

2017

## AFRICAN YOUNG GENERATION IN NUCLEAR (AYGN)

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### AYGN – KYGN INTEGRATED WORKSHOP ON NUCLEAR ADVOCACY AND COMMUNICATION



**“ BUILDING THE CAPACITY ON NUCLEAR ADVOCACY AND COMMUNICATION IN AFRICA”**

**Safari Park Hotel, Nairobi | 29<sup>th</sup> – 30<sup>th</sup> November, 2017**

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## WORKSHOP REPORT

*“The integrated workshop on Nuclear Advocacy and Communication provided a platform for different stakeholders to engage and to learn best approaches in; Communicating benefits of Nuclear Science and Technology, Risks and Crisis communication, discuss Nuclear Opportunities and Challenges in Africa, best practices in Nuclear Safety and Security, Nuclear Advocacy and Stakeholders engagement.”*

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## FORWARD

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African Young Generation in Nuclear (AYGN) is non-profit organization launched formally in Nairobi during the Inaugural Youth Nuclear Summit held at the Kenyatta International Convention Center from 27th – 30th March, 2017. The network brings together national Young Generation in Nuclear (YGNs); national networks for young professionals in nuclear field and other related disciplines in Africa. It is a continental affiliate body to the International Youth Nuclear Congress, with prime mission to address the socio-economic issues of the continent through promoting the peaceful uses of nuclear science and technology applications in Africa. AYGN pursues the realization of this mission by educating the general public and facilitating knowledge transfer from the current generation of leading nuclear experts to the young generations. This is effectively done by offering a platform, through seminars, workshops, conferences (at national, regional and international level), to share, exchange ideas and network on issues related to nuclear science and technology.

In its endeavors, AYGN and affiliate networks works closely with African governments, private sector, universities and other institutions of learning and professionals' bodies in the allied fields to build a sustainable nuclear future through empowerment of young professionals in the industry. It is worth to note that, the network seeks to partner with key institutions and organizations in Africa more importantly the African Commission on Nuclear Energy (AFCON) and the African Union to play an integral and leading role in building the capacity of young people in the pursuit of peaceful applications of nuclear science and technology. Through this partnerships and collaborations, we envision training opportunities in engineering (including nuclear engineering), health sciences and other relevant courses to enable Africa reap the immense benefits of nuclear technology.

Most recently, AYGN entered into Memorandum of Understanding (MoU) with Russian State Corporation for Nuclear Energy (ROSATOM) through its international network entity – 'RAIN' based in South Africa. Some of the key benefits of the MoU include: *promotion of educational opportunities for African youth at educational institutions in Africa and Russia; promotion of knowledge transfer and skills development; social and educational projects in Africa, realized jointly for the purpose of promoting and increasing public acceptance of nuclear energy in Africa, including the development of educational materials on nuclear energy in English and other languages, spoken in interested regions hence enhancing public education & awareness and ensuring preservation of Nuclear Information in Africa.*

In the same spirit, other key stakeholders including vendor technology companies from different countries within and outside Africa have also expressed their interests to partner with the young professionals by entering into such cooperative agreements. AYGN leadership looks forward to building strong partnerships and collaborations to enhance concerted efforts in steering Africa's development agenda through peaceful applications of nuclear science and technology.

It is imperative to note that AYGN has lined up activities throughout 2017 to 2019 to engage key stakeholders, young people and the general public on matters nuclear. Therefore, we look forward to continued collaborations and partnerships from our partners and all stakeholders in the industry.

*Raphael Chesori,  
Vice President – Kenyan Young Generation in Nuclear /  
Secretary General - African Young Generation in Nuclear &  
Alumni - World Nuclear University Summer Institute (2011)*

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## 1.0 INTRODUCTION

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The AYGK-KYGN integrated nuclear workshop was a co-located event in the Future Energy East Africa Conference hosted by the Kenya's Ministry of Energy and Petroleum. The joint opening plenary was graced by Dr. Joseph Njoroge, the host ministry's Permanent Secretary and Hon. Eng. Simon D'Ujanga, the Minister of State for Energy and Mineral Development, Uganda among other dignitaries in energy sector in the region. The plenary speakers included senior management representatives from; McKinsey & Company (SA), Eskom Enterprises (SA), Siemens (Kenya), Kenya Electricity Generation Company (KenGen) and Kenya power among others. An inspirational keynote on developing East Africa's Future leaders was delivered by Prof. Izael Pereira Da Silva, Deputy Vice Chancellor –Research and Innovation – Strathmore University (Kenya).

In his opening remarks, the Permanent Secretary noted that Kenya is making tremendous steps in exploring available energy options to guarantee reliable power supply; an enabler of Kenya's Vision 2030 which aims at transitioning the country to a middle income economy. In this breadth, Kenya has made significant steps towards inclusion of nuclear electricity in the energy mix. The Kenya Nuclear Electricity Board; the promoter of nuclear energy developments in the country, asserts that Kenya will have its first Nuclear Power Plant by the end of the next decade (2027). On his part, Uganda's minister of energy elaborated on the robust energy roadmap laid down by Ugandan government to ensure a universal access to affordable, reliable and modern energy services.

The plenary speakers laid emphasize on the need for East Africa region to venture into diversified sources of energy to guarantee its populations reliable and affordable energy that would spur economic growth and creation of job opportunities. This echoed the growing desire in African countries to have nuclear energy in their energy mix that will guarantee security of energy supply for industrial revolution.

The two day workshop on Nuclear Advocacy and Communication was indeed timely. It provided a platform for different stakeholders to engage and enhance knowledge on best approaches in; communicating benefits of nuclear science and technology, risks and crisis communication, discuss nuclear opportunities and challenges in Africa, best practices in Nuclear Safety and Security, Nuclear Advocacy and Stakeholders engagement.

Over 80 delegates from Africa (mainly Kenya) and around the world participated in this workshop and several a hundreds in the entire Future Energy East Africa Conference, providing a mega networking opportunity to building partnerships and collaborations in promoting peaceful uses of nuclear science and technology in Africa. Participants drawn from academia, research institutes, corporate, media, press, government agencies and civil society organizations gained a lot from a pool of prominent speakers and workshop facilitators whose participation was an excellent addition to the workshop agenda.



*Participants follows keenly workshop proceedings*

The workshop organizers also used this forum to distribute nuclear education materials donated by WNU and illuminated on its agenda in building nuclear industry's future leaders. They also shared more on future prospects for collaboration and partnerships in conducting tailor-made programmes in Africa.

## 2.0 INTEGRATED NUCLEAR WORKSHOP THEMES

The integrated workshop on Nuclear Advocacy and Communication provided a platform for different stakeholders to engage and enhance knowledge on best approaches in; *Communicating Benefits of Nuclear Science and Technology, Risks and Crisis communication, discuss Nuclear Opportunities and Challenges in Africa, best practices in Nuclear Safety and Security, Nuclear Advocacy and Stakeholders engagement*; themes spread over the two days of the workshop. In addition, the participants benefited with nuclear education materials donated by World Nuclear University and Rosatom.

