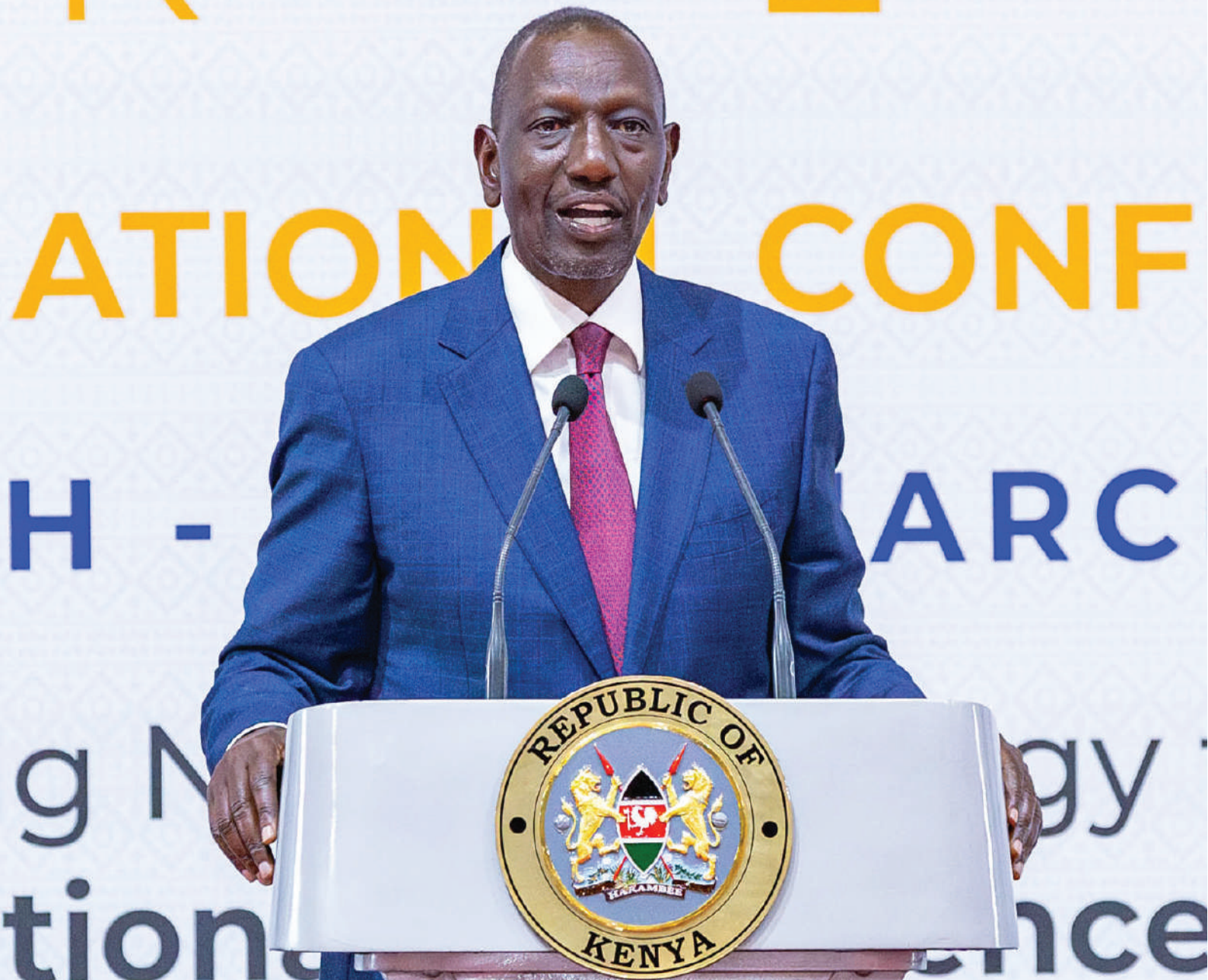


# The FISSION

A Publication of the Nuclear Power and Energy Agency



# ICoNE 2026

## OUR VISION, MISSION STATEMENT



VISION

01

*Provider of Safe and Sustainable Energy Solutions*

*To develop nuclear power, and undertake research and capacity building in the energy and petroleum sectors for socio-economic prosperity*

02



MISSION

# TABLE OF CONTENT

|                                                                                                        |           |
|--------------------------------------------------------------------------------------------------------|-----------|
| <b>CEO STATEMENT</b>                                                                                   | <b>i</b>  |
| <b>EDITOR'S NOTE</b>                                                                                   | <b>ii</b> |
| <b>News Bytes</b>                                                                                      | <b>iv</b> |
| <b>ICoNE 2026</b><br>Kenya's Energy Turning Point: Nuclear Power to Drive 30% of a 10,000 MW Expansion | <b>1</b>  |
| <b>25th INPRO Dialogue Forum</b><br>Advancing Nuclear Energy for Embarking Countries                   | <b>6</b>  |
| <b>Engaging the Legislatures</b><br>Parliament Briefing on Progress of Kenya's Nuclear Power Programme | <b>10</b> |
| <b>Energy Week 2025</b><br>Spotlight on Sustainable Power in Kitui County                              | <b>13</b> |
| <b>ICoNE 2026 Pictorials</b>                                                                           | <b>15</b> |
| <b>KEEP</b><br>Powering Kenya's future, protecting its environment                                     | <b>17</b> |
| <b>Listening by the Lake</b><br>Building Trust for Kenya's Nuclear Future in Siaya                     | <b>19</b> |
| <b>Employee Spotlight</b><br>Queenter Osoro                                                            | <b>23</b> |
| <b>Nuclear Facts and Figures</b>                                                                       | <b>27</b> |
| <b>Crossword</b>                                                                                       | <b>28</b> |
| <b>World Nuclear Reactors</b>                                                                          | <b>29</b> |
| <b>Board of Directors</b>                                                                              | <b>36</b> |

**Editorial Director** Patricia Ndede    **Sub Editor** Lilian Matu & Purity Mawia    **Contributors** Purity Mawia, Irene Njoroge, Jonathan Njoroge, Dennis Nkonge, Carl Madara, Gabrielle Odhyambo, Albert Mbaka, Esther Musyoka    **Design & Layout** Carl Madara, **Photography** Carl Madara & Jonathan Njoroge    **Circulation** Faith Kosgei

**The Fission is a publication of Nuclear Power and Energy Agency. All rights reserved. No part of this magazine may be reproduced without prior permission.**



# CEO STATEMENT

Welcome to this 2026 first edition of Fission Magazine.

