

The FISSION

A Publication of the Kenya Nuclear Electricity Board

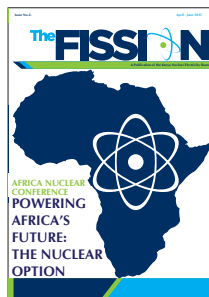


KNEB AWARDED ISO 9001:2015 CERTIFICATION

WINNER



KNEB's Director, Publicity and Advocacy, Mr. Basett Buyukah receives the award for Corporate Publication of the Year 2015 from Grace Munjuri, who is the immediate past Vice Chair of the Public Relations Society of Kenya.



Corporate Publication of the Year 2015

SHOWCASE TIME

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**KNEB AT THE 2018
NAIROBI
INTERNATIONAL
TRADE FAIR**



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**KNEB AWARDED
ISO 9001:2015 CERTIFICATION**



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CEO'S MESSAGE

Welcome to the thirteen edition of the Fission magazine, which highlights the period that runs from July to December 2018. This is the first half of the Government financial year that began on first July.

Stakeholder engagement, education and informing are the cornerstone for a successful nuclear power programme in any country. This is true as Kenya Nuclear Electricity Board (KNEB) has invested heavily on public sensitization through a number of activities and programs.

KNEB has a robust stakeholder engagement plan. This issue highlights some of the activities undertaken during this period from the frontline by KNEB staff involved in stakeholder education and sensitization directly. Notable is KNEB not only engaged professional bodies like Law Society of Kenya and Institute of Engineers of Kenya but also the academia through great energy debate and general public.

Key during this period was the award of award of ISO 9001:2015 certification to the Kenya Nuclear Electricity Board by the Kenya Bureau of Standards (KEBS), which is the national standards body. This is a milestone in KNEB's corporate history and a commitment to Quality management System.

The ISO certification dovetails perfectly in the greater vision and purpose of the organization where safety, security and safeguards are a critical component in nuclear power development.

As the organization grows from strength to strength, the pieces are gradually falling into place for Kenya's Nuclear Power Programme. Suffice it to say, the future is bright and replete with opportunities and possibilities.

ENG. COLLINS JUMA

CEO



Eng. Collins Juma
CEO

EDITORIAL

Welcome to the thirteenth edition of the Fission Magazine. In this issue, as is custom we take a broad look at the news and events that have occurred as Kenya continues on the odyssey toward nuclear electricity generation.

In our cover story, we focus on the Kenya Nuclear Electricity Board's ISO certification by the Kenya Bureau of Standards. We take you inside the certification ceremony in the heart of Nairobi, trace the steps on the road to ISO certification and cast an eye on the factsheet of all matters ISO. To quip a famous phrase, we are setting the standards for nuclear energy in Kenya. The bar has just been raised.

Still in this edition, we go down to the Coast to join Kenya's engineering fraternity for their annual summit. With innovation and the Big four agenda on everyone's lips, the interface with nuclear energy and its various applications makes this a compelling event in KNEB's annual calendar.

Plus, we head to Vienna, Austria and take a front seat at a meeting that delved into the important issue of stakeholder Involvement in a nuclear power programme.

Back home, we parachute into the Nairobi International Trade Fair at Jamhuri Park where KNEB again joins the Kenyan corporate world in the glamour event organized by the Agricultural Society of Kenya.

That's not all, there's an intern's testimony of her experiences on the job and as well as the news and features which defined this period. In addition, we go up close and personal in the Interview section and give you some travel tips and home in on the evolving role of the Human Resource Practitioner. There's also a thought provoking piece on nuclear energy and climate change.

Welcome. Enjoy the read.

BASETT BUYUKAH

EDITORIAL DIRECTOR



Basett Buyukah

Director Publicity & Advocacy

CS KETER SEEKS IAEA SUPPORT FOR CANCER TREATMENT FACILITIES IN KENYA



Energy Cabinet Secretary Charles Keter delivers his speech during the International Atomic Energy Agency ministerial conference in Vienna Austria.

By Bernard Namunane

Kenya has sought the assistance of the International Atomic Energy Agency (IAEA) to step up treatment of cancer at its two-referral hospitals and extend the services to the country's three other major towns.

This came as Energy Cabinet Secretary Charles Keter outlined the country's progress towards setting up a nuclear power plant following the publication of the Nuclear Regulatory Bill in readiness for debate by Parliament.

Addressing an International Atomic Energy Agency (IAEA) ministerial conference in Vienna, Austria on Wednesday 28th November 2018, Keter said the IAEA was instrumental in the establishment of cancer treatment centres at the Kenyatta National Hospital (KNH) in Nairobi and Eldoret's Moi Referral and Teaching Hospital (MTRH).

"We are grateful that the Agency (IAEA) has partnered with the government to expand cancer treatment programme to include Moi referral Hospital. This will ease the burden on Kenyatta National Hospital while covering the rural areas in the Rift Valley and beyond," he told the gathering.

Keter informed the conference, whose theme was to address "current and emerging challenges" in nuclear science and technology, that Kenya was expanding high level treatment services of the country's main killer disease to the Coast Provincial General Referral Hospital in Mombasa, Jaramogi Oginga Odinga Teaching and Referral Hospital in Kisumu and Nyeri Provincial Hospital.

"In this context, support towards equipping the specific hospitals and capacity building, especially in diagnosis and treatment of cancer is crucially and highly needed," he said.

The CS was accompanied by Kenya National Electricity Board (KNEB)

CEO Eng. Collins Juma and Kenya Electricity Generating Company Managing Director Rebecca Miano.

During a side meeting with IAEA Director General Yukiya Amano, Keter spoke of the severity of the cancer disease in Kenya and urged the Agency to step in and help.

"Cancer is on the rise and is a very worrying disease. Cancer patients going to India is now like medical tourism. Provision of equipment to Kenya will help in the treatment of cancer not only in Kenya but to other countries in the region.

As a country we have as one of the government's key agenda's, achieving Universal Health Care. Equipping health facilities with necessary equipment is part of it,"



Energy Cabinet Secretary Charles Keter (right) confers with Kenya Nuclear Energy Electricity Board CEO Collins Juma during the International Atomic Energy Agency ministerial conference in Vienna, Austria

he said.

Amano, who is passionate about treatment of cancer through radiotherapy, described Kenya as one of the IAEA's centres in the world and promised to extend their support to equipping the provincial referral hospitals in Mombasa, Nyeri and Kisumu.

"Progress in the treatment of cancer is very import and our nuclear health department is extending its programs to several African countries. Kenya is one of the centres in Africa and we are happy to support," he said.

During the ministerial meeting at the Vienna International Conference Centre, Keter assured the delegates that Kenya was at the tail end of passing laws that will guide the establishment of the country's first nuclear plant to generate energy for peaceful uses. The Nuclear Energy Regulatory Bill, which was approved in August by the Cabinet, he said, has been published.

"The government has enacted and will complete the necessary legislations, framework and infrastructure to support the development of nuclear energy for peaceful use. The Nuclear Regulatory Bill was published last week and we are going through all the stages as required by the agency before we establish a nuclear power plant," he said.

He disclosed that technical research towards establishment of the nuclear power plant, which was now at the stage of grid and site studies, reactor technology assessment and industrial involvement.

Juma, the KNEB's boss, explained that a team from the IAEA was in the country on a mission to assess the identified sites for establish a nuclear power plant. "The IAEA mission is currently in Nairobi taking people to the sites which we have identified. This is why we are hare with KenGen MD (Rebecca Miano) who will be the operator of the plant," he said on the sidelines of the conference.

Seeking to correct the impression that nuclear energy was confined to deadly weapons, the CS explained that Kenya's nuclear program involves the ministries of Energy, Health, Agriculture and Water. The regulatory authority of the nuclear programme, he said, will be domiciled at the Interior Affairs ministry to avoid sibling jostling between ministries involved.

"The Nuclear Regulatory Authority will be housed under the Interior Affairs ministry. We thought the Interior Ministry will be neutral to avoid sibling tussles between respective ministries," he said.

Keter and his delegation also held talks with IAEA's deputy director general in charge of the agency's technical cooperation, Dazhu Yang and the agency's director for Africa, Prof Shaukat Abdulrazak.

KNEB AWARDED ISO 9001:2015 CERTIFICATION



Mr. Bernard Nguyo - Ag. MD Kenya Bureau of Standards (Left) handing over the ISO 9001:2015 certificate of registration to KNEB CEO- Eng. Collins Juma (Right) and Hon. Simon Kachapin, Chief Administrative Secretary- Ministry of Energy (centre) during the ISO Certificate presentation ceremony to KNEB at the Intercontinental Hotel.