The prominent speakers and facilitators at the workshop included; Viktor Polikarov - Regional Vice President and Ryan Collyer, Communication Director from ROSATOM Central and Southern Africa; Prof Kamen Velichkov - Senior Program Manager, Diplomatic Advisor, International Science and Technology Centre; Mrs. Marielle Rogie - Director, Belgian Nuclear Forum; Madam Sheriffah Noor Khamseah Al-Idid Binti Dato Syed Ahmad Idid - Innovation & Nuclear Advocate Alumni, Imperial College, University of London, United Kingdom; Mr. Gaopalelwe Santswere, Senior Scientist, Necsa and President, African Young Generation in Nuclear (AYGN); Mr. Arthur Koteng' – Deputy CEO, Radiation Protection Board (Kenya), Dr. OTWOMA, Chief Scientist, National Commission for Science, Technology and Innovation (Kenya); Senior Staff from Kenya Nuclear Electricity Board (KNEB) among others will co-facilitate working group sessions during the workshop.

The Speakers/Facilitators elaborated on some of the key elements in the IAEA Milestones Approach which formed the basis of the workshop. The IAEA Milestones Approach includes 19 nuclear infrastructure issues, requiring specific actions during each of the three phases;

**Phase 1:** Considerations before a decision to launch a nuclear power programme is taken; a Pre-Feasibility Study will help a country establish a strong national position and answer the key question: why nuclear? This process begins early in Phase 1 after nuclear power is included as an option in the energy strategy.

**Phase 2:** Preparatory work for the contracting and construction of a nuclear power plant after a policy decision has been taken; in this phase, key organizations as well as the legal and regulatory frameworks are established.

**Phase 3:** Activities to contract, licence and construct the first nuclear power plant are undertaken.

Completion of the actions for a phase represents the achievement of the associated milestone. The order in which these 19 infrastructure issues are presented does not imply relative importance. All of them require appropriate attention.

These milestones are:

**Milestone 1:** Ready to make a knowledgeable commitment to a nuclear power programme;

**Milestone 2:** Ready to invite bids/negotiate a contract for the first nuclear power plant;

**Milestone 3:** Ready to commission and operate the first nuclear power plant.

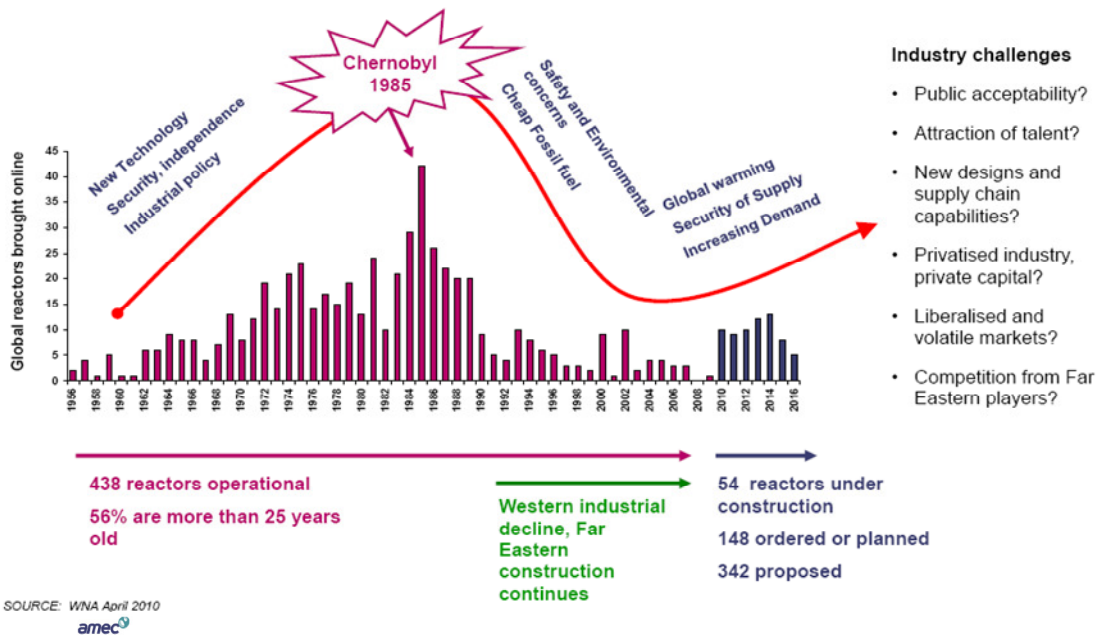
Source: <https://www.iaea.org/topics/infrastructure-development/milestones-approach>.





In the picture: 19 infrastructure issues in new builds (source – IAEA)

## Opportunities nuclear renaissance



Source: WNA April 2010 (presentation by Madam Shariffah, Nairobi, 2017)

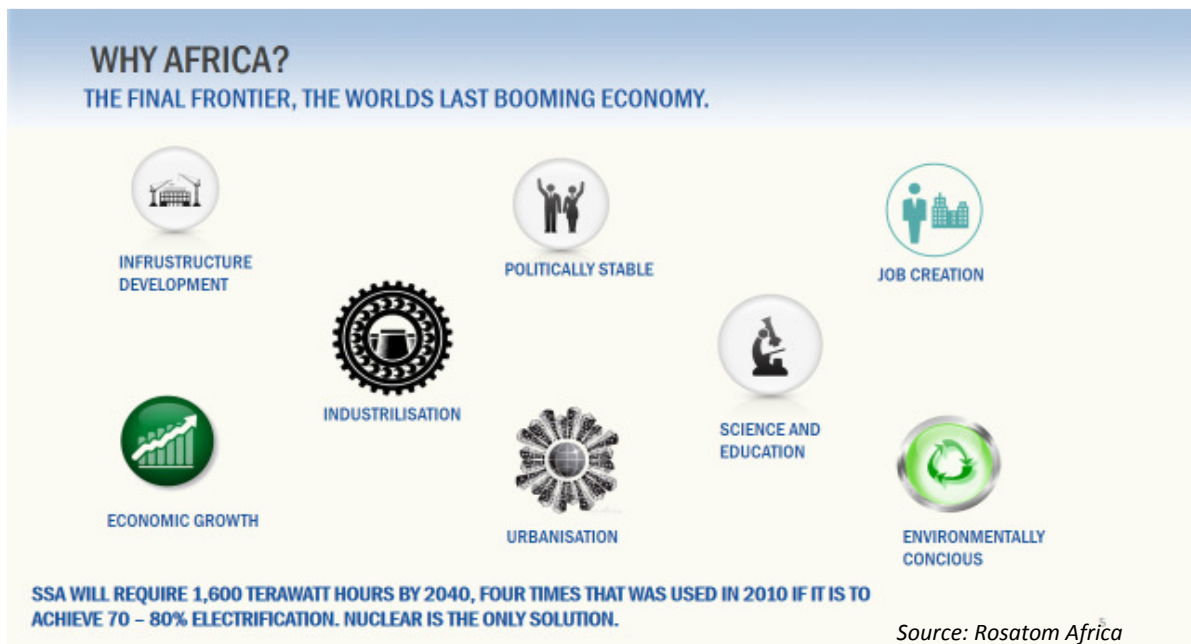


## 2.1 Communicating benefits of Nuclear Science and Technology

- **Speaker:** Ryan Collyer, Communication Director from ROSATOM Central and Southern Africa;
- **Co-Facilitator:** Hilda Mpakany, Technical Research Officer, Kenya Nuclear Electricity Board

Participants were taken through a whole spectrum of numerous benefits of nuclear science and technology more importantly laying emphasize on the need for nuclear energy for sustainable development in Africa. The speaker elaborated on the various benefits drawing from the ROSATOM experience that spans over five decades in the nuclear industry. The speaker expressed explicitly how applications in nuclear medicine and other non-power has put nuclear power states in a better position in addressing their national but also challenges affecting its citizens. The session was moderated by Technical research officer at the Kenya Nuclear Electricity Board who was also the Co-facilitator for the interactive session.