This year has been both exciting and defining for Kenya's nuclear power programme. We successfully hosted the International Conference on Nuclear Energy (ICoNE) Kenya 2026 a landmark event that brought the global nuclear community to Kenya. Beyond the conversations and technical exchanges, the conference reaffirmed our country's growing confidence and visibility as a serious player in the future of clean energy.

We draw our inspiration from a bold national vision. As reaffirmed by His Excellency Dr. William Ruto, C.G.H., President of the Republic of Kenya and Commander-in-Chief of the Defence Forces, Kenya is working towards generating 6,000 MW of nuclear power in the long term. This is not just an energy target but it is a statement about our ambition to power industries, create jobs, and transform livelihoods through reliable, low-carbon energy.

Over the past year, we have moved from planning into deeper implementation. Site identification and characterization activities have progressed in areas such as Kilifi and Siaya counties. At the same time, we continue to strengthen the policies, legal frameworks, and institutional capacity required to support a programme of this scale.

Partnerships have remained at the heart of our journey. We have deepened collaboration with global leaders in nuclear technology, including the International Atomic Energy Agency. These partnerships are not only enhancing our technical expertise but also ensuring that our programme is aligned with the highest international standards of safety and security.

Equally important is the progress we have made in building people and trust. Through scholarships, specialized training, and collaboration with local universities, we are nurturing the next generation of Kenyan nuclear professionals. Meanwhile, our public engagement efforts across the country continue to open up conversations, address concerns, and build informed confidence in nuclear energy.

Looking back, the successful hosting of ICoNE Kenya 2026 was not just an event rather a signal that Kenya is ready to engage, learn, and lead. Looking ahead, our focus remains steady: delivering a nuclear power programme that is safe, transparent, and transformative for our nation.

I invite you to explore this edition as we share our journey, milestones, and the partnerships shaping Kenya's nuclear future. Thank you for being part of this journey.

CS JUSTUS WABUYABO

CEO





# EDITOR'S NOTE

The Fission magazine is back! It docks at a defining moment for Kenya's nuclear energy journey—one marked by global collaboration, national resolve, and growing public engagement.

This edition reflects the momentum generated by the ICoNE 2026, which brought together a vibrant mix of international experts and local professionals. The exchange of ideas at the conference underscored a shared commitment to advancing safe, innovative, and sustainable nuclear technologies. For NuPEA, it was a powerful reminder that Kenya's ambitions are firmly anchored within a global community of practice.

Equally significant is the continued progress towards establishing a dedicated owner-operator entity under KenGen, tasked with developing Kenya's first nuclear power plant. This milestone signals a transition from planning to structured implementation—laying the institutional groundwork necessary for long-term success.

On the international stage, Kenya's active participation in the 25th INPRO Dialogue Forum highlights its commitment to aligning with best practices and benefiting from shared global experience. These engagements ensure that Kenya's program remains informed, collaborative, and forward-looking.

At the community level, stakeholder engagement continues to play a central role, particularly in Siaya County, one of the potential sites for nuclear development. Dialogue with local communities reflects an understanding that the success of nuclear energy depends not only on technology and policy, but also on trust, transparency, and inclusion.

As you explore this issue, we invite you to consider the intersections of innovation, partnership, and public participation that define Kenya's nuclear future. Fission is not just a reflection of progress—it is a testament to the collaborative effort shaping a new chapter in the nation's energy story.

PATRICIA NDEDE

*Editor in Chief*



### **NuPEA Strengthens Academic Collaboration to Advance Nuclear Skills Development**

NuPEA Chief Executive Officer, Justus Wabuyabo, met with Prof. Roberto Zanino, Professor of Nuclear Engineering at Politecnico di Torino, on 22nd January 2026 to explore collaboration on the development of a structured curriculum for training nuclear professionals in Kenya.



### **NuPEA Explores Strategic Partnership with Republic of Korea on Nuclear Development**

NuPEA management team led by the CEO, held a high-level engagement with H.E. Kang Hyung-shik, Ambassador of the Republic of Korea to Kenya, on Wednesday 4th February 2026 to advance bilateral cooperation in Kenya's nuclear energy development agenda.



### **Kenya Advances CSC Accession Through Multi-Agency Engagements**

Representatives from the State Department for Energy, the International Atomic Energy Agency delegation, and the Nuclear Power and Energy Agency held a strategic bilateral meeting on 10th February 2026 to review Kenya's progress toward accession to the Convention on Supplementary Compensation for Nuclear Damage.



### **NuPEA and KenGen Engage LREB Leadership on Nuclear Power Programme**

A high-level delegation from Kenya's nuclear and energy sector paid a courtesy call to H.E. Peter Anyang' Nyong'o, Chair of the Lake Region Economic Bloc, to discuss strategic aspects of the country's Nuclear Power Programme.





### **NuPEA and ODPP Formalized Partnership to Support Nuclear Power Programme**

NuPEA and the Office of the Director of Public Prosecutions (ODPP) signed an MoU on 17th March 2026, to strengthen collaboration as Kenya advanced its nuclear power programme. The partnership aimed to build prosecutorial capacity, enhance institutional preparedness, and boost public confidence.



### **NuPEA, KenGen and Siaya County Strengthened Collaboration on Nuclear Power Project**

NuPEA, led by Chairman Eng. Prof. Lawrence Gumbe and CEO Justus Wabuyabo, alongside KenGen CEO Eng. Peter Njenga, paid a courtesy call to Siaya Governor James Orendo on 10th March 2026 to review progress of the Nuclear Power Programme



### **ROSATOM Submitted Response to Kenya's Nuclear Power Plant Inquiry**

Rosatom officially handed over its response to Kenya's Request for Information on the Nuclear Power Plant project to NuPEA CEO Justus Wabuyabo at the NuPEA offices on 26th February 2026. The submission covered both Small Modular Reactors (SMRs) and large reactor technologies.



