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REPUBLIC OF KENYA



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THE NATIONAL ASSEMBLY

DEPARTMENTAL COMMITTEE ON ENERGY

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TWELFTH PARLIAMENT-SECOND SESSION

DELEGATION REPORT

ON

STUDY VISIT TO RUSSIA AND THE PEOPLES REPUBLIC OF CHINA

REGARDING NUCLEAR ENERGY 11<sup>TH</sup> -26<sup>TH</sup> MAY, 2018

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| THE NATIONAL ASSEMBLY<br>PAPERS LAID |   |
| DATE: 05 DEC 2018                    | DAY: Wednesday (pm)                                 |
| TABLED BY:                           | Hon. (Dr) Robert Pokose<br>Vice Chair- DC on Energy |
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Published by  
The Directorate of Committee Services  
National Assembly  
Parliament

Nairobi-Kenya

December 2018

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## **FOREWARD**

ATOMEXPO is a major event in the international nuclear industry. It is the largest exhibition and business platform for discussing the current state of the nuclear industry and setting future trends, and has been held annually since 2009.

The conference is attended by executives from key companies working in the global nuclear industry, government agencies, international and non-commercial organizations, and leading experts.

This year's conference was held in the city of Sochi in Russian Federation between the 11<sup>th</sup> and 18<sup>th</sup> of May , 2018, and the Departmental Committee on Energy was privileged to represent the National Assembly which was headed by the Hon Joseph Manje, MP. Among the Kenya delegation included officials from Nuclear Electricity Board led by Chief Executive Officer, Eng. Collins Juma.

The Delegation also visited the People Republic of China where they met and held bilateral meetings with government officials in charge of Nuclear Energy generation, maintenance and management in China. The delegation visited several nuclear sites as well as companies who participate in manufacturing equipment used in nuclear facilities

On behalf of the Departmental Committee on Energy, we wish to express our gratitude to the State Department for Energy for inviting us to this remarkable event, and for their overall coordination throughout. Our greatest gratitude goes out to the office of the Clerk of the National Assembly for facilitating the travel arrangements for Members of the delegation and to the Clerk of the Committee for coordinating the participation successfully.

Hon. Dr. Robert Pukose, MP

**Vice Chairperson Departmental Committee on Energy**

## **1.0 MANDATE OF THE COMMITTEE**

1.1 The Departmental Committee on Energy derives its mandate from the provisions of Standing Order No. 216(5) which grants the Committee amongst other functions:-

- a) To investigate, inquire into, and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned ministries and departments;
- b) To study the programme and policy objectives of ministries and departments and the effectiveness of their implementation;
- c) To study and review all legislation referred to it;
- d) To study, assess and analyze the relative success of the ministries and departments measured by the results obtained as compared with their stated objectives;
- e) To investigate and enquire into all matters relating to the assigned ministries and departments as may be deemed necessary, and as may be referred to it by the House; and
- f) To make reports and recommendations to the House as often as possible, including recommendations of proposed legislation.

1.2 Further, the Second Schedule to the Standing Orders mandates the Committee consider matters relating to the following subjects Fossils fuel exploration, Development, production, maintenance and regulation of energy

1.3 In executing this mandate, the Committee oversees various State Departments, namely:

- i. The State Department of Energy ; and
- ii. The State Department of Petroleum.

## **2.0 MEMBERS OF THE COMMITTEE**

The Committee comprises the following Members-

1. The Hon. David Gikaria, M.P. - **Chairperson**
2. The Hon. (Dr.) Robert Pukose, M.P. - **Vice Chairperson**
3. The Hon. Cecily Mbarire, M.P.
4. The Hon. Ekomwa Lomenen James, M.P.
5. The Hon. Joseph Wathigo Manje, M.P.
6. The Hon. Lemanken Aramat, M.P.
7. The Hon. Oscar Sudi, Kipchumba, M.P.
8. The Hon. (Eng.) Vincent Musyoka Musau, M.P.
9. The Hon. Amina Gedow Hassan, M.P
10. The Hon. Abdikhaim Osman Mohamed, M.P
11. The Hon. Clement Muturi Kigano, M.P.
12. The Hon. Elisha Odhiambo, MP
13. The Hon. Elsie Muhanda, MP
14. The Hon. Gitau Faith Wairimu, M.P.
15. The Hon. Julius Musili Mawathe, MP
16. The Hon. Ken Chonga, MP
17. The Hon. Tindi Nicholas Mwale, MP
18. The Hon. Walter Owino, MP
19. The Hon. Mohammed Ali Lokiro, MP