- Some quick take home points included the following;
  - ✓ Nuclear for **Energy** – guarantees reliable baseload power supply for industrial revolution
  - ✓ Nuclear for green **Environment** – very minimal CO<sub>2</sub> emissions as compared to other options
  - ✓ Nuclear for green **Economy** – reliable energy guarantees industrial growth
  - ✓ Nuclear brings about **Employment** – with industrial growth, job opportunities are created
  - ✓ Nuclear Medicine - diagnosis and treatment of non-communicable diseases such as cancer
  - ✓ Nuclear applications in agriculture – food irradiation, pests control, research and development
  - ✓ Nuclear for water desalination - guarantees security of supply of safe and clean drinking water
  - ✓ Radiotracer techniques are used in industrial processes for quality control and assurance
  - ✓ Applied Science - applied nuclear techniques are used to perform rapid research in pollution studies, space exploration, Non Destructive Testing techniques (NDT) e.t.c



## 2.2 Nuclear Opportunities and Challenges in Africa

- **Speaker:** Viktor Polikarov - Regional Vice President, ROSATOM Central and Southern Africa
- **Facilitator/Co-facilitator:** Dr. David Otwoma - Chief Scientist, National Commission for Science, Technology and Innovation.

In this session, the workshop participants had opportunity to explore nuclear opportunities in Africa from the vivid presentation given by the Vice President - Rosatom Africa, who expressed confidence that Africa is in the right position to tap into the numerous benefits of nuclear science and technology. The speaker reiterated the need for nuclear energy for sustainable development in Africa. He noted that the technological advancements in reactor designs and highly trained nuclear personnel guarantees the safety in overall operations, running of nuclear power plants and decommissioning hence there should be no fear for nuclear technology. He also noted that nuclear wastes management is an issue of global concern that is being well managed by the industry as governed by the UN agency for Atomic energy – The International Atomic Energy Agency. The speaker further revisited on the numerous benefits of nuclear technology expressing that Rosatom’s experience in the industry has seen Russia and other nuclear power states benefit from robust programs on non-power applications that includes nuclear medicine, water desalination, food preservation through irradiation, radioisotopes for industrial use among others.

In a rejoinder comment by Co-facilitator; Dr. David Otwoma, the Chief Scientist at the National Commission for Science, Technology and Innovation shared more on the Africa Regional Agreement (AFRA) programs through the IAEA Technical Cooperation (IAEA – TC) that member states in Africa are participating in. He noted that the AFRA projects are aimed at providing concrete foundation for peaceful uses of nuclear science and technology in Africa. He also highlighted on the successes as well as challenges in the implementation of AFRA projects. Later in the day the duo facilitated a very exciting interactive session widening participants’ scope of thinking on nuclear opportunities and challenges in Africa. Observations made from working groups are discussed in the subsequent section of this report.

- Some quick take home points included the following;
  - ✓ High demand for energy supply; electricity demand grows by 4% pa in Sub-Saharan Africa
  - ✓ Over one-half of the states in Africa are declared by World Bank having energy crisis.
  - ✓ The growing population needs a robust economy to sustain its dynamic needs
  - ✓ Industrial revolution is imminent in Africa
  - ✓ Non-communicable diseases has become a pandemic in Africa – Need for nuclear medicine
  - ✓ Need to develop highly trained and competent nuclear manpower in Africa.
  - ✓ Need for well-equipped and well-funded institutions of higher learning, Research & Development in Africa.
  - ✓ Need for jobs creation to cut down high unemployment rate in African Nations





### 2.3 Best Practices in Nuclear Safety and Security and Safeguards (SSS)

- **Speaker:** *Prof Kamen Velichkov - Senior Program Manager, Diplomatic Advisor, International Science and Technology Centre*
- **Facilitator/Co-Facilitator:** *Prof Kamen Velichkov - Senior Program Manager, Diplomatic Advisor, International Science and Technology Centre.*

Prof. Kamen Velichkov – the Senior Program Manager at the International Science and Technology Centre (ISTC) delivered insightful presentation on best practices in Nuclear Safety and Security. The speaker noted that the subject on nuclear safety and security is broad and very sensitive, taking legal dimensions sometimes when there is civil resistance in the use of nuclear technologies. He noted further that it is important for participants to understand the specific safety needs in the different stages of nuclear developments. For instance, the front end of nuclear fuel cycle demands safety and security measures involving uranium mining and transportation, which he underscored as one of the main focus of EU-CBRN projects in Africa managed by ISTC. The speaker drew the attention of participants on the fact that, the IAEA in 1986, following the Chernobyl accident introduced the concept of safety culture and more developments on this concept were done in 1988 and 1991.

He also highlighted on IAEA's 10 Principles for Nuclear Safety which include the following: Responsibility for safety; Role of governments; Leadership and management for safety; Justification of facilities and utilities; Optimization of protection; Limitation of risks to individuals; Protection of present and future generations; Prevention of accidents; Emergency preparedness and response; Protective actions to reduce existing or unregulated protection risks. Prof Kamen drawing from the ISTC's vast experience in managing projects relating to non-proliferations of Chemicals for Mass Destructions (CMD) - Chemical, Biological, Radiological and Nuclear materials (CBRN) in Africa, elaborated on the strategies to deliver projects on nuclear safety and safeguards especially in support to Southern African states within the Southern African Development Community (SADC) bloc. He also enumerated on best practices that involve different key stakeholders who remain influential in promoting nuclear safety in Africa which includes; nuclear experts, civil society organizations leaders, bloggers, journalists, news editors and nuclear industry leaders e.g Rosatom Africa.

- Some quick take home points from his presentations included the following;
  - ✓ Everyone is personally responsible for nuclear safety,
  - ✓ Leaders demonstrate commitment to safety,
  - ✓ Best safety cultures ensures that trust permeates the organization;
  - ✓ Safety culture is an overriding priority in nuclear industry; decision-making reflects safety first
  - ✓ Nuclear technology is recognized as special and unique hence special safety considerations,
  - ✓ Best nuclear safety practice cultivates questioning attitude,
  - ✓ Best nuclear safety practice embraces organizational learning,
  - ✓ Nuclear safety undergoes constant examination.
  - ✓ Nuclear Safety, Security and Safeguards (SSS) are integrated aspects in upholding safety culture in nuclear industry ;
  - ✓ There are standard measures put in place by IAEA and other promoter agencies to guarantee safety and security in Uranium mining and transportation of radioactive materials e.g Basic Safety Standards (BSS).



## 2.4 Nuclear Risks and Crisis Communication

- **Speaker:** *Mr. Gaopalelwe Santswere, Senior Scientist, NECSA and President, African Young Generation in Nuclear (AYGN)*
- **Facilitator/Co-Facilitator:** *Raphael Chesori, Secretary General, AYGN and Alumni World Nuclear University Summer Institute.*

The session was handled in two part; Risk communication and Crisis Communication. The first speaker; Mr. Gaopalelwe Santswere, a Senior Scientist at the South African State Corporation on Nuclear Energy (NECSA) and also the President for African Young Generation in Nuclear (AYGN) elaborated on the need for proper strategies in risk management. In his presentation, he described risk communication as the science-based approach for communicating efficiently and effectively in situation of high stress, high concern or controversy. He further reiterated that risk communicator(s) should be better equipped to think strategically through the risk communication process by developing a thorough Communication Strategy and Implementation Plan.