### **Public Lecture on Nuclear Energy at Kenyatta University**

OECD Nuclear Energy Agency Director General William D. Magwood IV and NuPEA CEO Justus Wabuyabo delivered a lecture to students from Kenyatta University, Alliance High School, Alliance Girls High School, and Nova Pioneer School, on 27th March 2026. The session featured career talks on nuclear energy and nuclear-related studies



**ICoNE 2026**

# Kenya's Energy Turning Point: Nuclear Power to Drive 30% of a 10,000 MW Expansion



**Kenyatta International Convention Centre , Nairobi**

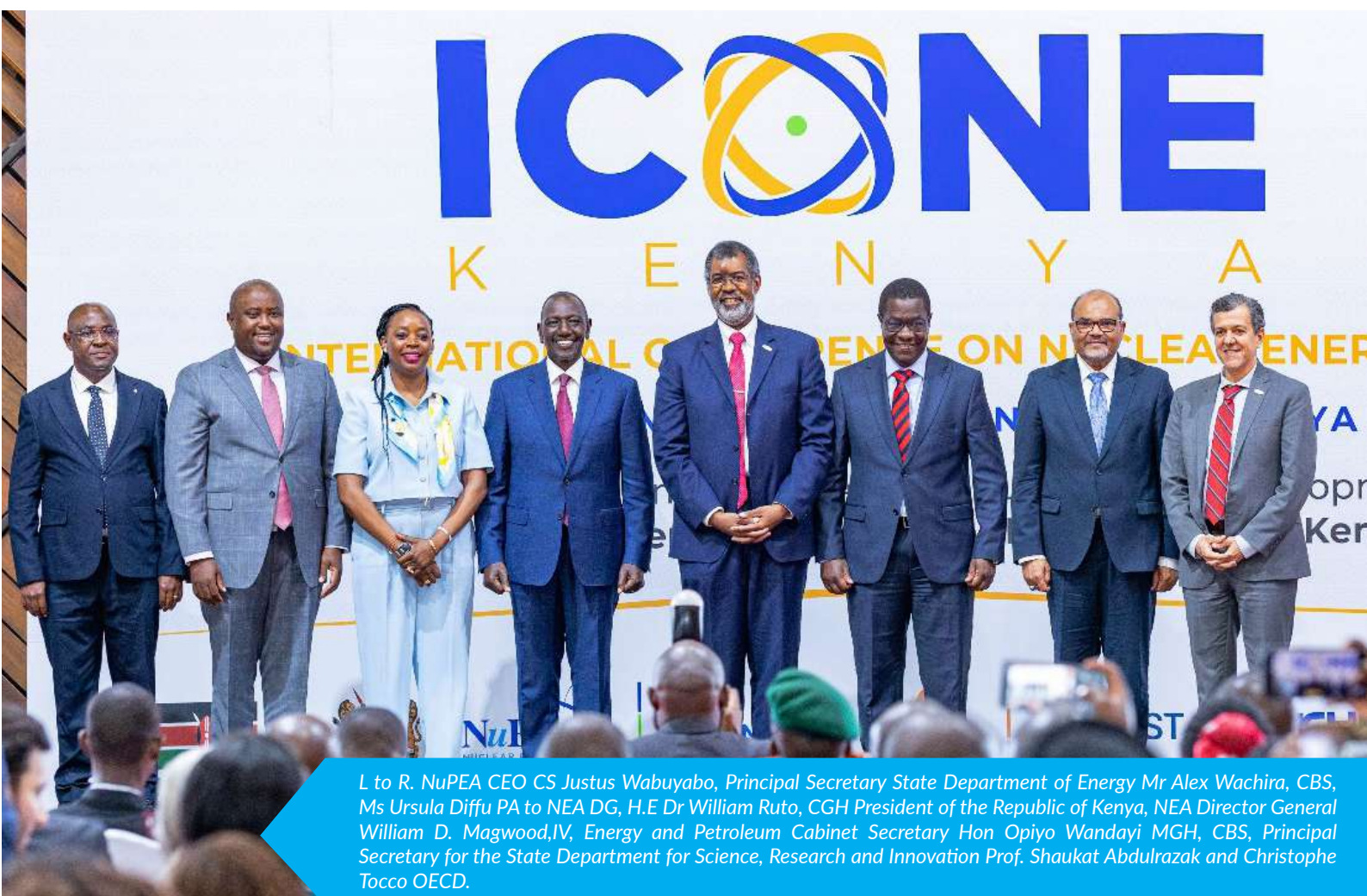
*By Purity Mawia*



In many rooms of discussion, the same questions resurfaced again and again: what does nuclear energy mean for Kenya, who is driving the agenda, where will it be implemented, when will it begin, why now, and how will it be delivered? At the Kenyatta International Conference Centre, these questions found clarity as Kenya hosted the International Conference on Nuclear Energy (ICoNE 2026) from 24th to 26th March 2026. Convened by the Nuclear Power and Energy Agency on behalf of the Ministry of Energy and Petroleum, in partnership with the OECD Nuclear Energy Agency, the U.S FIRST Program, and Korea Hydro & Nuclear Power, the conference brought together over 600 participants from across Africa and beyond. Its purpose was clear: to position nuclear energy as a viable pathway for clean, reliable, and sustainable power in Africa, while signalling Kenya's readiness to begin construction of its first nuclear power plant by 2027.

From the outset, the conference reflected a nation moving with intent. Presided over by H.E President William Ruto, CBS and attended by senior government officials, regulators, and global nuclear leaders, the convening demonstrated alignment at the highest levels of leadership. It marked a transition from planning to implementation in Kenya's nuclear energy journey.

*"Energy is the lifeblood of industrial and economic development, and Kenya is committed to scaling up to 10,000 MW, with 30 per cent from nuclear power. Construction of our first nuclear power plant is planned for 2027,"*



L to R. NuPEA CEO CS Justus Wabuyabo, Principal Secretary State Department of Energy Mr Alex Wachira, CBS, Ms Ursula Diffu PA to NEA DG, H.E Dr William Ruto, CGH President of the Republic of Kenya, NEA Director General William D. Magwood, IV, Energy and Petroleum Cabinet Secretary Hon Opiyo Wandayi MGH, CBS, Principal Secretary for the State Department for Science, Research and Innovation Prof. Shaukat Abdulrazak and Christophe Tocco OECD.



NUPEA CEO CS Justus Wabuyabo at the Official opening of the ICoNE conference.

H.E. President William Ruto stated, reaffirming the country's ambition. He further underscored the importance of institutional alignment to ensure effective regulation and oversight.

ICoNE 2026 served as both a strategic and technical platform. Through high-level plenaries, expert panels, and capacity-building sessions, participants examined the role of nuclear energy in addressing Africa's energy deficits, supporting climate goals, and strengthening energy security. The dialogue focused on actionable priorities, including policy readiness, financing frameworks, safety standards, and workforce development.

The Chief Executive Officer Nuclear Power

and Energy Agency, CS Justus Wabuyabo, underscored the importance of collaboration and knowledge exchange. *"The International Conference on Nuclear Energy is more than a convening—it is a platform to share global best practices, strengthen regional partnerships, and learn from countries that have successfully walked this journey,"* he noted, adding that nuclear energy remains a strategic necessity for clean, reliable power and climate change mitigation.

The breadth of participation reflected a whole-of-sector approach. Governments, regulators, academia, and industry stakeholders engaged in discussions that highlighted the importance of coordination across institutions. The Kenya Nuclear Regulatory Authority emphasized its commitment to safety, transparency, and adherence to international standards, while Kenya Electricity Generating Company, as the designated owner-operator, reaffirmed its preparedness to deliver Kenya's first nuclear power plant.