By Faith Kosgei

On Thursday 30th August 2018, Kenya Nuclear Electricity Board was formally awarded ISO 9001:2015 certification by Kenya Bureau of Standards (KEBS). This was during a colourful ceremony held at the Intercontinental hotel presided over by Hon. Simon Kachapin Chief Administrative Officer, Ministry of Energy as Chief Guest, Kenya Bureau of Standards Acting Managing Director Mr. Bernard Nguyo, KNEB Board members, management and staff. Also in attendance were CEOs from the energy Sectors and other stakeholder institution and media.

KNEB was awarded the certification by Kenya Bureau of Standards as the certification Body after meeting all of the ISO 9001:2015 requirements. KNEB ISO journey begun in June 2014 when the management resolved to develop and implement a Quality Management System (QMS) that is internationally recognized in its operations by training its staff, development of QMS documents and implementation of the QMS in



Kenya Bureau of Standards

P O Box 54974-00200, Popo Road-South C, Nairobi

QUALITY MANAGEMENT SYSTEM CERTIFICATION SCHEME
CERTIFICATE OF REGISTRATION

No. KEBS/QMS/RF/314 Rev. 00

Awarded to:

KENYA NUCLEAR ELECTRICITY BOARD LTD.
P. O. Box 26374-00100
NAIROBI



This is to certify that the Quality Management System (QMS) implemented by the above organization has been audited and found to comply with the requirements of:

ISO 9001:2015 Quality Management Systems - Requirements

The certification covers the activities as specified in the authorized annex(es) bearing the registration number

Managing Director/Authorized Officer

Date of issue: 30th May 2018

Date of first issue: 30th May 2018

Date of expiry: 29th May 2021

Valid subject to the condition of the scheme. Printed copies of this certificate can be validated at www.kebs.org

the organization. KNEB started with ISO 9001:2008 standard that was later revised to ISO 9001:2015 in 2015, at the point KNEB transited and applied for certification under the new standard of ISO 9001:2015.

‘The certification affirms KNEB’s commitment and dedication in ensuring that our products and services are consistent with the customer’s requirements as we focus on continual improvement in carrying out our mandate of fast tracking the implementation of the Kenya’s Nuclear power programme,’ said Eng. Juma.

He traced KNEB’s development from the Nuclear Electricity Project Committee to the Kenya Nuclear Electricity Board.

‘This is a major achievement in our corporate history, through the ISO certification and conforming to International Standards helps us reassure our stakeholders that our services and products are safe, efficient and environmentally friendly,’ added Eng. Juma.

In his address during the ceremony, Chief Administrative Secretary for Energy Hon. Simon Kachapin applauded the Kenya Nuclear Electricity Board for being amongst the first organizations to be certified under ISO 9001:2015 standard in the country.

The Energy CAS noted that KNEB had joined other utilities in the Ministry that are ISO certified that include: Kenya Power, KenGen, Energy Regulatory Commission, Geothermal Development Company, KETRACO and Rural Electrification Authority. He stated that this demonstrated our commitment as a sector towards quality service delivery by adopting an internationally recognized Quality Management Systems in our operations.

KEBS Ag. Managing Director Mr. Bernard Nguyo said that certification is key to development since it leads to standard based solutions that promote trade, innovation and overall improvement of quality of life in a country. He reiterated further that it as an important aspect in the successful implementation of the Sustainable Development Goals (SDG’s), Vision 2030 and the Big Four Agenda.

‘Choosing to be certified does not only prove commitment to best practice, but also shows that excellence matters to the Kenya Nuclear Electricity Board. Certification to ISO 9001:2015 also confirms that KNEB has identified risks associated with its operations and has put in place adequate measures to address them,’ said Mr. Nguyo.

By attaining the certification, KNEB becomes one of the 274 organizations in Kenya that have been certified under the ISO 9001:2015 by Kenya Bureau of Standards Quality Management Systems (QMS) standards ahead of the 15th September 2018 deadline when the ISO 9001:2008 standard becomes obsolete that most institutions are certified under.

The certification is for a period of three years (from May 2018 – to May 2021) during which KEBS will carry out two surveillance audit of KNEB’s Quality Management Systems to ensure compliance with the ISO 9001:2015 requirements and approve the re-certification upon the expiry of the certification contract.

KNEB ISO 9001:2015 JOURNEY

By Emmanuel Wandera

KNEB's journey towards ISO certification began in November 2013. The first step entailed training of process owners (managers), departmental champions and internal ISO auditors. This was followed by development of a procedures manual, quality statement and quality objectives under the ISO 9001:2008 standards.

The preparatory work toward ISO certification for KNEB took a new turn when the ISO 9001:2008 standard was revised to ISO 9001:2015. The net effect was that the relevant ISO documents were aligned in compliance to the new standard.

Upon the establishment of the Quality Management System framework in KNEB, ISO 9001:2015 was officially launched in KNEB in February 2016. The then KNEB Acting CEO, Eng. Collins Juma launched the Board's quality policy statement, ISO procedure Manuals and Corporate Objective at KNEB premises in South C, Nairobi.

In our quest to be ISO 9001:2015 certified, KNEB partnered with Jomo Kenyatta University of Agriculture and Technology as expert consultants and Kenya Bureau of Standards as the Certification Body. Through this partnership KNEB undertook a number of audits that lead to its certification in May 2018 for a period of three years.

The certification means that KNEB is among the first organization in Kenya to be certified under the new ISO 9001:2015 standard before the 15th September 2018 deadline set by International Standards Organizations when the ISO 9001:2008 standards will no longer be applicable.

The attainment of this milestone has propelled KNEB to greater heights in quality service delivery to the public, fulfill its mandate and realize the organization mission of 'promoting safe and secure application of nuclear technology for sustainable electricity generation and distribution in Kenya.'

The ISO coordinator and the secretariat consisting of champions, auditors and Process owners are delighted to be part of the core delivery team towards achievement of the new standard that now embeds strategy and risk management components as part of the Quality Management System.

It is therefore our pleasure to express appreciation to the Board, management and staff of KNEB and our stakeholders who have stood with us from inception to certification under ISO 9001:2015 standards.

PICTORIAL July to December 2018



1. CS Energy Hon. Charles Keter's visit to KNEB office to introduce CAS Energy Colleta Suda. 2. Students visit KNEB stand at IEK conference held at the Pride Inn Mombasa. 3. KNEB Legal & Regulatory affairs Director Mr. Philip Mutai makes a presentation at the LSK conference in Diani, Kwale County. 4.KNEB CEO Eng. Collins Juma officially opens the KNEB/COFEK consumer dialogue forum at the Acacia Premier in Kisumu. 5. Visitors to KNEB stand enjoy the tour to a nuclear plant from the Virtual Reality kit at Nairobi International Trade Fair. 6. Competitor Tees off at the KNEB sponsored Sunset Nyanza golf tournament

SALIENT FEATURES OF ISO 9001:2015

Process Approach- There is emphasis on the process map/flow, measuring and properly assessing the input and output of processes

Risk Based Thinking- Risk analysis and opportunities are identified and evaluated on each process

Context of the organization- An organization must consider both the internal and external issues that can impact its strategic objectives and planning of the QMS. The organization must understand the needs and expectations of its stakeholders, interested parties so as to set up appropriate scope for the QMS.

Leadership- Leadership is now at all levels from process owners to top management

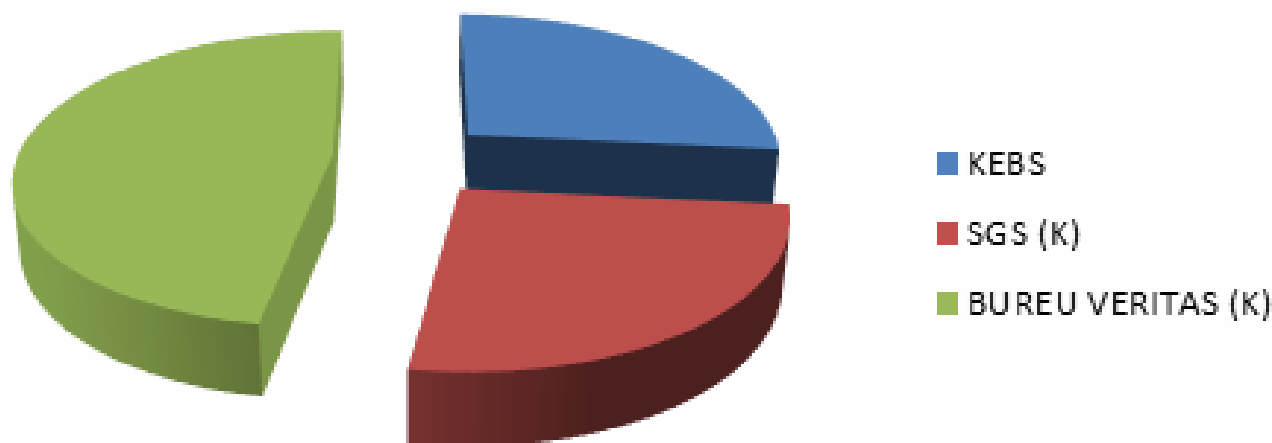
Engagement of People- Leadership at all levels establishes unity of purpose and direction, and creates conditions in which people are engaged in achieving the quality objectives of the organization.