From his emphatic presentation, the participants had opportunity to explore various risks both perceived and real that are associated with nuclear technologies. The speaker acknowledged that the nuclear industry is facing huge challenges, from the proliferation of nuclear weapons on the Korean Peninsula to the obstacles in Nuclear New Build Programmes planned across the world especially in Africa. He used the example on how NECSA and Rosatom Africa manages its risks hence building trust and confidence among stakeholders and the general public. The speaker emphasized on the need for nuclear entities to conduct risks analysis and execute mitigation strategies to win public confidence in the use of nuclear technologies.

On his part Raphael Chesori - alumni of World Nuclear University Summer Institute and also the AYGN Secretary General elaborated on the complex processes in crisis management that has more to do with well-organized and executed communication plan among different stakeholders in an emergency situation. He described crisis as a situation that is sudden and requiring quick decisions that often calls for change in the routine operations. The speaker emphasized on the need for organizations to institutionalize the four sets of interrelated factors in Crisis Management Plan: Prevention, Preparation, Response and Revision.

- Some quick take home points from his presentations included the following;
  - ✓ Organizations should employ risks assessment strategies to inform on interventions in mitigating the perceived or real risks.
  - ✓ Various risks assessment and management models are utilized
  - ✓ Best practices entails having a dedicated team in managing risks
  - ✓ Crisis communication is a complex process of responding and timely managing a crisis situation.
  - ✓ Crisis management calls for quick response, quick decisions, and rapid changes in the routine operations (Business unusual!)
  - ✓ Ability to mitigate on risks and in managing crisis saves the organizational image and restores confidence among stakeholders.
  - ✓ Risks and crisis communication incorporates a well-managed contingency plan with competent risks/crisis management team!



## 2.5 Nuclear Advocacy: Perspective from the industry

- **Speaker:** *Mrs. Marielle Rogie – Director, Belgium Nuclear Forum*
- **Facilitator/CO-Facilitator:** *Mr. Arthur Koteng’ – Deputy CEO, Radiation Protection Board (Kenya)*

Mrs. Marielle Rogie – the director for Belgium Nuclear Forum delivered insightful presentation to an eager audience on best approaches in nuclear advocacy. Drawing from her previous and vast experiences working with the EU and currently as the spokesperson for nuclear bodies in Belgium, Mrs. Marielle elaborated succinctly why it is important to advocate for nuclear energy. She noted that while engaging in nuclear advocacy, it is imperative to target various stakeholders, what and how to communicate and the important but unique messages for effective nuclear advocacy bearing in mind the possible future challenges in the industry.

The speaker emphasized that nuclear advocacy demands the industry’s professionals/Nuclear advocates to inform the stakeholders - the general public, politicians, corporate bodies, academia, and the press/media/journalists on nuclear technology by providing factual information (facts & figures) while taking proactive position and leading public debates to influence national attitudes and win public acceptance. She noted that nuclear advocate(s) should defend the industry in all aspects and communicate the vision for the future.

The nuclear advocacy expert also reiterated that nuclear energy is a reliable energy option to turn around the economies of the developing countries. She noted that nuclear represents around 15% of electricity worldwide and 24% in Europe with Belgium have around 55% of its electricity from nuclear! She emphasized that the more nuclear advocates explain nuclear technology via simple facts, figures and images, the more people understand, alleviate fears and accept nuclear energy.

In addition, the speaker echoed other speaker at the workshop on the usefulness and availability of numerous applications of nuclear technology in the people’s daily lives and in the future as it is key driver of the economy of a nation!

- Some quick take home points from her talk and presentations included the following;
  - ✓ Nuclear advocacy entails communicating factual information about benefits of nuclear technology in a creative and convincing way to influence the national attitudes and win public acceptance!
  - ✓ Different messages for different stakeholders e.g Heads of states, Politicians, NGOs, Media, academia, youth e.t.c
  - ✓ The messages targets to debunk the nuclear myths and propaganda spread to cause unnecessary fear among populations.
  - ✓ Need for nuclear energy in the energy mix; nuclear complements other renewable sources, guarantees security of supply and it is a low carbon energy option available now!
  - ✓ Consistency in communicating factual information is key in winning public acceptance
  - ✓ Engaging different stakeholders is not an option but a guaranteed way of influencing national attitudes and winning public acceptance
  - ✓ Leaders; both elected and opinion leaders play key role in nuclear advocacy
  - ✓ Nuclear being a highly political field, it demands that the government and politicians must be convinced and be part of the advocacy process.

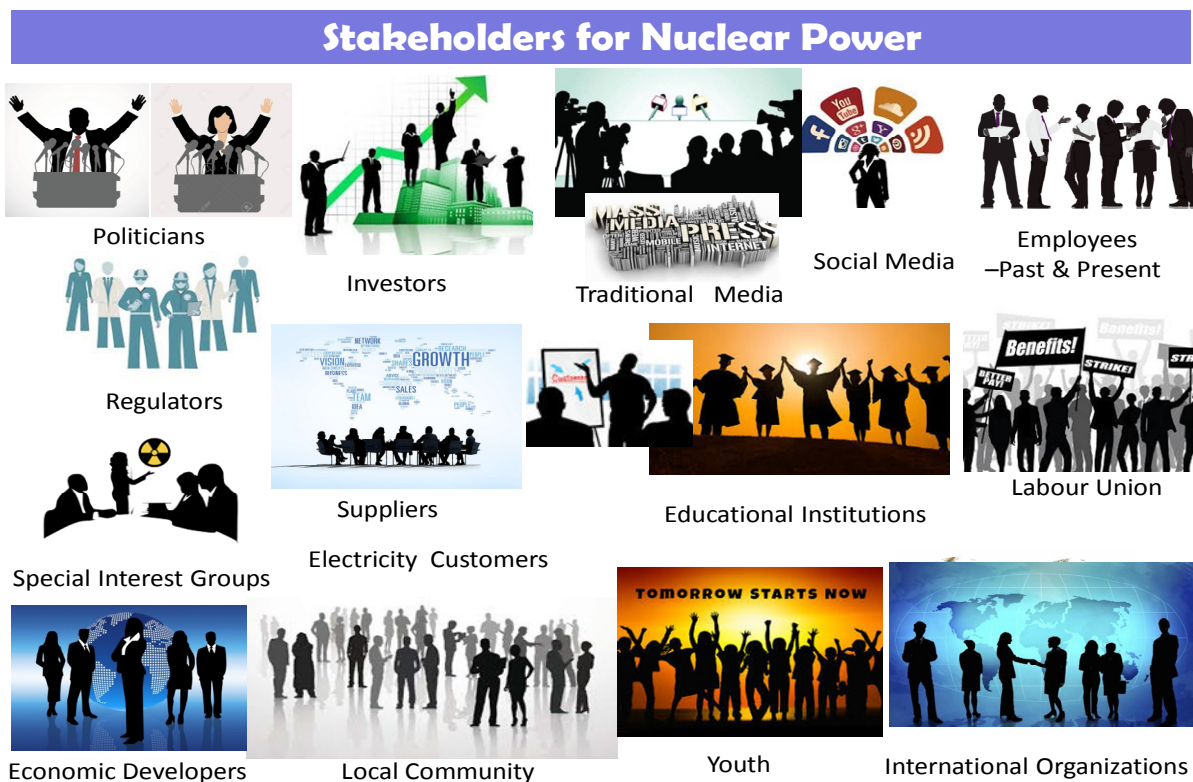


## 2.6 Stakeholders Engagement

- **Speaker:** Madam Sheriffah Noor Khamseah Al-Idid Binti Dato Syed Ahmad Idid, Innovation & Nuclear Advocate Alumni, Imperial College, University of London, United Kingdom
- **Facilitator/CO-Facilitator:** Eng. Edwin Chesire – Senior Technical Officer, Kenya Nuclear Electricity Board (KNEB)

Madam Sheriffah Noor Khamseah, an Innovation & Nuclear Advocate with vast experience in giving talks to high profile delegation graced the integrated workshop on nuclear advocacy and communication. The eloquent speaker and staunch nuclear advocate shared her experiences from around the world on how best to engage stakeholder in the nuclear industry. She spoke to an audience that was very keen to enrich their knowledge regarding who are the key stakeholders in the industry and when to engage them? How to engage them? What to engage them on? and who to engage them?