*"As the designated owner-operator, we are committed to building the capacity, expertise, and safety culture required to deliver Kenya's first nuclear power plant," said Eng. Peter Njenga, CEO/DG KenGen. "Nuclear energy will provide the reliable, low-carbon baseload power needed to drive Kenya's industrial and economic transformation."*

At both global and continental levels, the conference reinforced a shared momentum around nuclear energy. From the OECD Nuclear Energy Agency, Director-General William D. Magwood IV observed that nuclear energy is increasingly recognised as essential for energy security and meeting rising electricity demand. With innovations such as Small Modular Reactors improving accessibility, he noted that the global conversation has



shifted from why nuclear should be pursued to why it should not. He emphasized that strengthened cooperation, including partnerships with the African Commission on Nuclear Energy, will be critical in building the expertise required for Africa's nuclear future.

The African Commission on Nuclear Energy (AFCONe) chairman, Gaspard Liyoko Mboyo, highlighted Africa's strategic position, noting that the continent holds approximately 20% of the world's uranium resources. He underscored that with a majority of African Union Member States having ratified key non-proliferation instruments. Nuclear energy offers a viable pathway to sustainable and stable baseload power, aligned with the aspirations of Agenda 2063.

The conference also highlighted the importance of inclusivity, particularly at the county level. Siaya Governor, Hon. James Orengo, emphasized the need for sustained stakeholder engagement, noting that large-scale energy projects must be anchored on public trust, transparency, and meaningful community participation.

A key takeaway from the conference was the shift from ambition to action. Kenya's plan to commence construction of its first nuclear power plant by 2027 signals tangible progress. However, participants emphasized that success will depend not only on infrastructure development, but also on effective public communication and stakeholder engagement.

Stakeholder engagement emerged as a central theme throughout the discussions.



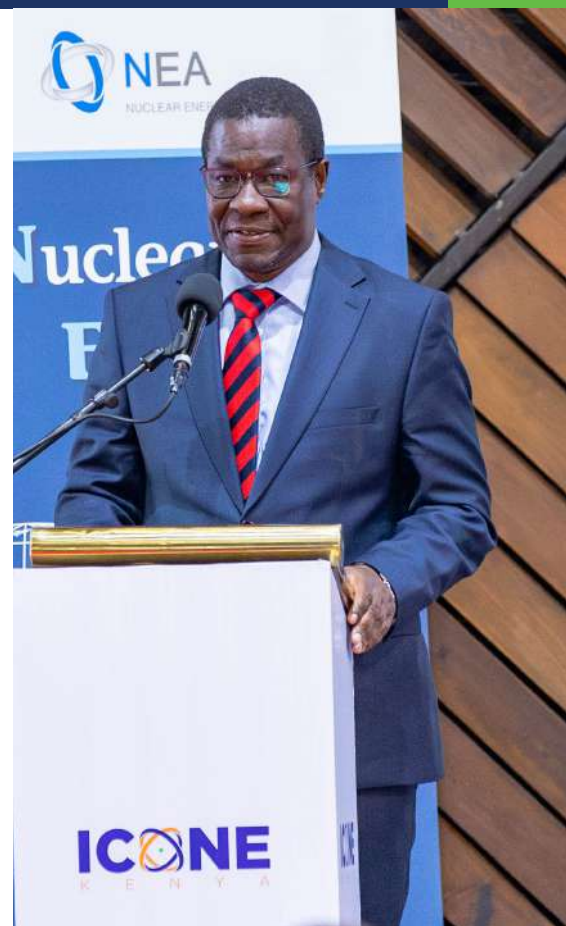


There was broad consensus that communication must be deliberate, continuous, and tailored to local contexts. The inclusion of youth and women was identified as critical to building a sustainable and future-ready nuclear workforce across Africa.

Capacity building remains a cornerstone of Kenya's nuclear programme. Investments in education, training, and international partnerships are positioning the country to develop the technical expertise required to support nuclear energy development. Collaboration with global institutions continues to strengthen Kenya's alignment with international best practices.

In his closing remarks, Hon. Musalia Mudavadi, the Prime Cabinet Secretary, underscored the importance of global cooperation. He reaffirmed Kenya's commitment to implementing its nuclear power programme transparently and in full alignment with international safety standards, noting that partnerships will remain central in translating challenges into milestones for progress.

The conference also marked a milestone in public engagement. The launch of a nuclear energy book authored by Eng. Prof. Lawrence Gumbe, NuPEA Board Chairman and board of director, Francis Agar during the closing ceremony signalled a renewed commitment to public education and informed discourse on nuclear technology.



*Cabinet Secretary Hon Opiyo Wandayi MGH, CBS at the Official opening of the ICoNE conference.*



As ICoNE 2026 concluded, the message was clear: nuclear energy is no longer a distant consideration for Kenya, but a strategic imperative. The conference reinforced Kenya's position as an emerging leader in Africa's nuclear landscape, anchored in strong partnerships, institutional alignment, and a clear policy direction.

What began as a set of fundamental questions has now evolved into a defined pathway. Kenya is not only envisioning a nuclear-powered future—it is actively laying the foundation for it.

*Prime Cabinet Secretary Hon Musalia Mudavadi EGH, at the official closing ceremony.*

# 25th INPRO Dialogue Forum: Advancing Nuclear Energy for Embarking Countries



*Delegates and officials at the 25th Dialogue Forum of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), hosted in Nairobi, Kenya, from 17–21 November 2025, bringing together global experts.*



**Edge Convention , Nairobi**

*By Purity Mawia*

**N**airobi took centre stage in the global nuclear conversation from 17–21 November 2025 as it hosted the 25th Dialogue Forum of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO). Convened under the auspices of the International Atomic Energy Agency (IAEA) and hosted by Kenya's Nuclear Power and Energy Agency (NuPEA), the forum marked the first time an INPRO Dialogue Forum was held on African, an important milestone reflecting the continent's growing interest in nuclear power.



The five-day meeting focused on sustainable nuclear energy development in embarking countries, nations preparing to introduce nuclear power or strengthening early-stage programmes. Policymakers, regulators, technical experts and academics gathered to exchange perspectives on strategic planning, infrastructure readiness, stakeholder engagement and innovative technologies.

### INPRO's Strategic Role

Established in 2000, INPRO serves as the IAEA's collaborative platform for long-term strategic planning in nuclear reactors and fuel cycles. Its mission is to ensure that nuclear energy remains safe, economically viable, environmentally responsible and

socially acceptable well into the future.