Evidenced based decision making- Decisions are based on analysis and evaluation of data.

Relationship Management- For sustained success, organizations need to manage their relationships with interested parties.

ISO 9001:2015 (Quality August 2018 System) Certified Organization in Kenya As at 14th August 2018

Number Organizations ISO 9001:2015 Certified in Kenya as at 14th August 2018



Certification Body	Number Organizations Certified in Kenya
KEBS	73
SGS (K)	71
BUREU VERITAS (K)	130
TOTAL CERTIFIED ORGANIZATIONS	274

Source: Kenya National Accreditation Service 16th August 2018

Key dates in the KNEB ISO Process

March - July 2015: Development of QMS processes review and documentation under ISO 9001:2008

November 2015: Transition from ISO 9001:2008 to ISO 9001:2015

April 2016: Internal Quality Assurance (IQA) training and certification

July 2016: Expert review by JKUAT: QMS processes review, documentation and internal Audit

June 2017: Stage 1 Audit by Kenya Bureau of Standards

July 2017: Corrective Action Closures and Management Review

November 2017: Stage 2 Audits by Kenya Bureau of Standards

December 2017: Corrective Action Plan

May 2018: Certification.



KNEB ENGAGES STAKEHOLDERS AT THE 6TH ENERGY DEBATE



Eng. Collins Juma- CEO, Kenya Nuclear Electricity Board addressing stakeholders in the Energy sector during the 6th Great Energy Debate at Strathmore University.

By Faith Kosgei

On 5th August 2018, Kenya Nuclear Electricity Board (KNEB) participated in the 6th Edition of the Great Energy Debate at Strathmore University. The Debate organized by Strathmore Energy Research Centre (SERC), Kenya Private Sector Alliance (KEPSA) and Brands & Beyond focused on the role of Energy in the Big 4 Agenda that focuses at enhancing Manufacturing, Health Care, Food security and affordable housing in Kenya. KNEB was represented by Eng. Collins Juma, Chief Executive Officer who was a panelist in the Debate that drew participants from the academia, industry, NGOs, Government utilities under the Ministry of Energy represented by their respective Chief Executive Officers, Independent Power Producers, Consumer bodies, students and energy enthusiasts.

The Debate sought to address the following questions; Do we have the right generation mix to support industrialization and Big 4 Agenda? Are we getting the stable and affordable power that will unlock the full potential of Big 4 Agenda? What are the opportunities in the electricity sector value chain as the roll

out implementation of the Big 4 Agenda gathers momentum and will renewable energy unlock the full potential of the Big 4 Agenda?

The Debate consisted of two sessions, one where panelists made their opening remarks and the plenary session for questions and answers. One of the questions posed to KNEB CEO Eng. Collins Juma, is how far is Kenya's nuclear power programme is and why nuclear the introduction of nuclear in Kenya's energy mix and by when?

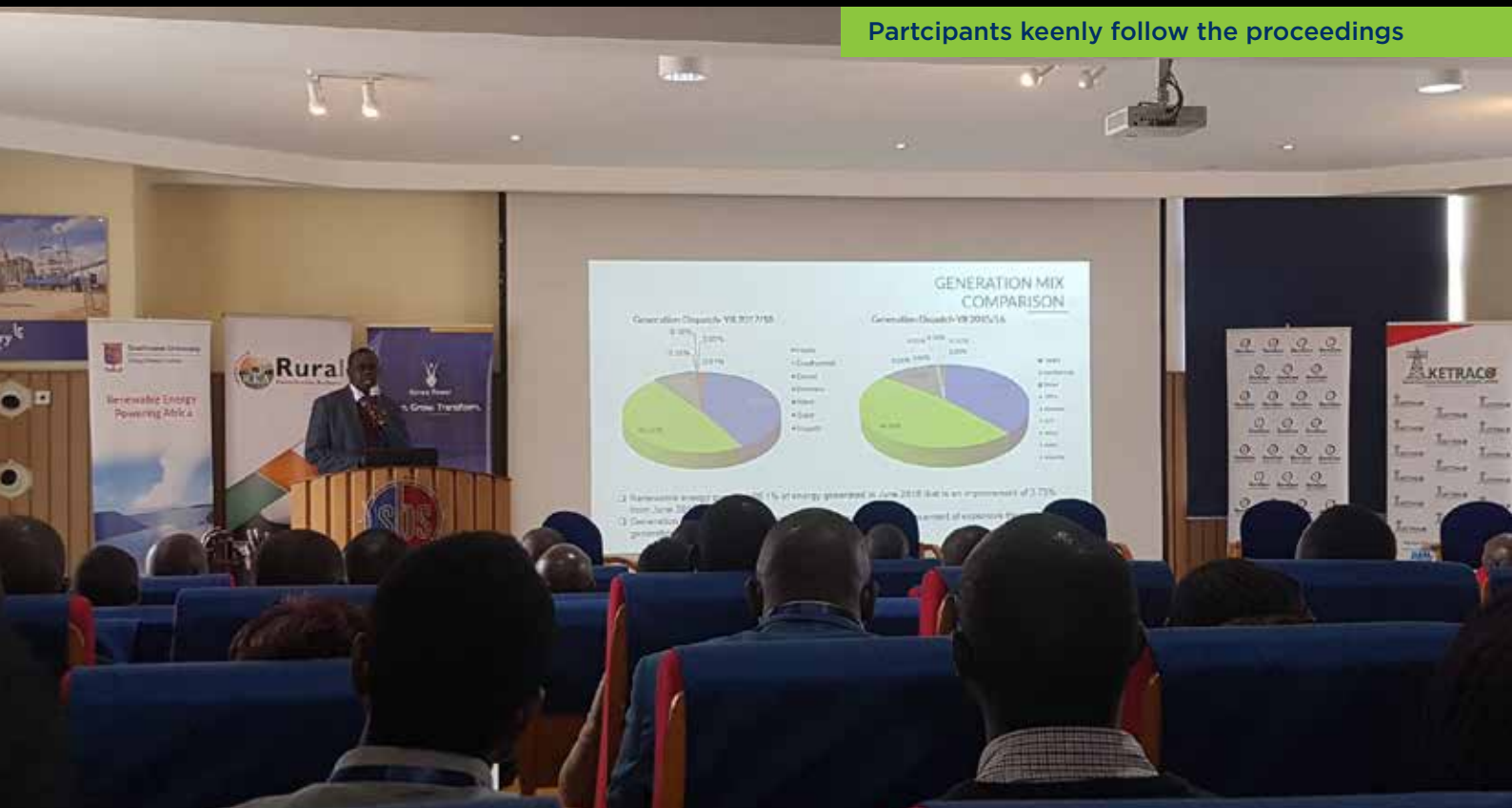
During the question and answer session, Eng Collins Juma informed the participants that the nuclear electricity generation journey started in 2010 when the National Social Economic Council chaired by then President Mwai Kibaki in the bid to diversify Kenya's energy mix and generate electricity in a least cost manner decided to explore various energy technologies to power vision 2030. Nuclear electricity was introduced as a vision 2030 flagship project as an enabler of economic pillar, said Eng. Juma.

He further reiterated that nuclear energy was introduced to complement the already existing energy sources (Geothermal, wind, solar, coal) in the country as a baseload power to meet the growing electricity demand.

'KNEB is currently working with a dateline of 2027 when it's planning to commission the first 1000MW nuclear plant, at the moment we are implementing the recommendations of the International Atomic Energy Agency (IAEA) on the 19 Infrastructure issues, siting activities, Strategic Environment Assessment, Grid study, Reactor technology Assessment and Stakeholder Involvement, among others,' said Eng. Juma.

This is the second time Kenya Nuclear Electricity Board is participating in Energy Debate as part of its wider stakeholder sensitization and engagement plan on nuclear energy development in the country. The Debate provided information on the opportunities and challenges facing the energy sector and how to take up prospects generated as the country implements the Big 4 Agenda.