## **2.1 COMMITTEE SECRETARIAT**

1. Mr Benjamin Magut - First Clerk Assistant–Lead Clerk
2. Mr Douglas Katho - Third Clerk Assistant
3. Ms Brigita Mati - Legal Counsel
4. Mr David Ngeno - Research Officer
5. Mr Salim Gorod - Fiscal Analyst
6. Mr Joseph Okong’o - Media Relations Officer
7. Mr John Ng’ang’a - Audio Recording Officer
8. Ms Sheila Chebotibin - Sergent at Arms

### **3.0 THE DELEGATION**

#### **3.1 THE NATIONAL ASSEMBLY'S DELEGATION**

The National Assembly Delegation comprised of the following:

1. Hon. Joseph Manje, MP - Leader of the Delegation
2. Hon. Abdikhaim Osman Mohamed, MP
3. Hon. Walter Owino, MP
4. Hon. Faith Wairimu Gitau, MP
5. Hon. Ken Kiti Chonga, MP
6. Mr Benjamin Magut - Committee Clerk and Secretary to the Delegation

#### **3.2 THE SENATE DELEGATION**

The Senate Delegation comprised of the following:

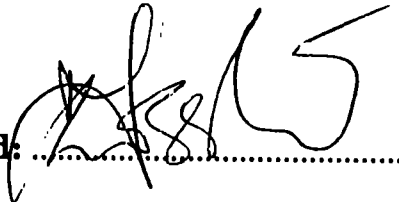
1. Sen. Mary Yiane Seneta
2. Sen. Malachy Charles Ekal Imana
3. Sen. Johnes Mwaruma

#### **4.0 ACKNOWLEDGMENT**

ATOMEXPO is a major event in the international nuclear industry. It is the largest exhibition and business platform for discussing the current state of the nuclear industry and setting future trends, and has been held annually since 2009. The conference is attended by executives from key companies working in the global nuclear industry, government agencies, international and non-commercial organizations, and leading experts.

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On behalf of the Departmental Committee on Energy, we wish to express our gratitude to the State Department for Energy for inviting us to this remarkable event. Our greatest gratitude goes out to the office of the Clerk of the National Assembly for facilitating the travel arrangements for Members of the delegation and to the Clerk of the Committee for his seamless coordination of the event. It was this team work that made the event successful.

Signed:  Date: 4/12/2018

Hon. Dr. Robert Pukose, MP

**Vice Chairperson Departmental Committee on Energy**

## **5.0 INTRODUCTION**

### **5.1 BACKGROUND**

As part of engagement of key stakeholders involved in policymaking towards the development of Kenya's nuclear power programme, the Kenya Nuclear Electricity Board (KNEB) organized a study visit for legislators drawn from the Energy Committees of the National Assembly and The Senate to Russia and The People's Republic of China. KNEB has a memorandum of Understanding with the Russian State Agency for Nuclear Power (ROSATOM) and the China General Nuclear Power Corporation (CGN) for training, technical assistance in nuclear power development. The study visit took place between 11<sup>th</sup> -26<sup>th</sup> May 2018.

### **5.2 OBJECTIVES**

The broad objectives of the study visit were:

- a. To enhance the understanding of the legislators on key aspects of nuclear power development, including world trends in the sector and overall appreciation of the various institutions or bodies required for a successful nuclear power programme.
- b. To expose the legislators to nuclear power plants which are in operation as well as associated facilities such as spent fuel storage.
- c. To enable legislators appreciate the various uses of nuclear technology besides electricity production.

### **5.3 PARTICIPATION IN THE ATOMEX CONFERENCE IN SOCHI, RUSSIA**

Delegation attended the ATOMEXPO 2018. This is a large gathering of the nuclear industry professionals held annually to showcase development in technology, benchmark on progress in nuclear power programmes and meet vendors and companies using nuclear technology for peaceful uses in fields such as health, water and agriculture.





*From right is Hon Ken Kiti Chonga, MP, Hon Abdikahim Oman, MP, Hon Faith W. Gitau, MP, Hon Elisha Odhiambo, Mr. Benjamin Magut (Committee Clerk) and Hon Joseph Manje, MP (Leader of Delegation)*

The delegation also had an extensive presentation by ROSATOM which highlighted the Integrated Solution offered by the entity toward supporting a nuclear power programme such as Kenya's.

The team was informed that ROSATOM would be willing to be involved in constructing a nuclear research reactor in Kenya. The benefits of a research reactor include training of personnel and production of medical isotopes which would be useful in treating various illnesses without travel abroad.