Through analytical tools, sustainability assessments and dialogue platforms, INPRO helps Member States align nuclear energy strategies with broader national priorities such as energy security, industrialisation and climate commitments. Its Dialogue Forums are designed to bridge technology holders and technology users, creating space for candid discussion on policy, planning and innovation beyond purely technical considerations.

### Setting the Tone: Global Outlook and Strategic Planning

In his opening remarks, IAEA Deputy Director General and Head of the Department of Nuclear Energy, Mr. Mikhail Chudakov, highlighted the renewed global momentum behind nuclear power.

*"These are exciting times for nuclear power. The IAEA's latest projections show that global nuclear capacity could grow by 2.6 times the 2024 level by 2050. Africa's outlook is especially promising... Strategic planning is essential, not only for deployment, but for ensuring sustainability, safety and public trust."*



His message underscored the forum's central theme: growth must be accompanied by careful preparation, strong institutions and long-term vision.

Discussions throughout the week examined how embarking

countries can integrate nuclear power into comprehensive national energy plans. Experts emphasized structured roadmaps supported by IAEA methodologies, enabling governments to evaluate grid capacity, financing models, regulatory frameworks and fuel cycle considerations before committing to deployment.

### Kenya's Commitment and Progress

Welcoming delegates to Nairobi, NuPEA Chief Executive Officer CS. Justus Wabuyabo positioned Kenya's nuclear ambition within a broader development framework.

*“Kenya views nuclear power not simply as an electricity option, but as a strategic investment in our country's industrial transformation, energy security and low-carbon future. Hosting the 25th INPRO Dialogue Forum affirms Africa's readiness to engage meaningfully in shaping the global nuclear agenda.”*

He stressed that Kenya is advancing its programme in line with the IAEA Milestones Approach, prioritising safety, regulatory independence and human resource development.

*“We are proceeding deliberately and responsibly. Our focus is on building strong institutions, strengthening our regulatory framework, and developing the human capital required to sustain a nuclear power programme for generations.”*

During the forum, Kenya shared updates on preparatory work undertaken to date as presented by Eng. Eric Ohaga, Director Nuclear Energy and Infrastructure Development, NuPEA. These include pre-feasibility assessments, grid studies, site characterisation activities and extensive stakeholder engagement initiatives. Capacity-building programmes are underway to strengthen technical expertise and



IAEA DDG Mikhail Chudakov gives his remarks via Video Conferencing during the INPRO Forum.

regulatory capability, reflecting Kenya's long-term view of nuclear power as a contributor to energy diversification and economic growth.

### Broad Participation and Shared Experience

The forum drew wide representation from Africa, Asia, Europe and the Middle East. Delegations from embarking countries shared national progress and lessons learned, while representatives from established nuclear nations offered insights from their own deployment experience.

Sessions addressed regulatory readiness, financing strategies, stakeholder communication and the development of national nuclear infrastructure. Human capital development emerged as a recurring theme, with academic institutions and training organisations highlighting the importance of cultivating engineers, scientists and regulators capable of sustaining nuclear programmes over decades.



Innovation also featured prominently. Participants explored the potential role of small modular reactors (SMRs), particularly for countries with smaller grids or phased deployment strategies. While acknowledging that technology choices must reflect national circumstances, discussions reinforced the importance of technology-neutral planning grounded in sustainability and safety.

## Outcomes and Way Forward

By the forum's conclusion, participants consolidated a series of forward-looking recommendations. These included strengthening long-term strategic planning using INPRO and IAEA tools; enhancing public and stakeholder engagement to build trust; investing in education and workforce development; fostering regional cooperation; and continuing evaluation of innovative reactor technologies.

Above all, the INPRO Dialogue Forum reaffirmed the value of multilateral cooperation in navigating the complexities of nuclear energy development. For embarking countries, the message was clear: nuclear power can play a transformative role in sustainable development, but only when supported by robust planning, institutional strength and international partnership.

As global energy systems evolve in response to rising demand and climate imperatives, INPRO's platform for strategic dialogue continues to help shape a responsible and resilient nuclear future, one in which Africa is increasingly an active and confident participant.



One of the panel discussion during the INPRO Forum.

# Parliament Briefed on Progress of Kenya's Nuclear Power Programme



*The Speaker of the National Assembly Hon. Moses Wetang'ula poses for a photo with the delegation from the Nuclear Power and Energy Agency, Kenya Electricity Generating Company and parliament after a briefing on Kenya's nuclear power programme at Parliament Buildings, Nairobi, on 25 February 2026. Photo credits: NuPEA*



**Parliament Buildings, Nairobi**

*By Purity Mawia*

**K**enya continues to advance its preparations toward the introduction of nuclear energy as part of the country's long-term strategy to strengthen energy security, support sustainable economic growth, and diversify the national electricity mix.

On **25th February 2026**, the Speaker of the National Assembly, Hon. Moses Wetang'ula, received a high-level briefing from the leadership of the **Nuclear Power and Energy Agency (NuPEA)** and the **Kenya Electricity Generating Company (KenGen)** at Parliament Buildings in Nairobi. This significant engagement aimed at strengthening institutional collaboration and policy support for the nuclear power programme.

The meeting brought together key leaders guiding the implementation of Kenya's nuclear power programme, including NuPEA Chairman Prof. Lawrence Gumbe, KenGen Chairman Hon. Alfred Agoi, NuPEA Chief Executive Officer Justus Wabuyabo, and KenGen Managing





*NuPEA Board Chairman Eng Prof Lawrence Gumbo*

Director and Chief Executive Officer Eng. Peter Njenga. In attendance were also the Chairman of the Energy Committee, Hon. David Gikaria, Hon., Martin Wanyonyi, Hon. Alfred Agoi Masadia, Dr. Anne Michura, Board of Director NuPEA, and Board Director, Mr. KenGen Umuro Wario.

### **Strengthening Institutional Collaboration**

The engagement provided an opportunity to update the Speaker on key milestones achieved in the implementation of Kenya's nuclear power roadmap and the institutional coordination required to deliver the country's first nuclear power plant.

Kenya's nuclear power programme is being implemented through a phased approach aligned with international best practices, with

various government institutions playing complementary roles in planning, regulation, and eventual operation of nuclear facilities.

A key highlight of the briefing was the designation of KenGen as the prospective Nuclear Power Plant Owner-Operator. This development represents an important institutional step toward preparing Kenya for the future development, construction, and operation of nuclear power infrastructure.

KenGen's extensive experience in electricity generation positions the utility to play a central role in supporting the operational phase of the nuclear power programme once the project reaches the construction and commissioning stages.

### **Parliamentary Support for the Nuclear Programme**

Parliament plays a critical role in supporting strategic national projects through its legislative, oversight, and resource allocation functions. Engagements such as this briefing ensure that the country's leadership remains well informed on the progress of the nuclear programme and the frameworks required to support its successful implementation.