The speaker gave vivid examples on how Malaysia, UK and other countries have managed to keep key stakeholders in nuclear engaged in view of enhancing public acceptance of nuclear energy. In her talk/presentation, Madam Shariffah noted that stakeholders are dynamic depending on the stages in nuclear energy developments. Most newcomer countries have governments and politicians as the primary target stakeholders to inform on nuclear technology applications for the purposes of influencing policies and legislations in favor of nuclear energy. She implored that the scenario changes as the country advances in the nuclear developments and at some point the politicians become nuclear advocates!



Source: Madam Shariffah, Nairobi -2017

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- Some quick take home points from her talk and presentations included the following;
  - ✓ Knowing the distinctive but integral roles of different stakeholders is key in achieving the common desired objective.
  - ✓ There are two main categories of nuclear stakeholders;
    - Statutory bodies charged with mandate to regulate or promote nuclear developments in a country e.g National Regulator, Boards, National Institutes e.t.c.
    - Non-statutory bodies involved in matters nuclear e.g nuclear vendors, or private companies, professional bodies, NGOs, Civil Society e.t.c
  - ✓ Stakeholders engagement is an all-inclusive process that demands genuine collaborations and partnerships.
  - ✓ Formal agreements and commitments may become necessary in stakeholders engagement
  - ✓ The state ownership of stake in nuclear power investment is key in ensuring the sustainability of the programme.
  - ✓ Youth have become undisputable key stakeholders in the nuclear industry.
  - ✓ Politicians and trade unions could be the best targets to drive nuclear advocacy agenda
  - ✓ Explaining nuclear technology via simple facts, figures and images, makes stakeholders understand easily, subliming their fears and acceptance of nuclear energy becomes inevitable!



*Participants in working group on stakeholders engagement during the workshop*



### 3.0 EMERGING KNOWLEDGE FROM WORKING GROUP SESSIONS

The interactive (working group) sessions were facilitated by the speakers in the respective thematic areas. The speakers were assisted by co-facilitators listed in those thematic areas as well. The working group sessions provided participants with a platform to have one-on-one interaction with the expert speakers/facilitators deepening their understanding in the subject under discussion as far the various workshop themes were concerned. The recommendations from the working groups became critical in shaping the agenda on nuclear advocacy and communication going forward.

#### 3.1 Day 1: Interactive Sessions

##### 3.1.1 Working Group 1: Nuclear opportunities and challenges in Africa

- **Facilitator:** Viktor Polikarov - Regional Vice President, ROSATOM Africa
- **Co-facilitator:** Dr. David Otwoma - Chief Scientist, NACOSTI

##### ➤ Opportunities:

- Need for food security; nuclear for pests control, food preservation through irradiation, e.t.c
- Desalination of water - guarantees populations access to clean and safe drinking water
- Industrial revolution is imminent in Africa; creating employment opportunities for youth
- High energy demand; nuclear guarantees low cost power hence lowering cost of living
- Improve provisions of healthcare through nuclear medicine practices
- Industrialization through growth of other related sectors (read industries)
- Increase in research fields hence improve knowledge base.

##### ➤ Challenges:

- Cost of NPP - the initial capital of Nuclear Power Plant (NPP) is expensive
- Concern over security and safety issues - terrorism related criminal activities in Africa
- Negative public perception on nuclear energy
- Decision makers are not properly informed on the benefits on nuclear energy.

##### 3.1.2 Working Group 2 & 3: Communicating: benefits of nuclear, nuclear risks and crisis

- **Facilitator/Co-Facilitator:** Ryan Collyer –Rosatom |Hilda Mpakany, KNEB
- **Faciliator/Co-Facilitator::** Mr. Gaopalelwe Santswere, - NECSA | Raphael Chesori, - AYGN/KYGN

##### ➤ Notable Risks:

- Political risks
- Environmental risks
- Financial risks
- Demand vs supply risks
- Security risks( both physical and cyber-crime)
- Inadequate stakeholders involvement

##### ➤ Challenges:

- Inadequate nuclear knowledge among stakeholders including media and journalists
- Inadequate translation of nuclear knowledge into local languages



- Nuclear field is technology intensive demanding high technical skills among staff
- Need to develop a localization plan to communicate nuclear benefits to populations in Africa
- Implicit methods of collecting data and dissemination of information
- Projects preferences and funding unfavorable for nuclear
- Security challenges.

➤ **Recommendations;**

- Involve the government and decision/policy makers in nuclear workshops
- Standardized research documents for African Young Generation Networks
- Strengthen local institutional capacity for human resource development and capacity building.
- Proper feasibility studies for countries with interests in developing nuclear power programs
- Innovative and creative approaches in communicating nuclear benefits e.g debates, use of social media.
- Need to build strategic alliances
- Formal engagement and commitment by stakeholders
- Boost the interest for STEM through education awards and scholarships for young people.

## 3.2 Day 2: Interactive Sessions

### 3.2.1 Working Group 1: Best Practices in Nuclear Safety and Security

- **Facilitator:** *Prof Kamen Velichkov - Senior Program Manager, ISTC, Astana, Kazakhstan*

➤ **Safety, Security and Safeguards (SSS)**

- The group discussed at length the issues and the intertwined relationships in nuclear security, safety and safeguards (sss)
- Radio wastes management - It was noted that imports of nuclear materials into Africa states embarking on nuclear energy developments to be negotiated with vendors whether the materials should be taken back after use.
- It was also observed that misuse of nuclear materials are more risky than Nuclear Power Plants
- It was observed that it is very important to ensure safety and security in Uranium mining;
- The group also noted that there is need for proper communication across the supply chain in regard to transportation of nuclear materials.

➤ **Recommendations;**

- Bolster the exchange of security experiences and skills with countries with established nuclear programs.
- Ensure that there is relevant policy on matters nuclear security
- Ensure enough training and preparedness in managing nuclear safety and security.
- Improve local institutional capacity in human resource development on Nuclear Safety, Security and Safeguards



### 3.2.2 Working Group 2: Nuclear Advocacy and public acceptance

- **Facilitator:** *Mrs. Marielle Rogie – Director, Belgium Nuclear Forum*
- **CO-Facilitator:** *Mr.Arthur Koteng’ – Deputy CEO, Radiation Protection Board (Kenya)*

#### ➤ **Nuclear Advocacy;**

- The working group observed that most nuclear applications in Africa are on non-power and especially the applications in health, agriculture, radiotracer techniques in industry, Non Destructive Testing techniques (NDT), and applied science – research and development
- Promote nuclear medicine and radiopharmaceuticals services in Africa. The working group observed that people from Africa need not to go abroad anymore for nuclear medicine and treatment.
- Creative approaches in communicating benefits of nuclear in medicine (Develop website – to communicate benefit for hospitals, put video tutorials information on the hospital website for patients/public access including leaflets information on safety)
- Clear communication on Benefits vs Risks – nuclear communicators to prove that there is more benefits than risk.
- Develop a strategy on how to communicate all the contents related to health benefits of nuclear technology applications. This includes open sharing of information with the patients before visiting the hospitals.
- Need videos to explain the benefits and use of nuclear in medicines to give confidence to the general public and people concerned.
- Upgrade of health facilities by equipping with essential nuclear medicine instruments and other necessities.

