	-
Total comprehensive income for the period	**(13,908,313)**	**5,401,891**

Eng. Proscovia Margaret NJUKI
Chairperson, Board of Directors

Mr. Ronald DRAVU
Director

UGANDA ELECTRICITY GENERATION COMPANY LIMITED
STATEMENT OF FINANCIAL POSITION
FOR THE 18 MONTHS PERIOD ENDED 30 JUNE 2017

	18months to 30/06/2017 UGX' 000	12months to 31/12/2015 UGX' 000
ASSETS		
Non-current assets		
Property, plant and equipment	436,713,665	451,698,404
Prepaid operating lease rentals	618,564	758,914
Land Nyagak	300,421	291,645
WIP-Projects	2,830,080,741	525,066,806
Due from Eskom	2,146,878	2,146,878
	3,269,860,268	**979,962,647**
Current assets		
Trade and other receivables	4,603,152	4,120,004
Fixed deposits at amortized cost	-	9,235,697
Cash and bank balances	20,785,099	11,285,551
	25,388,251	**24,641,252**
TOTAL ASSETS	**3,295,248,519**	**1,004,603,899**
EQUITY AND LIABILITIES		
Equity		
Issued capital	105,208,169	105,208,169
Capital contributions	554,861,676	554,861,676
Accumulated losses	(208,038,349)	(194,130,036)
	452,031,495	**465,939,809**
Non-current liabilities		
Deferred Income	52,431,210	11,003,357
Stanbic Loan	-	8,700,000
Karuma on lent Loan	1,757,722,793	214,158,010
Isimba on lent loan	959,822,224	298,319,469
Interest payable Karuma	45,707,903	
Interest payable Isimba	23,950,528	
	2,839,634,657	**532,180,836**
Current liabilities		
Due to other related parties	-	7,941
Trade and other payables	3,582,366	6,388,539
Gratuity Payable	-	86,774
	3,582,366	**6,483,254**
TOTAL EQUITY & LIABILITIES	**3,295,248,519**	**1,004,603,899**

Eng. Proscovia Margaret NJUKI
Chairperson, Board of Directors

Mr. Ronald DRAVU
Director

UEGCL
Generating for Generations

UGANDA ELECTRICITY GENERATION COMPANY LIMITED
"Generating for Generations"

ANNUAL CERTIFICATE OF RESPONSIBILITY FOR THE MONTHS ENDED 30TH JUNE 2017
(Pursuant to the Provisions of Section 15 of the Public Enterprises and Reform Divestiture Act, Cap98)

We, the undersigned of Uganda Electricity Generation Company Limited acknowledge responsibility for the proper and due regard for the safeguarding of the assets of company and hereby confirm that we have completed those responsibilities.

We further affirm that any act or omission resulting out of the acknowledgment is our responsibility. A list of the Company Assets is available for viewing at the Company's Head Office located at:

Victoria Office Park Block "c"
Plot 6-9 Okot Close, Bukoto, Kampala
P.O Box 75831,Kampala
Uganda

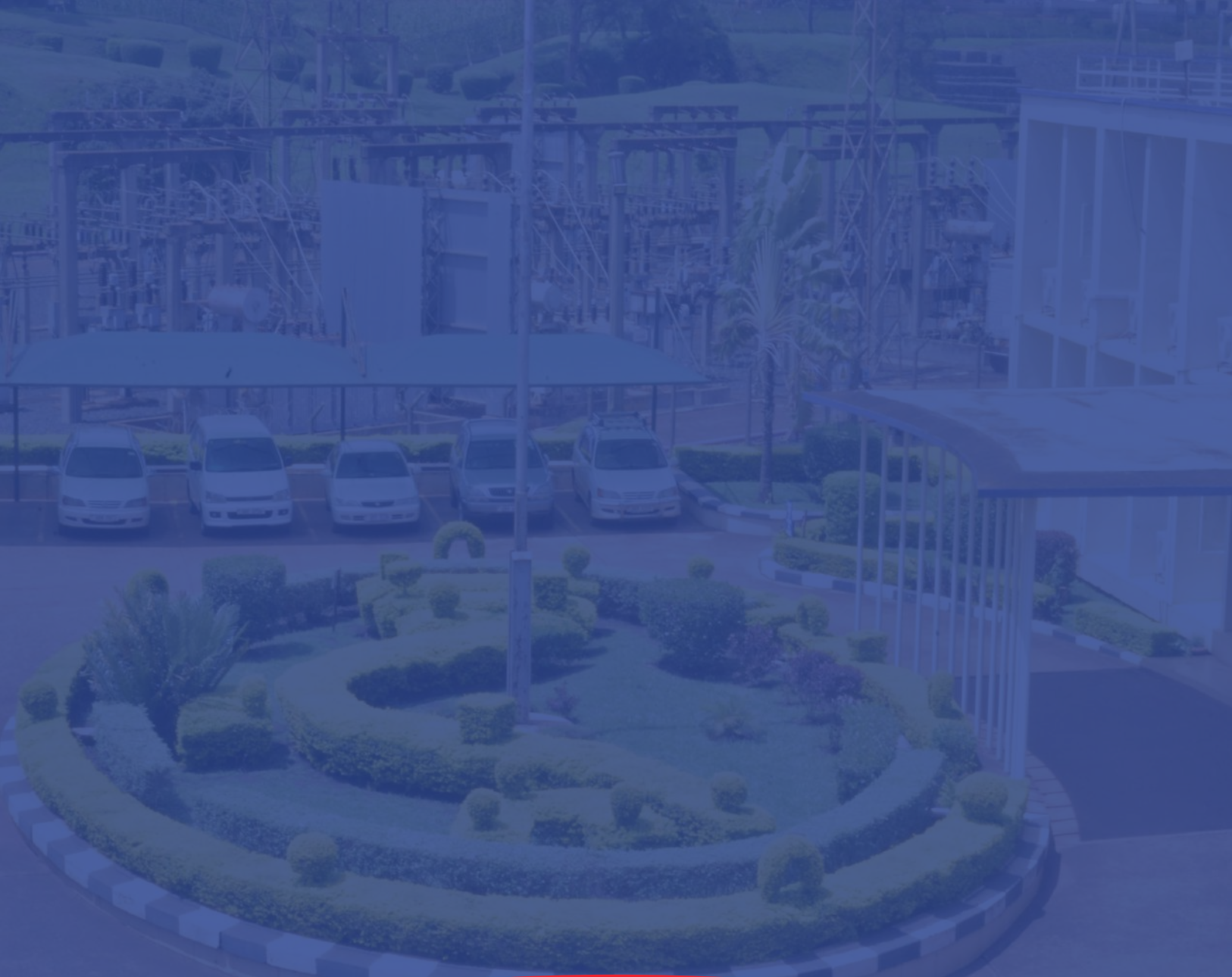
Dated this 30th day of November 2017

Eng. Proscovia Margaret Njuki
CHAIRPERSON, BOARD OF DIRECTORS

Dr. Eng. Harrison E. Mutikanga
CHIEF EXECUTIVE OFFICER

Mr. Joshua Karamagi
CHIEF FINANCE OFFICER

Photo View from the top of the gravity dam focussing on the Spill-ways at Isimba 183(Mw) HPP



Uganda Electricity Generation Company Limited Block C Plot 6-9 Okot Close - Bukoto Victoria Office Park P.O. Box75831, Kampala Tel:+256 312 372165 Fax: +256 414 251057 Email: Info@uegcl.com

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