During the meeting, discussions also focused on strengthening the legislative and institutional



*Speaker of the National Assembly RT Hon Moses Wetangula*

environment necessary for the safe and effective deployment of nuclear energy technology in Kenya.

In addition to the existing **Nuclear Regulatory Act**, the leaders deliberated on the need to enhance nuclear legislation and provide adequate resources through the relevant House Committee to support government agencies responsible for implementing nuclear energy technology.

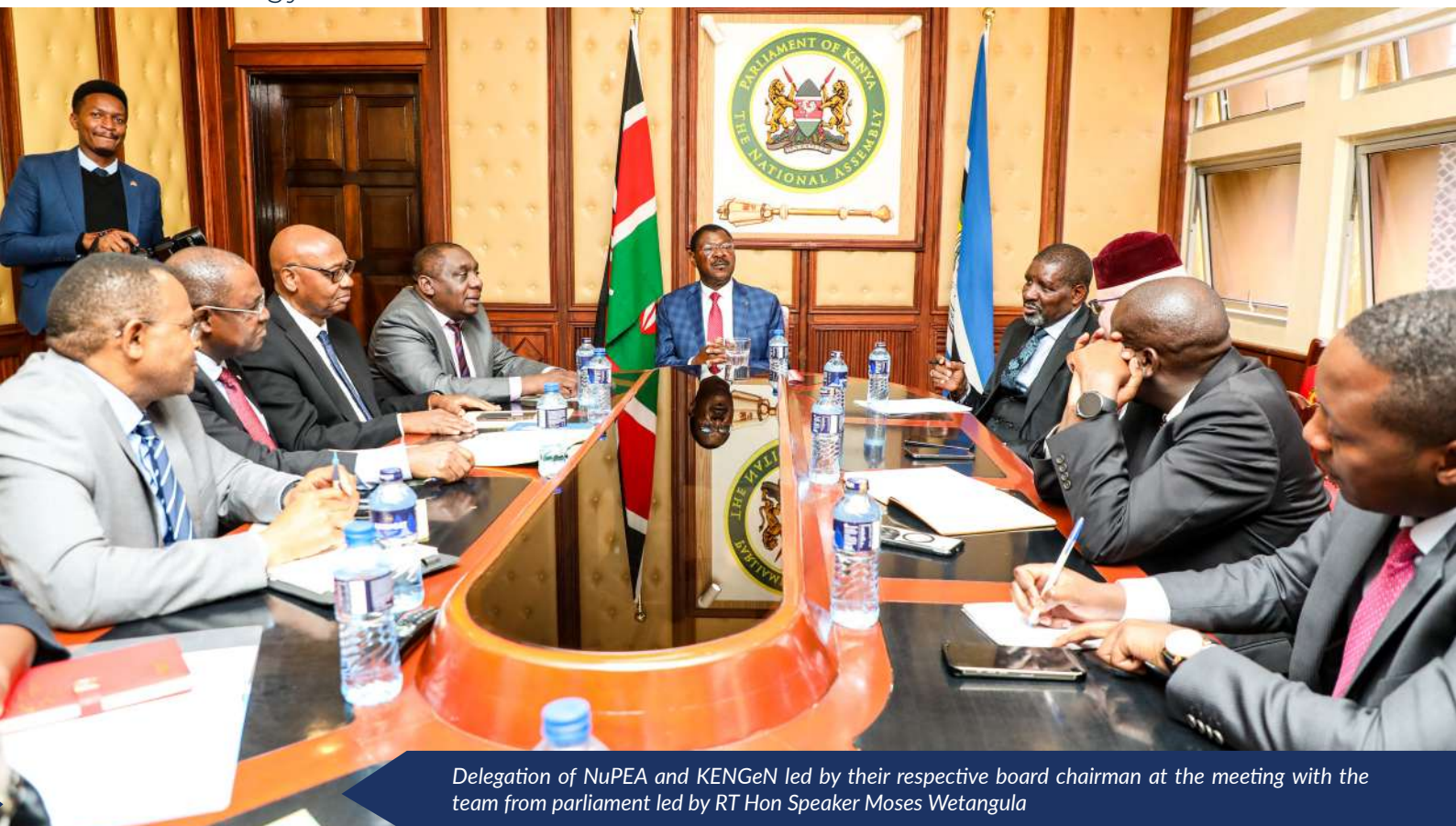
Strengthening the legislative framework is a key pillar in the development of nuclear power programmes worldwide, as it ensures that nuclear activities are implemented under robust governance structures that prioritize safety, security, and transparency.

### **Supporting Kenya's Future Energy Needs**

Kenya is pursuing nuclear energy as part of a long-term national strategy to ensure reliable and sustainable electricity supply as demand continues to grow. Nuclear power offers a stable and low-carbon source of electricity capable of complementing existing energy sources while supporting industrialization and economic development.

As the programme progresses, continued collaboration between Parliament, government institutions, and key stakeholders will remain essential in ensuring the successful implementation of the nuclear power programme.

The engagement between Parliament and the institutions leading the nuclear power programme reflects Kenya's commitment to building strong institutional foundations and ensuring informed decision-making as the country prepares for the introduction of nuclear energy.



*Delegation of NuPEA and KENGeN led by their respective board chairman at the meeting with the team from parliament led by RT Hon Speaker Moses Wetangula*



# Energy Week 2025 Shines Spotlight on Sustainable Power in Kitui County



NuPEA staff walk through stakeholder on the detailed literature at the NuPEA stand



**Kitui**

*By Jonathan Njoroge*

**F**rom 13th to 20th October 2025, Ministry of Energy and Petroleum, in collaboration with the National Holidays Thematic Committee and State Agencies (SAGAs), hosted a landmark Energy Week at Kitui Teachers Training College under the theme “Transforming Lives Through Sustainable Energy Solutions.” The week-long event brought together policymakers, industry players, students, and members of the public in a dynamic engagement aimed at shaping Kenya’s energy future, culminating in the national Mashujaa Day celebrations.

Kitui Town experienced a significant influx of visitors throughout the week, as delegates, exhibitors, and members of the public streamed into Kitui County for the Energy Week celebrations. The surge in numbers led to full occupancy in nearly all lodges and hotels within the town, forcing many visitors to seek accommodation in neighboring towns. The high turnout underscored the scale and national significance of the event, while also providing a notable boost to the local economy.

Energy Week commenced with a tree-planting exercise across various schools in Kitui County a symbolic gesture underscoring the energy sector’s commitment to environmental sustainability and climate action. Representatives from the Nuclear Power and Energy Agency (NuPEA) joined other agencies in supporting this initiative, reinforcing alignment with national conservation efforts.