### 3.2.3 Working Group 3: Stakeholder Engagement

- **Facilitator:** *Madam Sheriffah Noor Khamseah - Innovation & Nuclear Advocate*
- **CO-Facilitator:** *Eng. Edwin Chesire – Senior Technical Officer, Kenya Nuclear Electricity Board (KNEB)*

#### ➤ **Engaging stakeholders;**

- Recognizing the integral roles of various stakeholders in nuclear industry
- Role of non - technical person; the ultimate nuclear ambassador!
- Standardized way of engaging stakeholders.
- How to solve conflicts of interests in stakeholder engagement.
- Relevance of information to the public and strategies to apply to influence the stakeholders.

#### ➤ **Recommendations;**

- Continuous and transparent stakeholders engagement.
- Enhance awareness creation among stakeholders and the general public.
- Skilled people to be involved as nuclear advocates; bring on board human skills in advocating for nuclear.
- Need to have a designate spokesperson for organizations engaged in nuclear advocacy.
- IAEA to increase number of ministers from Africa participating in the annual ministerial conference.





## 4.0 ACTION PLANNING: *The Way forward – short, mid and long term strategies*

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1. AYGN leadership to prepare a strategic plan based on the recommendations of the workshop (living document) by February 2018.
  2. The strategic plan to be implemented in view of the existing MoUs and other partnerships in the near future.
  3. Encourage TV interviews with the state owned media in the member states e.g Kenya Broadcasting Company (KBC).
  4. YGNs to be issuing one opinion piece per quarter.
  5. National YGNs to enter into formal agreements and commitment with key stakeholders at national level;
    - KYGN to sign MoUs with Kenya Nuclear Electricity Board (KNEB), Radiation Protection Board (RPB), National Commission for Science, Technology & Innovation (NACOSTI), Kenya Bureau of Standards (KEBS) among other key stakeholders in Kenya as well encourage inter-institutional cooperative agreements between these stakeholders.
    - AYGN to pursue cooperative agreements and partnerships with AFRANEST, AFCONE, AU, WNU, WNA, IAEA, and Nuclear regulators in Africa and around the world.
  6. Intensive media engagement on nuclear advocacy (including training of communication specialists on nuclear communication)
  7. Engagement of the politicians to participate in nuclear events
  8. Enhance effective collaborations between AYGN and its affiliate national networks with ISTC, Rosatom, among other partners and key stakeholders.
  9. AYGN partners to dedicate resources to supporting youth participation in regional and international events in favor of nuclear advocacy initiatives.
  10. Creating public awareness – YGNs and its partners to enhance public awareness initiatives to make people aware of nuclear power.
  11. Encourage clear and transparent communications among stakeholders involved in nuclear.
- Upcoming events for Young Generation in Nuclear networks
- AYGN nuclear advocacy activities at National level (ongoing)
  - IYNC - WIN GLOBAL - WNU 2018 Conference – Bariloche, Argentina, 11-17 March, 2018
    - Registration ongoing <http://www.iync.org/>
  - 2<sup>nd</sup> African Youth Nuclear Summit (AYNS) 2019 – South Africa

## 5.0 CONCLUSION

The workshop was a success coming after the successful youth convention – the Inaugural Youth Nuclear Summit held in March, 2017 at the KICC, Nairobi. It is in the interest of AYG and its national YGNs, with support from key players in the industry especially the partners and collaborators who continue to walk the journey with the young professionals, to take this working relationships a notch higher and open up opportunity frontiers for young people in Africa to learn, share, exchange ideas and network on issues that are pertinent to the industry. This will go a long way to attracting youth talents and pursuit of STEM careers and ultimately play the distinctive but integral role in promoting peaceful applications of nuclear science and technology.

In this regard, AYG envisions building on this partnership and collaborations with global key players in the nuclear industry, especially WNU and its founding partners (IAEA, WNA and WANO) to establish African University for Nuclear Leadership within the auspices of AFCONE/AU to coordinate complementary nuclear leadership programmes that will transform Africa's land scape on matters nuclear. Through such establishment, world nuclear industry leaders and experts will be converging once every year to share, transfer and disseminate knowledge to the young people in Africa hence building a competent industry personnel to address challenges bedeviling the continent.

## 6.0 ACKNOWLEDGEMENT

African Young Generation in Nuclear (AYGN) and its national YGNs especially the Kenyan Young Generation in Nuclear and the South Africa Young Nuclear Professionals Society (SAYNPS) relay the heartily gratitude for the unwavering support from the partners and sponsors, without which the AYGN-KYGN integrated workshop on Nuclear Advocacy and Communication wouldn't have been possible. We single out the enormous support received from the International Science & Technology Center (ISTC) and Rosatom Africa as the Platinum and Silver sponsors respectively. The material contributions (Nuclear Education Materials) from the World Nuclear University cannot go unnoticed and we sincerely very grateful for the support. We also acknowledge Rosatom Africa as AYGN official partner through the MoU signed on July 19<sup>th</sup>, 2017 at Sandton South Africa even as we look forward to signing more MoUs and partnerships in the near future with key regional and international industry players and also national stakeholders through the national YGNs.

We extend our sincere appreciation to the key national stakeholders especially in Kenya and South Africa that includes; Kenya Nuclear Electricity Board, Radiation Protection Board (Kenya), Kenya Bureau of Standards (KEBS), National Council for Science, Technology & Innovation (NACOSTI), Kenyatta National Hospital (KNH), KALRO and related institutions in South Africa including the participating universities in the region for the continued support witnessed since the Inaugural Youth Nuclear Summit (March, 2017) that gave impetus to the youth agenda and the birth of AYGN.

We also take the opportunity to thank once more the regional and international players through International Youth Nuclear Congress for their continued support in one way or the other. Notably, the participation of IAEA during the last Youth Nuclear Summit represented by Prof, Shaukat Abdulrazak, Director of the IAEA's Technical Cooperation who was accompanied by Ms. Tamara Lynne Yankovich - a radiation protection specialist and Melina Belinco an intern at IAEA (Austria); World Nuclear Association represented by the Director General, Mrs. Agneta Rising (United Kingdom).; World Association of Nuclear Operators (WANO) represented by Program Manager, Riccardo Chiarelli (United Kingdom).