The Kenyan delegation also observed water desalination solutions offered by various entities. Desalination of salt water is key for cooling nuclear power plants. However, a large water desalination plant set up as part of the nuclear power complex would also afford water supply to the local communities.

The Kenyan delegation further observed that ROSATOM took a proactive approach in dealing with journalists by running an elaborate programme that managed the dissemination of information, as well as control of the ensuing discourse. This included; special tagging and access, allocation of sufficient time in the schedule to engage the journalists, and delivery of carefully prepared communique for media reference.

In his presentation to the Kenyan delegation, Dr. Kelvin Kemm, Chairman of the South African Nuclear Energy Corporation (NECSA) emphasized that despite producing 44,000MW of electricity, South Africa was keen to have a further 9600MW from nuclear energy. It was also noted that Egypt which currently has a generation capacity of 31,000MW has signed a deal with ROSATOM and the construction will commence in the near future.



## **5.5 STUDY VISIT TO THE PEOPLES REPUBLIC OF CHINA**

During the China leg of the study visit, the delegation visited the Daya Bay nuclear power Plant in Shenzhen, Guandong Province. Its two units generate a total of 1984 MW of electricity. The visit included a visit to the skills training centre and waste disposal site.

The delegation also visited Nuclear Power Virtual Simulation Lab and Safety Monitoring and Equipment lab and the Dongfang Electric Company's equipment manufacturing site where various key components of a nuclear power plant are made.



In addition, the delegation visited the Yangjiang Nuclear Power Plant and witnessed firsthand a unit which is under construction. The following key points were picked from the management of the facility:

- High Localization Experience 85%- The visit to Yangjiang Nuclear power plant site and related presentation demonstrated how Kenya could emulate China in achieving a high localization rate of 85% experienced in the new CPR 1000 NPP under construction at the site. Also, as all the six (6) nuclear power plants were all constructed at the same site, the host Province has enjoyed relatively good economic prosperity as evidenced by its high GDP growth since the 90's, higher real estate prices, an annual rate of return on investment of more than 10% for completed nuclear plants, afforestation of about 70,000 hectares, provision of about 3,000 direct community jobs and development of a Tertiary Education Centre.
- Strong On-the-Job Training Programme- CGN demonstrated its capacity for rapid development and deployment of human resource. Similar to ROSATOM, China General Nuclear Power Corporation (CGN) advised on the need to sign a high level MOU's to facilitate cooperation on skills transfer under their Human Resource On-

the-Job Training programme running for 3-5 years for successful graduate recruits.

The delegation further held a bilateral meeting with top officials of the China General Nuclear Power Corporation where cooperation between the company and Kenya government was emphasized. Kenyan delegation requested Chinese government through its Nuclear Power Corporations to assist Kenya in building its local expertise on key areas in nuclear power.

## **6.0 OBSERVATIONS**

Arising from the study visit the delegation observed that:-

1. Currently there is no regulatory framework that guides the Nuclear Power activities in the country.
2. Government through KNEB had entered into a Memorandum of understanding with Russia Federation through its Atomic agency (Rosatom) to carry-out feasibility and designs for first nuclear site in Kenya
3. The ROSATOM is actively involved in Africa in assisting governments design and construct nuclear sites to produce renewable energy to supplement the power generation mix
4. Several countries in the continent including South Africa have successfully constructed small nuclear reactors for production of medical isotopes to aid in medical diagnostics
5. Kenya government through the KNEB has immensely benefited from the capacity building and knowledge transfer from Chinese government. Through scholarship programs offered Peoples Republic of China government a number of Kenya students are undertaking nuclear related studies in China.

## **7.0 RECOMMENDATIONS**

**Following the conclusion of the study visit the delegation wishes to recommend the following**

- 1) The National Assembly gives due priority to legislation geared at having a regulator for nuclear power in Kenya be in place as the country moves to the next phase of undertaking preparatory activities for the construction of nuclear plants in Kenya.**
- 2) The National government to consider the construction of a research reactor in the country to make medical isotopes to be used in medical diagnostics in order to reduce the cost of citizens traveling outside the country for medical diagnostics**
- 3) The Ministry of Energy should consider enhancing KNEB's budgetary allocation to assist the Board intensify training of local capacity and undertake crucial public awareness especially in the earmarked locations where the reactors are going to be hosted as the nuclear power programme is gathering pace and entering a crucial phase.**
- 4) The National government should seek for an integrated solution which includes a water desalination plant whose product can be piped and supplied to areas near a future nuclear power plant.**