Throughout the exhibition period, NuPEA hosted an interactive booth at the Energy Pavilion alongside other energy sector agencies. The Agency attracted significant attention from visitors eager to understand nuclear energy safety measures, environmental safeguards, employment and investment opportunities, and nuclear power's potential contribution to Kenya's energy security and industrial growth. A key highlight of the booth was a virtual 3D model of a nuclear power plant, which provided an immersive and simplified explanation of how nuclear energy is generated. The model proved to be an effective educational tool, drawing students, professionals, policymakers, and members of the public, and demonstrating growing curiosity and openness toward nuclear power as part of Kenya's clean energy transition.

During the conference sessions, Dr. Winnie Ndubai, NuPEA's Director of Strategy and Planning, participated in the Electricity Generation panel discussion, where she outlined key milestones achieved in Kenya's nuclear journey and emphasized the strategic importance of nuclear energy in supporting long-term sustainable development. On the second day, discussions centered on promoting Science, Technology, Engineering, and Mathematics (STEM) within the energy sector. Ms. Hilda Mpakany, Acting Director for Research and Energy Development at NuPEA, contributed to a panel on STEM applications in energy, highlighting progress in Kenya's Nuclear Power Programme and stressing the critical role of STEM skills in advancing nuclear technology and innovation.

Midway through the event, news broke of the passing of former Prime Minister Raila Odinga. The announcement deeply affected attendees and shifted the tone of the gathering. Following an emergency meeting, conference sessions were temporarily suspended as a mark of respect and to allow the nation time to mourn. Despite the suspension of formal sessions, exhibition activities continued to ensure sustained public engagement

throughout the week.

EnergyWeekalsoextendeditsimpactbeyond policy dialogue and exhibitions by offering a free medical check-up and treatment camp for Kitui residents. The initiative attracted a large number of beneficiaries, reinforcing the event's community-centered approach and commitment to improving lives beyond the energy sector.

The week concluded on 20th October 2025 with national Mashujaa Day celebrations presided over by H.E. William Samoei Ruto. In his address, the President emphasized the importance of affordable energy as a catalyst for economic transformation and reiterated the government's commitment to constructing a nuclear power plant in Kenya, affirming the country's resolve to secure a cleaner, more reliable, and inclusive energy future for all.



Dr Winnie Ndubai interacts with stakeholders visiting the NuPEA exhibition stand



# ICONE

K E N Y A

*Pictorial*









# KEEP: POWERING KENYA'S FUTURE, PROTECTING ITS ENVIRONMENT



(CFA officials, KFS officers and scouts who benefitted from the 4 year rehabilitation project by keep fund in Ndoinet forest, Nakuru)



**Londiani**

*By Dennis Nkonge*

**T**he Energy Sector Environment and Social Responsibility Programme (KEEP) was conceived in response to the Presidential directive of 12th December 2006. From the outset, it was intended to be more than a compliance measure; it reflected a deliberate commitment by the energy sector to take responsibility for its environmental footprint and lead by example.

To anchor this commitment in law and ensure accountability, KEEP was established under the Public Finance Management Act through Legal Notice 188 of 2007, later amended by Legal Notice 218 of 2020. The programme was formally launched in June 2008, providing a structured framework to guide the sector's environmental stewardship efforts. KEEP has a committee with representatives from all the Semi Autonomous Government Agencies {SAGAs} and the Ministry of Energy and Petroleum..

Nearly two decades later, the results speak volumes.

One of the programme's most visible achievements has been the rehabilitation of 2,228 hectares of degraded water catchment areas across the country. These landscapes are not just green spaces on a map but they are the lifeblood of Kenya's hydropower system. According to Programme Coordinator Director Esther Wang'ombe, the initiative contributes to improved water flow for hydropower generation, energy efficiency and conservation, environmental protection, job creation, and better livelihoods for communities living near forest ecosystems.

The establishment of tree nurseries in multiple regions created a ripple effect of impact.

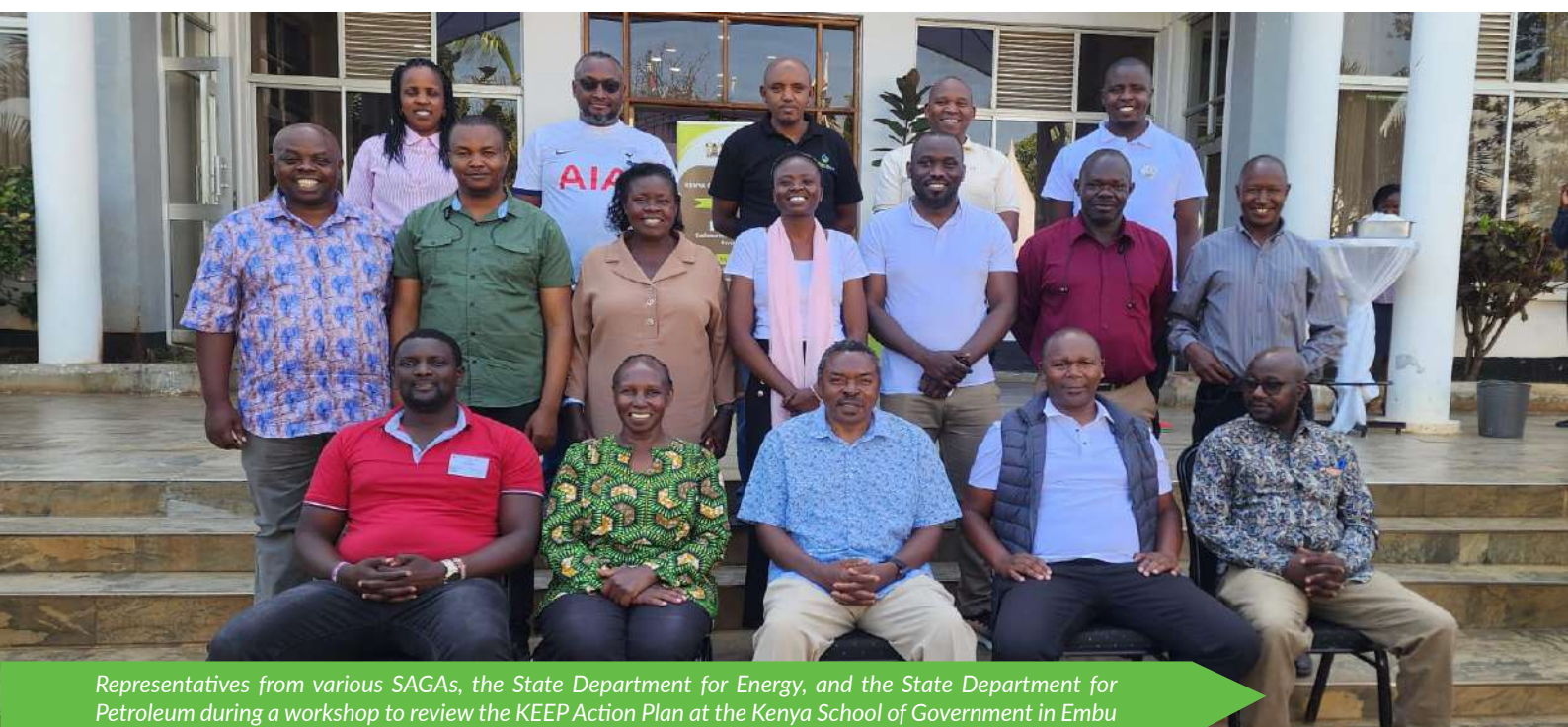
Seedlings were supplied to farms, schools, and community groups, turning tree growing into a shared national responsibility rather than a top-down directive. Schools became hubs of environmental learning, farms integrated woodlots for fuel and income, and communities embraced conservation as an economic opportunity. Thousands of trees planted under KEEP now stand as living evidence of long-term planning and collective effort.