Other key institutions/organizations that graced the inaugural youth nuclear summit last March included; The Canadian Nuclear Society, represented by its President - Dr. Peter Ozemoyah (Canada); Institute of Nuclear Business Excellence, represented by the Chief Executive Officer - Prof. Jan Blomegren (Sweden); Nuclear Power Institute; Texas A &M, represented by Prof. Wayne Kinnson, Research Scientist (USA), The International Youth Nuclear represented by the Janin Denis, President, (Germany/France) and Mrs. August Rose Fern, Co-Founder, (USA); SCK-CEN Belgian Nuclear Research Centre represented by Dr. Ir. Kevin Govers, Researcher, Nuclear Fuel Materials (Belgium); Centre for Nuclear Energy Studies, University of Port Harcourt, represented by its Director Prof. Ayoade Oludaye Kuye (Nigeria); NESCA Learning Academy, represented by Ntabatse Matube, Executive Manager(South Africa); Prof. Dmitrii Samokhin, Head of Nuclear Power Station Reactor Development and Design Department, Obnink Institute for Nuclear Power Engineering of the National Research Nuclear University, Mephi (Russia); Dr. Chuna Pin Lee, National Cheng Kung University (Taiwan); Mr. XIAO Mengchao, Senior Engineer, State Nuclear Power Engineering (China) among other skaheloders including the key stakeholder in Kenya as highlighted in preceding sections who remain pivotal in promoting peaceful applications of nuclear science and technology in Kenya.

*"----In unity, we triumph----"*

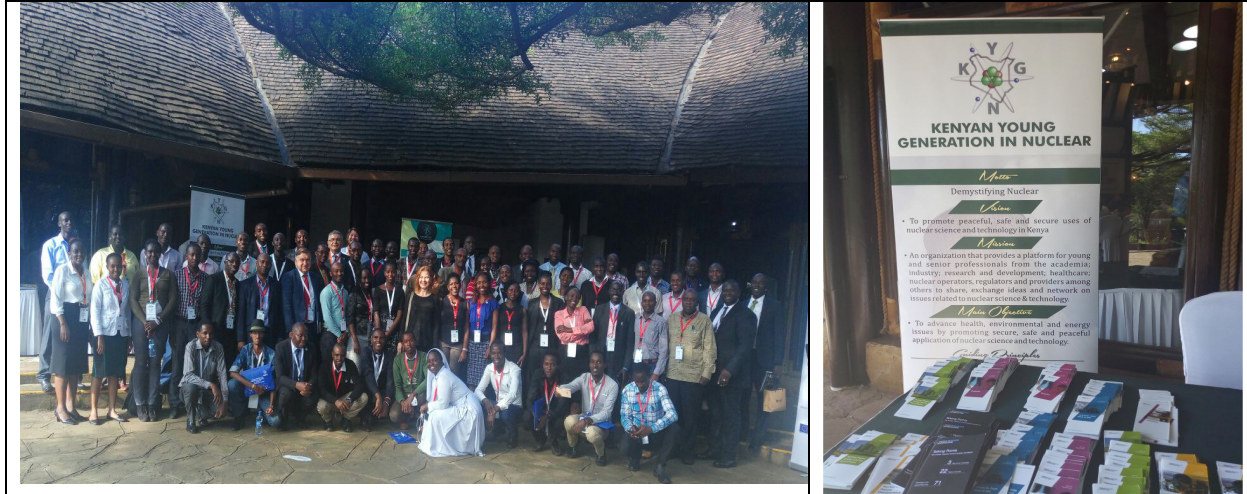
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## ANNEX A: Workshop Pictures



Workshop participants pose for a photo outside Ivory Hall, Safari Park Hotel, Nairobi | WNU Nuclear Education materials



Above: Participant making a comment in a stakeholders engagement session during the workshop

From Left – Right: Eng. Edwin Chesire, Lawyer Kianji, and Raphael Chesori; World Nuclear University alumni from Kenya pose for a photo during the workshop





Prof. Kamen giving a talk/presentation on best practices in nuclear safety and security during day 2 of the workshop



Delegates participates in Future Energy East Africa Expo



Workshop speakers/Facilitators pose for a photo with AYGN/KYGN leaders after the closing ceremony, 30-11-17

# ANNEX B: Workshop Program

**AYGN-KYGN**  
**AYGN-KYGN INTEGRATED WORKSHOP ON NUCLEAR ADVOCACY AND COMMUNICATION**  
 WORKSHOP PROGRAM  
 29-30 NOVEMBER, 2017 | SAFARI PARK HOTEL, NAIROBI

**Safari Park Hotel**

Platinum sponsor: ISTC, MHTU  
 Silver Sponsor: ROSATOM  
 Contributors: WORLD NUCLEAR UNIVERSITY

**Prof. Kamen Velichkov**  
 Dr. Kamen Velichkov combines the work of a career diplomat with his academic research and lecturing. He earned his various diplomatic capacities, including as Foreign Policy Advisor to the President of the Republic of Bulgaria, Charge d'Affaires of the Bulgarian Embassy in Israel, Ambassador of Bulgaria to the Netherlands, Ambassador to Thailand, Head of Public Department of the European Union Delegation to Kazakhstan. He was diplomatic representative to the Organization for Prohibition of Chemical Weapons and a member of its Executive Council. As visiting professor, he lectured at the College of Europe in Belgium, the Kazakhstan. He is currently Senior Programme Manager and Diplomatic Advisor with the International Science and Technology Center in Atlanta.

**Sheriffah Noor Khamesah Al-Idd**  
 Ms. Sheriffah Noor Khamesah Al-Idd, a physics graduate of the Imperial College of Science and Technology, University of London. Presently Ms. Sheriffah is responsible for Nuclear Supply Chain (NSC) and contributes significantly to Financing of Nuclear Power. Ms. Sheriffah regularly meets and presents to industry Associations regarding Opportunities in the Nuclear Supply Chain. Additionally, she has connected and continues to connect international nuclear related organizations and companies to local industry associations including construction, manufacturing and services industry, with a view to enhancing awareness of Malaysian companies regarding business as well as investment opportunities in the nuclear power sector. Ms. Sheriffah's commitment for the promotion of Nuclear Education and Training is widely recognized. She was invited by the IAEA to advise as the Agency on Cooperation on Nuclear HCD between Countries advanced in NPP and Countries embarking in NPP.

**Viktor Polikarpov**  
 He has been the Regional Vice-President of Sub-Saharan Africa, Rosatom since 2014. His aim is to develop and support business activities of the Russian State Atomic Energy Corporation in Africa. He has wealth of experience, with a strong background in international relations and business development. Having started his career with the former Soviet government he occupied many positions, including diplomatic posts in Africa. He has worked for Imarast (UK) in Russia as Vice-President Marketing & Sales of Moraviazspindk, Senior Director Marketing & Sales Middle East & Africa of MVS -USA (USA) and finally CEO of ND Satcom GMBH (Germany), Moscow Branch. Earlier on he worked as Senior Adviser, International Relations at Renova Group, Companies, Director of GPN Nehegas Services S.V., a Dutch subsidiary of Gazprombank which is the third largest bank in Russia, sourcing and implementing & energy.

**Ryan Collyer**  
 He is the Communications Director for RosatomCentral and Southern Africa. He joined Rosatom in 2014 with the task of promoting the Rosatom brand as well as driving public awareness of nuclear in the African region. He boasts of a wealth of experience in technical communications having previously worked as the Account Director of an award winning Industrial PR Agency.

**Gaopalewe**  
 He is the Senior Scientist, working for the South African Nuclear Energy Corporation SOC Limited (Nescon) which is a state-owned public company. He has vast experience in promoting peaceful uses of nuclear science and technology and currently through the South African Young Nuclear Professionals Society (SAYNPS), he leads a team of young professionals in running nuclear advocacy programs in partnership with ROSATOM. Gaopalewe is the current President of African Young Generation in Nuclear (AYGN) and sits in the board of International Youth Nuclear Congress (IYNC) and he is very instrumental in the development of both the continental and global network.