Participants keenly follow the proceedings



KNEB AT THE 2018 NAIROBI INTERNATIONAL TRADE FAIR



Stakeholders at the KNEB stand

By Jonathan Njoroge

As is our tradition, the Kenya Nuclear Electricity Board participated in one of the most important events in our calendar, the Agricultural Society of Kenya's Nairobi International Trade Fair (NITF).

Due to the high attendance levels, it provides a great opportunity for KNEB to interact with the public. The interaction aims to improve brand visibility, interact with our stakeholders, spread the nuclear energy message and also to create and maintain a positive relationship with the public.

This year's NITF took place from 1st October to 7th October 2018. The event was presided over by His Excellency President of the Republic of Kenya Uhuru Kenyatta who performed the official opening on Thursday 4th October 2018. This year's theme was: *"Promoting Innovation and Technology in Agriculture and trade."*

The million-dollar question is how does nuclear technology contribute to this theme? The answer is more ways than one.

Sterile Insect Technique (SIT) is a pest control method that is environmentally friendly and effective. In modern farming, insect pest is considered as major problem. Farmers have resorted to use of insecticides to control the pests but the biggest problem is that these pests are becoming resistant to insecticides, leading to spraying a large amount of insecticides or developing a new stronger pesticides. Pesticides are not environmentally friendly since it kills indiscriminately. This affects even the useful insects such as bees, which help in pollination and this affects the quality and quantity of the produce.

The insecticide is washed away by rainwater polluting the rivers and negatively affecting the marine life. SIT is a pest control method that rears male insects en masse and later sterilizes them using radiation. The insects are released into the wild and mate with the females but they do not produce offspring hence controlling the pest population.

In food processing there has always been need to have food that has a longer shelf life. Nuclear technology is one of the methods used in food preservation. Food irradiation is a technique that stops the reproductive cycle of bacteria that causes decomposition through exposing food to controlled amount of ionizing radiation breaking down the DNA bond of the bacteria. Nuclear energy can be used to improve food safety by tracing harmful residue and contaminants in food products. These uses help in increasing the food production and enhancing food security.

NITF has always been a major fair in the country, with people from all walks of life in attendance. 2018 was a win for KNEB as we got to interact with our stakeholders in huge numbers and were judged the 3rd best Stand in Energy Conservation and Innovation.

The climax of the fair is arguably the fireworks lighting the night sky, the display is always beautiful and breathtaking. I could not help but to just stare and enjoy the moment that marked the end of the fair.

KNEB uses the platform of the Agricultural Society of Kenya shows for stakeholder engagement on nuclear technology as part of its wider stakeholder engagement and sensitization campaigns.



Above: KNEB staff pose behind the award for 3rd Best Energy Services and Conservation Sector stand

Left Up & Down: Stakeholders from all walks visit the KNEB stand to Interact with our team ,learn more about nuclear electricy and have their questions answered.

PITCHING NUCLEAR AT THE INSTITUTION OF ENGINEERS OF KENYA CONFERENCE



KNEB's Edwin Chesire makes a presentation at the 5th Africa Engineering Week

By Irene Njoroge

As part of our stakeholder engagement program of engaging with professional bodies, KNEB, for the second year in a row, was the main sponsor of the Institution of Engineers of Kenya (IEK) conference that took place from 17th to 21st September 2018 at Paradise Beach Pride Inn Hotel, Mombasa.

KNEB's participation in the IEK conference affords a platform to engage with Kenyan engineers on their role in the nuclear power programme. It is also a forum to showcase opportunities for engineering in the sector.

Under the theme "Harvesting Blue/Ocean Economy for Accelerated Economic Growth: The Role of The Engineer", the conference brought together engineers from various branches of the profession.

KNEB participated in the conference by making presentations on nuclear energy development and exhibiting by pitching a tent where engineers could pose further questions and know more about Kenya's nuclear power programme.

The KNEB team was led by the CEO, Eng. Collins Juma, who is the current President of IEK. Others comprised of representatives from the Board of Directors, Senior Management staff and engineers from

the organization.

This shows KNEB commitment in supporting professionalism by engaging professional bodies to share knowledge and pitch nuclear messages. Other professional bodies engaged include Law Society of Kenya, Institute of Risk Management, Institute of Human Resources Management, Public Relations Society of Kenya, Institute of Certified Public Accountants of Kenya, and The Eastern Africa Association for Radiation Protection (EAARP) among others.



The Institution of Engineers of Kenya (IEK) is a professional organisation whose mission is *to promote, encourage and improve the application of Engineering to technical and other related practices*. One of the goals of the Institution is to disseminate knowledge and skills by holding annual conferences where current and pertinent issues in all branches of engineering are discussed. The IEK is an active participant in the regulatory activities of the Engineers Board of Kenya (EBK) through its membership in the Board. It is also a member of the Federation of African Engineering Organizations (FAEO) and the World Federation of Engineering Organizations (WFEO).



Above: High students from Mombasa county visit the KNEB stand to familiarize themselves with nuclear technology.

Below: Engineers congregate to follow proceedings of the 5th Annual engineering week.



KNEB SENSITIZES KENYAN LAWYERS ON THE NUCLEAR POWER PROGRAMME



Chief Justice Hon. David Maraga officially opens the conference.

By Emmanuel Wandera

The critical role of the legal profession in Kenya's nuclear power programme, especially in the development of the legal and regulatory framework for nuclear power in Kenya, was the key pitch during the Law Society of Kenya Annual Conference held from 8th -12th August 2018 at the Leisure Lodge Beach & Golf Resort in Diani, Kwale County.

The conference organized under the theme 'The Rule of Law and Contested Constitutionalism in Post 2010 Kenya: Promises, Progress, Pitfalls and Prospects,' brought together over 1000 lawyers.

Some of the notable participants were Chief Justice Hon. David Maraga, Attorney General Hon. Paul Kihara Kariuki, Minister of Trade, Industry and Cooperatives Hon. Peter Munya and his Education Counterpart Hon. Amina Mohamed.

Also in attendance was the Kwale County Governor, Salim Mvurya, various Senators and prominent lawyers.

Mr. Joseph Odhiambo, a Board Member at KNEB, urged lawyers to take keen interest in Kenya's nuclear power programme as they have a clear cut role in the development and establishing nuclear law in the Country.

'Nuclear electricity development requires all professions, myself I am a scientist and not a lawyer as such I

can only do science part but the legal part needs lawyers. Kenya is developing nuclear law, we need to work together to succeed,' said Mr. Odhiambo.

The Law Society of Kenya Annual Conference, presents the organization an opportunity to pitch nuclear messages and increase brand awareness amongst lawyers.

For the 2018 edition, KNEB had an exhibition booth, and delivered a ten minute presentation on the role of lawyers in Kenya's nuclear power programme.

Besides the LSK Annual Conference, KNEB also participated in the LSK legal awareness week held at Mili-mani law Courts from 24th - 28th September 2018. KNEB's in-house lawyers took the opportunity to offer free legal aid to members of the public.



Stakeholders at the the LSK conference visit the KNEB stand to interact with our staff members.



IAEA HOLDS TECHNICAL MEETING ON STAKEHOLDER INVOLVEMENT ACROSS THE NUCLEAR POWER PLANT LIFE CYCLE



By Dennis Nkonge

Experts from twenty seven operating, expanding and embarking countries, converged at the International Atomic Energy Agency (IAEA) for technical meeting on Stakeholder Involvement across the Nuclear Power Plant Life Cycle in Vienna. The week-long meeting took place from 3rd - 6th September 2018 at the Vienna International Centre (VIC).

The meeting drew participants from across the globe, including m. managers and officials responsible for stakeholder involvement, communication, as well as public, institutional or media relations in national government organizations, regulatory bodies and nuclear facilities.

Among the issues addressed were several aspects of engaging with a range of stakeholders, such as developing an appropriate strategy and plan, including a monitoring and evaluation process.

Developing and maintaining effective stakeholder involvement is a task that is never ending in a nuclear power programme, as such there is always the need to share knowledge experiences and best practices in order to gain trust from our stakeholder throughout the lifecycle of a nuclear power programme. Stakeholder involvement is a central feature in the successful deployment of nuclear power programmes, it is from this thinking that participants the IAEA meeting resolved that transparent and participative processes at all stages of the programme is crucial for fair and consistent decision making, as well as for harnessing the full potential of the nuclear power sector.

The sessions focused on stakeholder involvement and communication for the long-term operation of nuclear power plants, radioactive waste and decommissioning. There was also an emphasis on engaging with women and the next generation of nuclear professionals. Further, the meeting delved into issues of stakeholder involvement related to nuclear safety and security, which demand that all key organizations in a nuclear power programme, such as the government, the owner/operator and the regulator, engage with each other.