**Mrs. Rogie Marielle**  
 Marielle Rogie is currently Director of the Belgian Nuclear Forum, the Belgian professional association representing major nuclear technology players in Belgium (electronic, research, nuclear medicine, ...). The mission of the Belgian Nuclear Forum is to inform and communicate on nuclear technology towards general public, press and stakeholders. Previously, she was in charge of the communication for the "Nuclear Safety" unit within the European Commission. She held also various positions of manager and director in communication agencies working mainly for the European institutions. Marielle has a master in Journalism and Communication, a master in European Affairs and an executive master in Management.

**WORKSHOP CO FACILITATORS/ LOCAL ORGANIZERS**

**Hilda Mpakany** KNEB  
**Mr. Koteng Arthur** RPB  
**Dr. David Otoma** NACOSTI  
**Eng. Chesire Edwin Kipkemboi** KNEB  
**Kageliza P. Kilavi Ndege** Chairperson  
**Raphael Chesori** Ayn General secretary  
**Stephen Tollaah Owuor** Secretary  
**Mrs. Grace Anunda Ateka** Logistics  
**Simon Adebo** Treasurer

**DAY 1: WEDNESDAY 29<sup>TH</sup> NOVEMBER 2017**

9:15 - 9:20AM	Conference Organizer's welcome <ul style="list-style-type: none"> <li>Clare O'Connell, Event Director, Springfield, South Africa</li> <li>AYGN-KYGN workshop Organizers welcome</li> </ul>												
9:20 - 9:35AM	Host Ministry welcome address <ul style="list-style-type: none"> <li>Dr. Joseph Njoroge, Principal Secretary, Ministry of Energy and Petroleum, Kenya</li> </ul>												
9:35 - 9:50AM	Ugandan's welcome address <ul style="list-style-type: none"> <li>Hon. Eng Simon D'Ujanga, Minister of State for Energy and Mineral Development, Uganda</li> </ul>												
	<b>What is the vision for the digital utility?</b> Will there be a new way of running a utility? How can you cope with digital technologies and operations capabilities? Entirely reimagining the customer experience												
9:50 - 11:00AM	<b>Speakers</b> <ul style="list-style-type: none"> <li>Kannan Lakshminarhan, Partner, McKinsey &amp; Company, South Africa</li> <li>Johnny Dladla, CEO Eskom Enterprises, Eskom, South Africa*</li> <li>Johan Heilberg, Country Manager, Siemens, Kenya</li> <li>Ken Tatus, Acting Managing Director and CEO, Kenya Power*</li> <li>Rebecca Miano, Acting Managing Director and CEO, KenGen, Kenya*</li> </ul>												
11:00 - 11:30AM	<b>Inspirational keynote address : Developing East Africa's future leaders</b> Prof. Izabel Pereira Da Silva, Deputy Vice Chancellor in Charge of Research and Innovation, Strathmore university Gaopalewe Santwene, Senior Scientist, Nesca and President, African Young Generation in Nuclear (AYGN)												
11:30 - 12:00PM	<b>Tea Break</b>												
12:00 - 1:30PM	<b>Location: Bogenville</b> <b>1. Communicating benefits of nuclear Science and Technology</b> <b>Speaker</b> Ryan Collyer, Communication Director, ROSATOM, Central and Southern Africa / Hilda Mpakany, Technical Research Officer, Kenya Nuclear Electricity Board <b>Location: Mt. Kenya</b> <b>2. Nuclear risk and crisis communication</b> <b>Speakers</b> Raphael Chesori, Secretary General, African Young Generation in Nuclear and World Nuclear University Alumni/ Gaopalewe Santwene, Senior Scientist, Nesca and President, African Young Generation in Nuclear (AYGN)												
1:30 - 2:30PM	<b>Lunch and Networking</b>												
2:30 - 3:15PM	<b>Location: Mt. Kenya</b> <b>3. Nuclear ethics and challenges in Africa</b> <b>Speaker</b> Viktor Polikarpov, Regional Vice President, ROSATOM, Central and Southern Africa Dr. OTWOMA, Chief Scientist, National Commission of Science, Technology and Innovation, Kenya												
3:15 - 3:45PM	<b>Tea Break and Networking</b>												
3:45 - 4:45PM	<b>Working Groups</b>	WG-1	WG-2	WG-3	<b>Facilitator</b> Ryan Collyer	Raphael Chesori	Viktor Polikarpov	<b>Co-facilitator</b> Hilda Mpakany (KNEB)	Gaopalewe Santwene (NESCA)	Dr. David Otoma	<b>Topic of discussion</b> Communicating benefits of nuclear	Nuclear risk and crisis communication	Nuclear Opportunities and challenges in Africa
WG-1	WG-2	WG-3											
<b>Facilitator</b> Ryan Collyer	Raphael Chesori	Viktor Polikarpov											
<b>Co-facilitator</b> Hilda Mpakany (KNEB)	Gaopalewe Santwene (NESCA)	Dr. David Otoma											
<b>Topic of discussion</b> Communicating benefits of nuclear	Nuclear risk and crisis communication	Nuclear Opportunities and challenges in Africa											
4:45 - 5:30PM	<b>Group Presentations</b>												
<b>DAY 2: THURSDAY 30<sup>TH</sup> NOVEMBER 2017</b>													
9:00 - 10:00AM	<b>Location: Elgon</b> <b>1. Best practices in Nuclear Safety and Security</b> <b>Speaker</b> Prof. Kamen Velichkov, Senior Program Manager, Diplomatic Advisor, International Science and Technology Centre/ Mr. Mains Joseph, Chief Executive Office, Radiation Protection Board												
10:00 - 11:30AM	<b>Tea break and networking</b>												
11:30 - 12:15PM	<b>Location: Elgon A</b> <b>2. Nuclear safety advocacy: Perspective from the industry</b> <b>Speaker (s)</b> Mrs. Marielle Rogie, Director, Belgian Nuclear Forum												
12:15 - 1:00 PM	<b>Location: Elgon B</b> <b>3. Stakeholder engagement</b> <b>Speaker:</b> Madam Sheriffah Noor Khamesah Al-Idd Binti Dato Syed Ahmad Idd, Innovation & Nuclear Advocate Alumni, Imperial College, University of London, United Kingdom												
1:00 - 2:00 PM	<b>Lunch break and network</b>												
	<b>Working Groups</b>	WG-1	WG-2	WG-3	<b>Facilitator</b> Prof. Kamen Velichkov	Mrs. Marielle Rogie	Madam Sheriffah Noor Khamesah Al-Idd Binti Dato Syed Ahmad Idd,	<b>Co-facilitator</b> Mr. Mains Joseph	Mr. Koteng Arthur	Eng. Edwine Chesire	<b>Topic of discussion</b> Nuclear safety advocacy: Perspective from the industry	Nuclear safety advocacy: Perspective from the industry	Stakeholder engagement
WG-1	WG-2	WG-3											
<b>Facilitator</b> Prof. Kamen Velichkov	Mrs. Marielle Rogie	Madam Sheriffah Noor Khamesah Al-Idd Binti Dato Syed Ahmad Idd,											
<b>Co-facilitator</b> Mr. Mains Joseph	Mr. Koteng Arthur	Eng. Edwine Chesire											
<b>Topic of discussion</b> Nuclear safety advocacy: Perspective from the industry	Nuclear safety advocacy: Perspective from the industry	Stakeholder engagement											
2:00 - 3:30PM													
3:30 - 4:00PM	<b>Tea break and networking</b>												
4:00 - 5:00PM	<b>Group presentations</b>												
5:00 - 5:30PM	<b>CLOSING CEREMONY</b>												