A notable aspect of the deliberations was the alternative methods for public engagement on 'telling the nuclear story'. This included a hands-on exercise on 'story building', concept development that was well presented by US brand experts. Other activities included: participants working in groups to develop a plan for a Public information Centre to support their thinking on how they could showcase why nuclear power would be important to the development for their countries.



Over 40 participants from 27 countries attended the IAEA Technical Meeting on Stakeholder Involvement Across the Nuclear Power Plant Life Cycle, held on 3-6 September 2018 in Vienna. (Photo: E. Dyck/IAEA)

INTERESTING FACTS ABOUT NUCLEAR REACTORS



Just one uranium fuel pellet - roughly the size of the tip of an adult's little finger - contains the same amount of energy as 17,000 cubic feet of natural gas, 1,780 pounds of coal or 149 gallons of oil



Nuclear energy is being used in more than 30 countries around the world, and even powers Mars rovers



A typical nuclear plant can generate enough electricity to power 690,000 houses without creating air emissions



13 percent of the world's electricity comes from nuclear power plants that emit little to no greenhouse gases



A typical nuclear reactor works 24/7 at a 90% average capacity factor



A typical nuclear reactor on an average refuels 1/3rd of fuel every 18th month

THE LARGEST PRODUCERS OF NUCLEAR POWER ARE THE US, FRANCE AND JAPAN.



Crossword Puzzle Answers

19. Dose

Down
 1. Radiation
 3. Kinetic
 5. Energy
 6. Gamma
 7. Thorium
 9. Fission
 11. Electrons
 12. Austria
 14. Uranium
 16. Beta

Across
 2. Alpha
 4. Atom
 8. Irradiate
 10. Cancer
 13. Isotope
 15. Absorber
 17. Power
 18. Ion
 20. Nucleus
 21. Atomic mass

Country Nuclear Profile in Africa

	Country	Status
1.	Egypt	Site preparation for first four NPP with a total of 4800 MWe is underway.
2.	South Africa	Two reactors currently in operation at Koeberg with total installed capacity of 1,800MWe
3.	Nigeria	30kW research reactor in operation. Nigeria Nuclear Regulatory Authority (NNRA) was set up for regulatory oversight on all uses of ionizing radiation. Nigeria Atomic Energy Commission (NAEC) announced selection of four sites for further evaluation. Signed a cooperation agreement with Russia including provision for uranium exploration and mining in the country.
4.	Ghana	30kW research reactor in operation. Nuclear Regulatory Power Act to establish an independent regulator – Ghana Nuclear Regulatory Authority (NRA) - was passed by Parliament in 2015.
5.	Kenya	Plans to realize NPP by 2027. Agreements of assistance in Nuclear Power Development with Russia, China and Korea have been signed. Nuclear energy policy to set up the national nuclear regulator is pending presidential ascent. Site selection is underway.
6.	Uganda	Government signed an agreement with IAEA to initiate the provision of a framework to develop nuclear power generation.
7.	Tanzania	Government has expressed an intention to investigate the use of nuclear power
8.	Zambia	Agreement between Rosatom and Ministry of Education for the construction of the center for Nuclear Science and technology in Zambia, with a 10 MWe research reactor.
9.	Namibia	The government has committed to a policy position of supplying its own electricity from nuclear power given that the country holds about 7% of the world's uranium reserves.
10.	Tunisia	Evaluation of possible construction of a 600 - 1000 MWe NPP by the government is underway.
11.	Libya	10MW research reactor present. Development of Institutional infrastructure for setting up a NPP currently underway. A site for both power generation and desalination has been selected.
12.	Algeria	Two research reactors currently operating. Signed agreements with Rosatom and China for design, construction and operation of NPPs and nuclear research respectively.
13.	Morocco	2MW Triga research reactor under construction. Pre-project study for desalination is complete. Government has approved setting up of a Nuclear Safety Agency
14.	Sudan	Government set up the Nuclear Energy Generation Department. Plans to have an NPP with four 300-600 MWe or 4400 MWe operating by 2030

NUCLEAR ENERGY WILL SAVE OUR PLANET IN THE WAKE OF CLIMATE CHANGE



By Albert Mbaka

Climate Change Phenomena signals the danger of unsustainable levels of industrialization. We are at a point where globally we are experiencing the warming of the planet. Developed nations have begun to heed to the cries of leading scientists from the Intergovernmental Panel for Climate Change (IPCC) who have warned governments not to allow global warming to increase by 2 degrees Celsius limit.

Failure to do this, we may have a heightened level of catastrophe that we may never be able to reverse. As the human family, we have the responsibility to preserve the earth for future generations. China and India have been on the lead in transitioning to cleaner forms of energy. Fossil fuels such as coal, oil and Natural Gas contribute a whole lot of carbon (CO₂) which contributes to global warming.

In order to realize the ambition of reducing carbon emission in the next decade, measures for clean energy technology should be adopted. Nuclear remains one of the most appropriate forms of clean energy that could be adopted to realize this critical goal. The advantage of using nuclear to generate energy is that, even though it is a non-renewable, the output which is the spent fuel, actually can still be re-used/recycled as an input. This is totally different compared to let's say fossils: i.e. coal, oil and gas. Since they are non-renewables, which means that cost of extraction increases with the resource depletion. Nuclear energy has both economic and environmental advantages.

However many questions that continue to be raised is whether Nuclear Energy is economically viable compared to other forms of energy i.e. Solar, wind, Gas and Geothermal. Are nations willing to commit to making huge investments in Nuclear energy establishment for the sake of mitigating climate change?

The odds here are likely to be low, especially following the nuclear accident in Fukushima, Japan, and also taking into consideration the prices of fossil fuels. Even as we head towards the next climate talks in Poland this December, there are political and economic obstacles to be overcome, especially for those that are

pro-nuclear.

According to Chakravorty, nuclear power has the capability of being cost effective for about 50 years until when it could be overtaken by other forms of technology in the renewables group sources of energy i.e. clean coal and also maybe new technologies of generating nuclear energy and more efficient in recycling waste. He further notes that the progress in the uptake of nuclear can be curtailed in the future by the cost of mining uranium and also the problem of waste management. However, innovation in technology that could recycle waste could be very beneficial in managing the cost of extraction of uranium.

In addition there are challenges of member states wanting to opt out of having nuclear as their choice of power generation. Nuclear accidents such as the one that took place in Japan, at the Fukushima Daichi plant, forced some member states to announce the decommissioning process of some of their reactor plants, a good example is Germany. The incident which happened in March 2011, was attributed to a strong earthquake which then triggered a tsunami; interfering with the systems of the Daichi plant.

Many countries are also concerned with issues of risk management and also the construction costs of building a nuclear plant. What a country can do is to submit to the highest safety standards and also incorporate a variety of energy sources that are clean into its energy mix.

For nuclear to provide a significant share of energy in the next decade is to adopt Fast Breed Reactors which have been said to be highly efficient, compared to the one currently used. Fast Breed Reactors utilizes a combination of uranium and plutonium to generate electricity. These reactors utilize a larger portion of the waste. There is also the option of building a permanent underground repository for nuclear waste as it has been done in Finland.

There is a high need to weigh the risks of not taking action towards climate change mitigation. This could be accelerated by perceptions of fear towards other sources of energy such as nuclear. Nuclear has always been seen as more dangerous compared to the effects of climate change, which is quite strange, nuclear is not the devil here since it is supposed to roll back potential impact of negative climate change.

In fact, climate change effects could be worse off than what we have seen in the recent past. Climate change is affecting the water cycles on earth. The Antarctica is melting and sea levels are rising; changing water currents. This has contributed to more flooding and power typhoons and even tsunamis. Let alone the flooding, there have been other extreme events which have occurred, such as forest fires in California. Extreme heat waves have resulted in these forest fires.

We all know the importance of forests in mitigating climate change, they potentially serve as carbon sinks, and if a larger forest cover is affected, it derails the efforts being put towards combating climate change. In fact our efforts towards climate change should be more robust and quick. The more we delay in dealing with it, the worse will be the impacts.

At this moment, as described in the words of a Physicist 'Every solution for Climate Change Mitigation has a dark side to it, which makes it dangerous. Therefore we need to move out of this complex dilemma and make a decision that will save humanity

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Nuclear power & reactors worldwide

Location	Nuclear electricity generation, 2016 (billion kWh)	Share of total electricity production, 2016 (%)	Number of operable reactors*	Nuclear generating capacity* (MWe)
Argentina	7.7	5.6	3	1627
Armenia	2.2	31.4	1	376
Belgium	41.3	51.7	7	5943
Brazil	15.9	2.9	2	1896
Bulgaria	15.8	35.0	2	1926
Canada	97.4	15.6	19	13,553
China	210.5	3.6	36	32,637
Czech Rep	22.7	29.4	6	3904
Finland	22.3	33.7	4	2764
France	384.0	72.3	58	63,130
Germany	80.1	13.1	8	10,728
Hungary	15.2	51.3	4	1889
India	35.0	3.4	22	6219
Iran	5.9	2.1	1	915
Japan	17.5	2.2	42	39,952
Mexico	10.3	6.2	2	1600
Netherlands	3.8	3.4	1	485
Pakistan	5.1	4.4	4	1040
Romania	10.4	17.1	2	1310
Russia	179.7	17.1	35	26,865
Slovakia	13.7	54.1	4	1816
Slovenia	5.4	35.2	1	696
South Africa	15.2	6.6	2	1830
South Korea	154.2	30.3	25	23,081
Spain	56.1	21.4	7	7121
Sweden	60.6	40.0	9	8849
Switzerland	20.3	34.4	5	3333
Ukraine	81.0	52.3	15	13,107
UK	65.1	20.4	15	8883
USA	805.3	19.7	99	99,678
Total**	2490	11.5	447	392,080

*as of 01.05.2017

Sources:KNEB, WNA, IAEA

**The world total includes six reactors on Taiwan with a combined capacity of 4927 MWe, which generated a total of 35.1 billion kWh in 2016, accounting for 16.3% of its electricity generation.

AFRICA'S NUCLEAR FACTS AND FIGURES

South Africa is the only African country with fully functioning nuclear reactors, it is also the only independent state in the world to voluntarily end its own nuclear weapons programme, disassembling its weapons in the early 1990's.

South Africa plans to build eight new nuclear power plants totaling up to 9,600 megawatts by 2030 as part of their estimated \$37 billion nuclear expansion program.

According to the World Nuclear Association, countries actively considering nuclear power programs include Nigeria, Ghana, Senegal, Namibia, Sudan, Uganda and Namibia, while countries already developing plans include Nigeria and Kenya.

The Africa Energy Outlook notes that sub-Saharan Africa "includes three of the ten-largest uranium resource-holders in the world," which include Namibia and Niger.

Namibia holds about 8.2 percent of the world's uranium reserves mined from two sites to fuel nuclear power stations around the world.

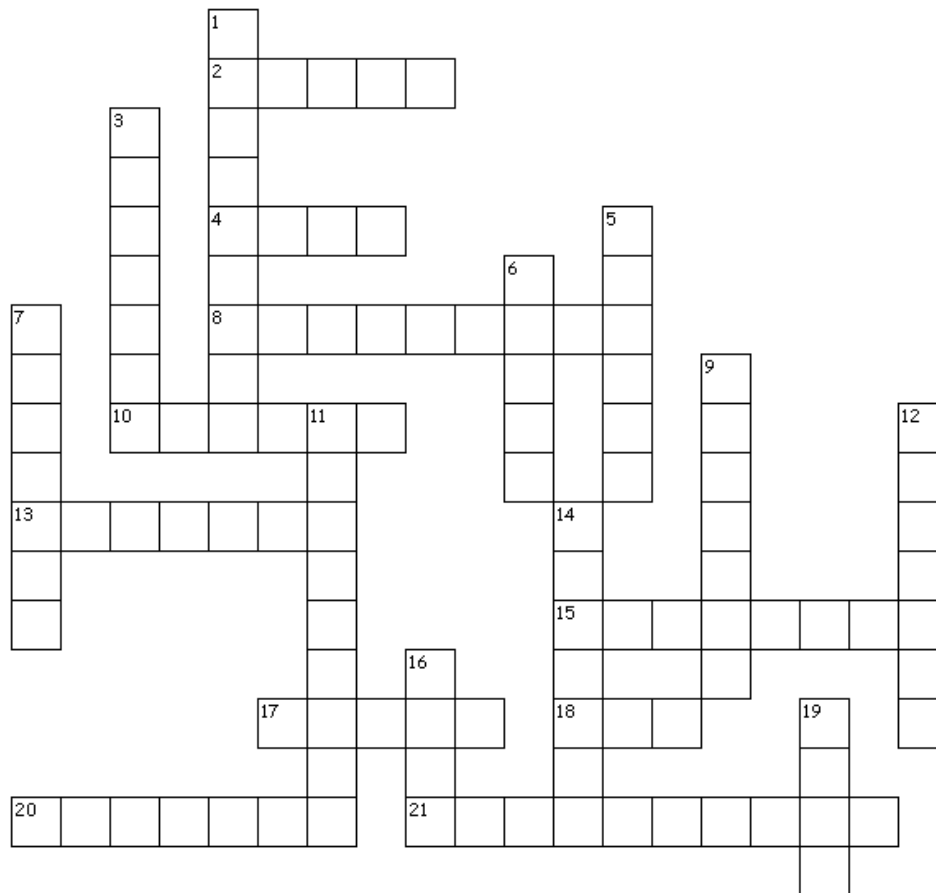
Niger also has two uranium mines which supplies about 7.7 percent of the world's uranium.

Koeberg Nuclear Power Station, Capetown, South Africa



Nuclear Science & Technology

CROSSWORD PUZZLE

**Across**

- 2.** is the least penetrating radiation and can be stopped (or absorbed) by a sheet of paper.
4. Basic unit of a chemical element
8. To expose to some form of radiation
10. Too much ionization of body tissues may cause
13. Element that contain equal numbers of protons but different numbers of neutrons in their nuclei
15. A material that stops ionizing radiation
17. Rate at which energy is transformed?
18. An atomic particle that is electrically charged, either negative or positive
20. Core of an atom
21. Total no of protons and neutrons

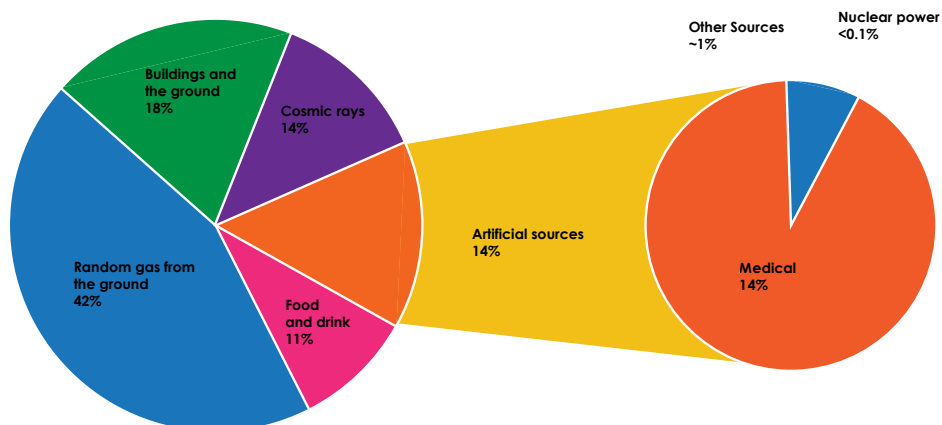
Down

- 1.** Transfer of heat through space
3. Energy at motion
5. Ability to do work
6. Electromagnetic radiation of the shortest wavelength and highest energy
7. Chemical element with symbol Th
9. Splitting of a heavy nucleus into two roughly equal parts
11. Negatively charged particles of atom
12. Headquarters of International Atomic Energy Agency
14. Fuel most widely used to produce nuclear energy
16. Radiation that can be stopped by a thin sheet of aluminum.
19. Term denoting the quantity of radiation or energy absorbed in a specific mass

[Answers on Page 25](#)

RADIATION SOURCES AND FACTS

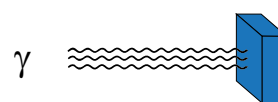
Sources of background radiation



alpha: fast-moving helium nucleus, stopped by air, skin or paper



beta: high energy electron, stopped by aluminium plate or glass



gamma: high energy photons, stopped by, dense material, such as concrete or water

Protection from radiation

Time: Dose is reducing by limiting exposure time.

Distance: The intensity of radiation decreases with distance from its source.

Shielding: Barriers of lead, concrete or water give good protection from penetrating radiation such as gamma rays.

Containment: Radioactive materials are confined to keep them isolated from the environment.

The international commission for radiological protection (ICRP) has developed a system for protection with three basic principles:

Justification: No practice involving exposure to radiation should be adopted unless it produces a net benefit to those exposed or to society generally.

Optimization: Radiation doses and risks should be kept "as low as reasonably achievable" (ALARA), economic and social factors being taken into account.

Limitation: The exposure of individual should be subject to dose or risk limits, above which the radiation risk would be deemed unacceptable.

What is radiation?

Radiation is energy being transmitted through space. Visible light, ultra-violet light transmission signals from TV and radio communications are all forms of radiation that are common in our daily lives. These are all referred to as 'non-ionizing' radiation.

Radiation particularly associated with nuclear medicine and the use of nuclear energy, along with X-rays, is 'ionizing' radiation.

Key points

- Radiation is **easy to detect**, even at extremely low levels.
- Radiation **exists naturally** everywhere at widely varying levels. Places exist where people live with 100 times higher than average background from the ground. A few areas even have levels 1000 times the average.
- Mankind has evolved in a world with strongly differing background radiation without developing a sense to detect it.
- Radiation has always been around and is now **well understood**. It has been used and studied for more than 100 years.

THE INTERVIEW



Peter Mutegi, a Nuclear Power Plant Engineering graduate from the KEPCO International Nuclear Graduate School (KINGS) in South Korea works with the Kenya Nuclear Electricity Board. The phlegmatic, resourceful and visionary Mutegi is keen to play his role in nurturing the Nuclear Power Programme. He shared his thoughts and aspirations with The Fission magazine's Dennis Nkonge.

Kindly describe your typical workday?

My typical official daily timeline runs from 8 a.m. to 5 p.m. I am engaged in the Technical Affairs

Directorate and tasked with undertaking relevant technical studies, with regards to the implementation of Kenya's nuclear power programme. I work closely with the teams in the Nuclear Safety, Reactor Technology Assessment, Research Reactor Development and Workforce Planning projects among other duties.

What is the greatest challenge you have encountered in your work life so far?

I am engaged in pioneering a new and sophisticated technology for electricity generation in the country. My greatest challenge has been to be the voice of reason on why we need to power our electric grid through nuclear technology. But again, somebody

has to demystify the idea and provide factual information on the subject, and I am glad to be part of the conversation.

Why did you decide to study and pursue career in nuclear field?

In my final year of undergraduate studies, I got to learn about Kenya's quest for Nuclear Power Development for electricity generation. I had a desire to gain specialized engineering training, beyond my undergraduate studies, so as to be marketable in the job market. I took up a chance to study for a Master's Degree in Nuclear Power Plant Engineering in Korea at the KEPCO International Nuclear Graduate School. Upon graduating I joined the Kenya Nuclear Electricity Board to aid in the development of the Nuclear Power Programme.

Where were you born and raised?

I was born in Chuka, Meru South and grew up in the rural farmlands of Chuka on the slopes of Mt. Kenya. From this, I drew a wealth of knowledge on how to practice farming.

Tell us something you remember about your early school life

I was a teachers' pet and did remarkably well in my studies; I also enjoyed tutoring my fellow classmates.

What is the most memorable moment in your life so far?

I could single out, among many others, being a recipient of the 2016 Korea Nuclear Society

scholarship award.

Which character trait defines you the most?

I bet laid-back and visionary.

What your all-time favorite movie or novel?

My all-time favorite movie is Law Abiding Citizen. It was a 2009 release.

If you were a character in a movie which one would you be?

Clyde Shelton in the Law Abiding Citizen movie. His wit at beating the evil justice system is endearing.

Any special gift or talent?

Pass. I am still on the lookout for one to pop up.

What is your view on Kenya having a nuclear power plant?

Kenya's ambitions to be an industrialized country present a great opportunity for the Kenyan people to mine their potential and live the best of their lives. The greatest and most outstanding enabler for a growing industry is energy which can be sourced from a number of sources, both renewables and non-renewables. Nuclear power provides a solution for clean, stable, reliable and cheap (long-span of energy supply \approx 80 years) power. Adopting Nuclear technology into the Kenyan energy mix will provide a baseload source that is able to counter the challenges presented by the traditional

sources (geothermal, coal, diesel, gas, solar and wind).

The case for nuclear power for electricity generation in Kenya should not be on a "if basis" but rather on a "when basis".

Who is your favorite musician?

Hillsong Worship. It is an Australian Christian music praise and worship group. Their melody and lyrics are uplifting and renewing to the soul.

What drives you?

The need to be the necessary positive change; we are faced with countless challenges in our lives and being able to be part of the solution and bringing change (however small) in every task I assume is my all-time drive.

Who is your role model? Why?

My dad. He has inspired me to look beyond my immediate circumstances and be the best version of myself.

What was first job from college

I took up a Sales Engineer job at the coast-based Waterways Coast Limited. I drew numerous lessons on product branding and how to stand out in a market that offers similar and at times more superior products.

What's is your major achievement?

Finding an active role in the nuclear industry, which forms

one of the most sophisticated industries ever built by man

What are you struggling with at your age?

Chasing my overly ambitious dreams but at the same time trying to manage my expectations.

Tell me about a project or accomplishment that you consider to be the most significant in your career.

I quit my first job to take up postgraduate studies in Nuclear Engineering. This was a major shift in my career trajectory owing to the fact that the Nuclear Engineering industry is underdeveloped in the country. But again, this presents more opportunities in places where few dare to venture.

What's your superpower, or what's your spirit animal?

My spirit animal is the wolf. I find great connection to intelligence, instinctiveness, and freedom.

If you could start all over again, would you change your career path in any way? Why?

Yes, I would take up Aeronautical Engineering. This was my childhood dream career; the ability to design and manufacture air flight capable machines excites me to this day.

THE EXPERIENCES AND EPIPHANY OF AN INTERN



Belinda at her office workspace handling her office duties

By Belinda Olango

Who would not be grateful to have started his or her career journey at the Kenya Nuclear Electricity Board (KNEB)! I cannot explain how thankful I am to have landed an opportunity at KNEB. My first feeling after setting foot at the Kawi Complex offices for the first time, was one of anxiety.

Firstly, I had no idea what nuclear energy is and how electricity is generated using nuclear technology. Everyone has their day to learn, so I resolved to learn more during my internship.

My mission during the internship was clear cut for me; to know what nuclear energy is and how the electricity is generated. I hit the ground running. Fortunately, the Publicity and Advocacy Directorate where I am attached also happens to be where the KNEB documentation centre is domiciled. Thus, I had unfettered access to all resources.

I started by reading various documents in the library, and seeking clarification from my colleagues on aspects or concepts I needed further elaboration on. They were more than willing to assist and share the knowledge they have gathered while working at KNEB.

One of the delightful experiences was witnessing great team work amongst colleagues who are eager to share their knowledge and also learn more about the developments in the nuclear industry globally.

When I started my internship, I had some apprehension if I would ever understand nuclear energy and explain it convincingly to someone else. But that is not the case at the moment because KNEB has pool of resources to explain nuclear energy in the simplest possible way; there are plenty of information, education

and communication materials that break down nuclear energy for all kinds of audiences.

I can now confidently share concepts and terminologies to explain, not only to myself but the public, what nuclear energy is. Simply put nuclear energy is generated in a nuclear reactor when uranium atoms split, generating heat that is used to heat water to generate steam that turns a turbine to generate electricity that is taken to a transformer and supplied to people's homes. I have also learnt other sources or ways of generating electricity and now understand how Nuclear energy compares favorably with geothermal and coal as baseload power.

Through the internship, I have been able to understand and link the theories we learnt at school and practice on the critical role of communication in an organization. In KNEB, the main role of publicity and advocacy is to sensitize, educate and inform all stakeholders on nuclear energy development in Kenya and nuclear technology in the simplest form. This task requires high level of ethics, knowledge, commitment and transparency which I witnessed by how they fact check and represent facts on this highly misunderstood topic to address all the misinformation out there about nuclear energy.

My internship experience has been awesome and exciting. Among the high profile events I have participated in is KNEB being awarded the ISO 9001:2015 certification by Kenya Bureau of Standards and the Agricultural Society of Kenya's Nairobi International Trade Fair at Jamhuri Park.

I have immensely enjoyed my internship experience. I would like to encourage as many young Kenyans out there looking for internship and job opportunities to consider the nuclear electricity industry.

Thank you KNEB for the opportunity as I continue to learn.

Belinda engages stakeholders visiting the KNEB stand at the Nairobi International Trade Fair on matters regarding nuclear electricity.



THE EVOLVING ROLE OF HUMAN RESOURCE MANAGEMENT



By Hilary Kipchirchir

Traditional Human Resource Management is transforming and adding new critical roles. The paradigm shift in the role involves HRM metrics, strategic directions and measurements to demonstrate their worth so as to prevent chaos among employees and to bring balance among all stakeholders of an organization.

Traditionally, a human resource professional was expected to be a technical expert having deep knowledge and understanding of compensation and benefit practices. A human resource person dictated the rules and told what was and what was not expected based on the policies and procedures of an organization. They were also responsible for ensuring stability and consistency in all the processes of an organization.

The new role of an HR professional has been aligned with personnel and administration functions. The human resource department has been given the task to position the organization for constant growth and change where they are expected to be more participative providing recommendations based on technical and legal expertise and guide the objectives of the organization proactively enhancing the company's profitability.

The core functions of the HR department are recruitment, management and offering direction to the human resources. They are also responsible for providing the necessary tools, knowledge, information, offer administrative services such as coaching, training and talent management for the rest of the organization's employees in order to successfully operate. Furthermore, HR department is responsible for overall development of an organization by generating a culture through establishment of rules and regulations to provide a conducive environment in line with today's corporate.

Unlike previously, HR professionals decide the priorities and needs. HR makes their own recommendations towards the approaches and solutions that are likely to improve the ability of the employees to better their performance contributing to effective growth of the organization.

THE TOP FIVE MUST VISIT SPOTS IN KENYA



By Irene Njoroge

As the cliché goes work without play makes Jack/Mary a dull boy/girl. Given the rigours of daily life, it is important to create time to rest and rejuvenate. Most people believe that resting is taking leave and going to the village to rest mostly in December.

However, there are many places where one can go for holiday and rest after working hard building the nation. Here are some sites where one can visit in Kenya and tick off their bucket list as a holiday excursion as a local tourist especially for nature lovers and outdoor people.

1 Maasai Mara National Reserve

Maasai Mara National Reserve is one of the world's most magnificent game reserves. Bordering Tanzania, the Mara is the northern extension of the Serengeti and forms a wildlife corridor between the two countries.

The park is famous for the **Great Migration**, when thousands of wildebeest, zebra, and Thomson's gazelle travel to and from the Serengeti, from July through October. The park is also known for providing excellent predator sightings, thanks to its relatively large populations of lion, cheetah, and leopard - especially in the dry months from December through February.



2 Amboseli National Reserve

The reserve is one of the best places in Africa to view large herds of elephants up close. Other wildlife commonly spotted in the park includes big cats, such as lion and cheetah, as well as giraffe, impala, eland, waterbuck, gazelle, and more than 600 species of birds.

3 Tsavo National Park

Kenya's largest park, Tsavo, is divided into two: **Tsavo West and Tsavo East**. Together these parks comprise four percent of the country's total area and encompass rivers, waterfalls, savannah, volcanic hills, a massive lava-rock plateau, and an impressive diversity of wildlife. Located midway between Nairobi and Mombasa, Tsavo East is famous for photo-worthy sightings of large elephant herds rolling and bathing in red dust.

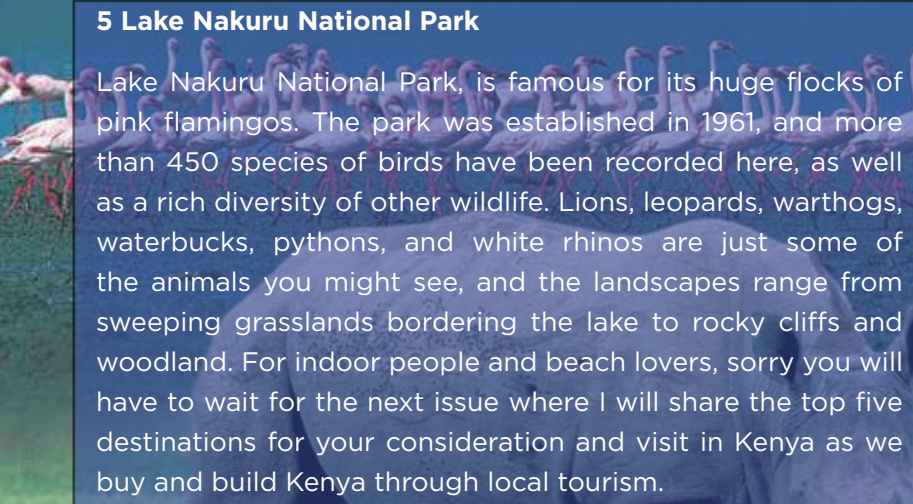


4. Lake Victoria

Lake Victoria is the world's largest tropical lake and is the jewel in the Great Rift Valley region. The lake then feeds the Nile River, which was one of the world's longest and most historically significant rivers. The lake itself is shared by Kenya, Uganda, and Tanzania and plays an important role in each country.

5 Lake Nakuru National Park

Lake Nakuru National Park, is famous for its huge flocks of pink flamingos. The park was established in 1961, and more than 450 species of birds have been recorded here, as well as a rich diversity of other wildlife. Lions, leopards, warthogs, waterbucks, pythons, and white rhinos are just some of the animals you might see, and the landscapes range from sweeping grasslands bordering the lake to rocky cliffs and woodland. For indoor people and beach lovers, sorry you will have to wait for the next issue where I will share the top five destinations for your consideration and visit in Kenya as we buy and build Kenya through local tourism.



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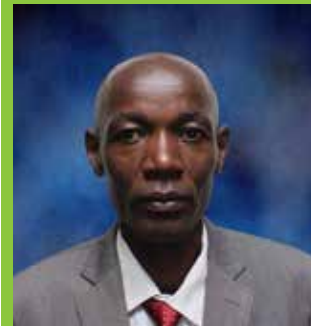
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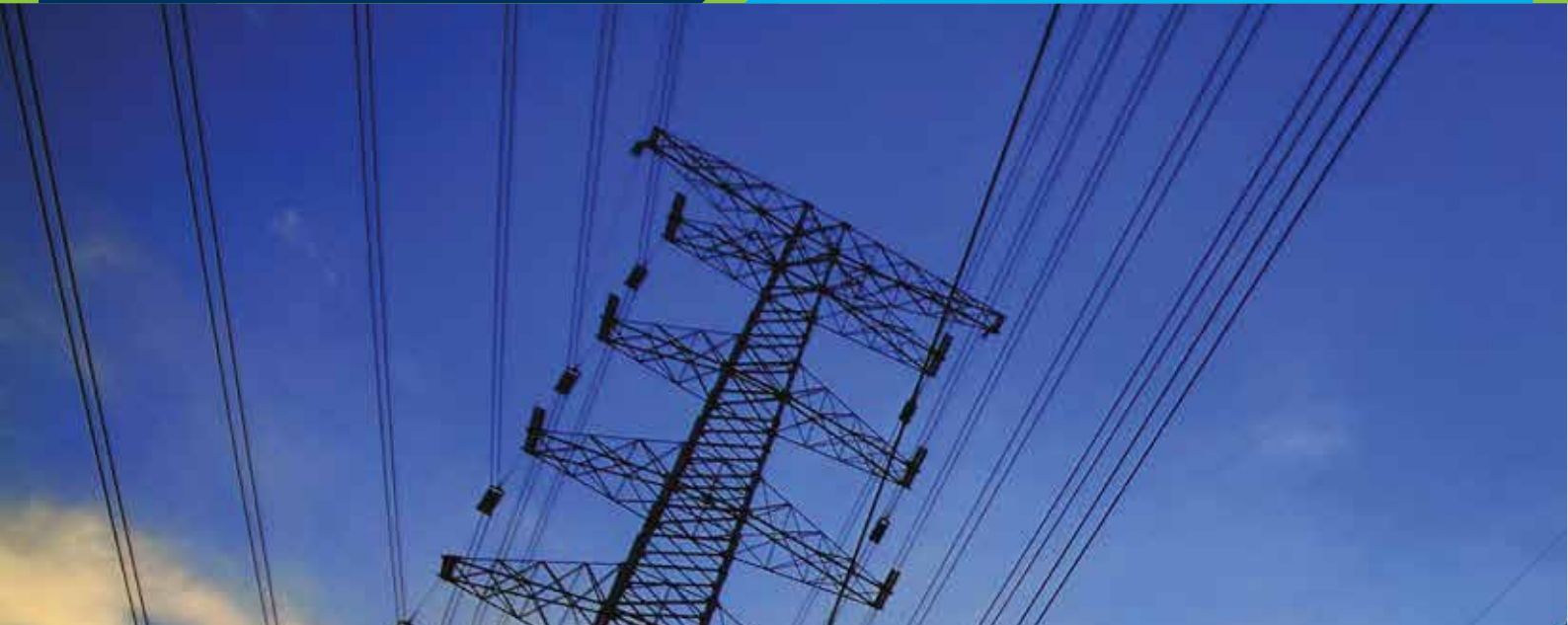
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