Beyond environmental restoration, KEEP delivered meaningful socio-economic benefits. Local communities were engaged in nursery management, site preparation, planting, and maintenance activities—creating jobs and building practical skills. The programme demonstrated that environmental protection does not have to compete with livelihoods; it can strengthen them. Income generated from tree-related activities and conservation work provided tangible incentives for communities to safeguard natural resources.

KEEP also broke new ground by funding household and indoor air quality studies in selected counties. These studies examined the health and energy implications of different cookstove technologies, generating evidence that has informed the promotion of cleaner, more efficient alternatives. By addressing indoor air pollution and reducing dependence on unsustainably harvested fuelwood, the programme tackled both public health and environmental degradation in one coordinated effort.

Perhaps the greatest success of KEEP lies in its integrated approach. It recognized that energy efficiency, tree growing for woodfuel and commercial purposes, hydropower catchment management, capacity building, and public awareness are not isolated activities. They are interconnected pillars of a sustainable energy ecosystem. By anchoring conservation within the energy sector's operational framework, KEEP shifted environmental responsibility from being an afterthought to becoming a core function.

Today, as the Ministry prepares for a new five-year phase, KEEP stands as a proven model of how policy vision, legal backing, and community participation can translate into measurable national impact. It has restored ecosystems, supported livelihoods, advanced clean energy solutions, and strengthened public awareness. In doing so, it has shown that responsible energy development is not just possible but it is practical, scalable, and essential for Kenya's future.



*Representatives from various SAGAs, the State Department for Energy, and the State Department for Petroleum during a workshop to review the KEEP Action Plan at the Kenya School of Government in Embu*



# Listening by the Lake: Building Trust for Kenya's Nuclear Future in Siaya



JOOUST Vice Chancellor Prof Emily Achieng Akuno gives her remarks at NuPEA's workshop with Siaya County National Government Administrative Officers (NGAO) at the launch of the grassroots stakeholder engagement programme in the county



*By Gabriel Odhyambo*

**A**long the shores of Lake Victoria, where fishing boats glide across quiet waters and farmlands stretch toward the horizon, Kenya's nuclear future is quietly taking shape. It is not unfolding solely in policy papers, technical drawings, or high-level boardrooms, but through candid conversations with the people who call Siaya home. Whereas engineering precision may power a reactor, public confidence will ultimately power the programme, making the voices of local residents just as critical as any design blueprint.

From 15th to 19th September 2025, the steady cadence of village life was punctuated by conversations that had rarely echoed in these communities: megawatts, reactor technology, radiation safety, and nuclear regulations as the Nuclear Power and Energy Agency (NuPEA) embarked on an unprecedented dialogue with the residents of Siaya

County, a potential host for Kenya's first nuclear power plant.

It was not just a public sensitization exercise. It was a deep dive into the hopes, fears, and curiosity of a community determined to understand how nuclear energy could reshape their lives and ultimately help to shape Kenya's energy future.

From the outset, NuPEA officials set the context, explaining the Agency's mandate under the Energy Act of 2019 and outlining Kenya's long-term nuclear power programme. They spoke of stringent safety standards, independent regulatory oversight, environmental safeguards, and the carefully phased approach that guides nuclear development worldwide. The presentations were comprehensive and measured. Yet, the most compelling moments were not in the prepared remarks, rather in the questions that followed.

Residents sought clarity on how much land would be required and what fair compensation frameworks would entail. They asked why Siaya had been identified as a potential site and whether alternative locations had been considered. Fisherfolk voiced concerns about the temperature of discharged cooling water and its possible impact on fish stocks and the lake's ecosystem. Some participants referenced global nuclear accidents, pressing for assurances about Kenya's emergency preparedness capacity. Others raised concerns about radioactive waste management, uranium sourcing, and whether public participation would be meaningful and sustained rather than merely procedural.

*"The engagement laid a strong foundation for trust-building. NuPEA's commitment to consolidating stakeholder feedback, refining its public engagement strategies, and sustaining continuous dialogue signaled that this was not a one-time visit, but the beginning of a long-term relationship"*

The NuPEA team, comprising officers from various departments, responded by fostering open dialogue, explaining processes in both English and Dholuo, and carefully documenting the concerns raised. They drew on examples from existing nuclear power plants around the world to illustrate key points and provide context, reassuring residents about the robust safety measures and international standards that underpin nuclear energy programmes.

From Ugambe, Sirongo, Manyuanda, Liunda, Nyangoye, Kanyawayaga, Osindo all the way to Dagamoyo, the pattern was remarkably consistent. The communities were not dismissing nuclear power; they were seeking clarity, fairness, and assurance. Land and livelihoods stood at the center of their concerns. For many families, land is inheritance, identity, and economic survival. Fishing communities, whose lives are interwoven with Lake Victoria, were particularly sensitive to environmental safeguards. They wanted to know that the lake's delicate ecosystem would be protected, that water returned to it would remain safe, and that regulatory bodies such as NEMA and KNRA would enforce strict standards.

Alongside the caution was unmistakable curiosity. A section of residents asked detailed technical questions about reactor types, steam generation capacity, and Kenya's current energy mix. They inquired about education pathways, admission requirements for nuclear-related courses, and employment prospects during construction and operation. Nuclear energy, in their eyes, was not merely about electricity; it was about transformation, scholarships, roads, infrastructure, and economic growth.

Dons from Jaramogi Oginga Odinga University of Science and Technology (JOUST), who accompanied the NuPEA team, informed residents about a Memorandum of

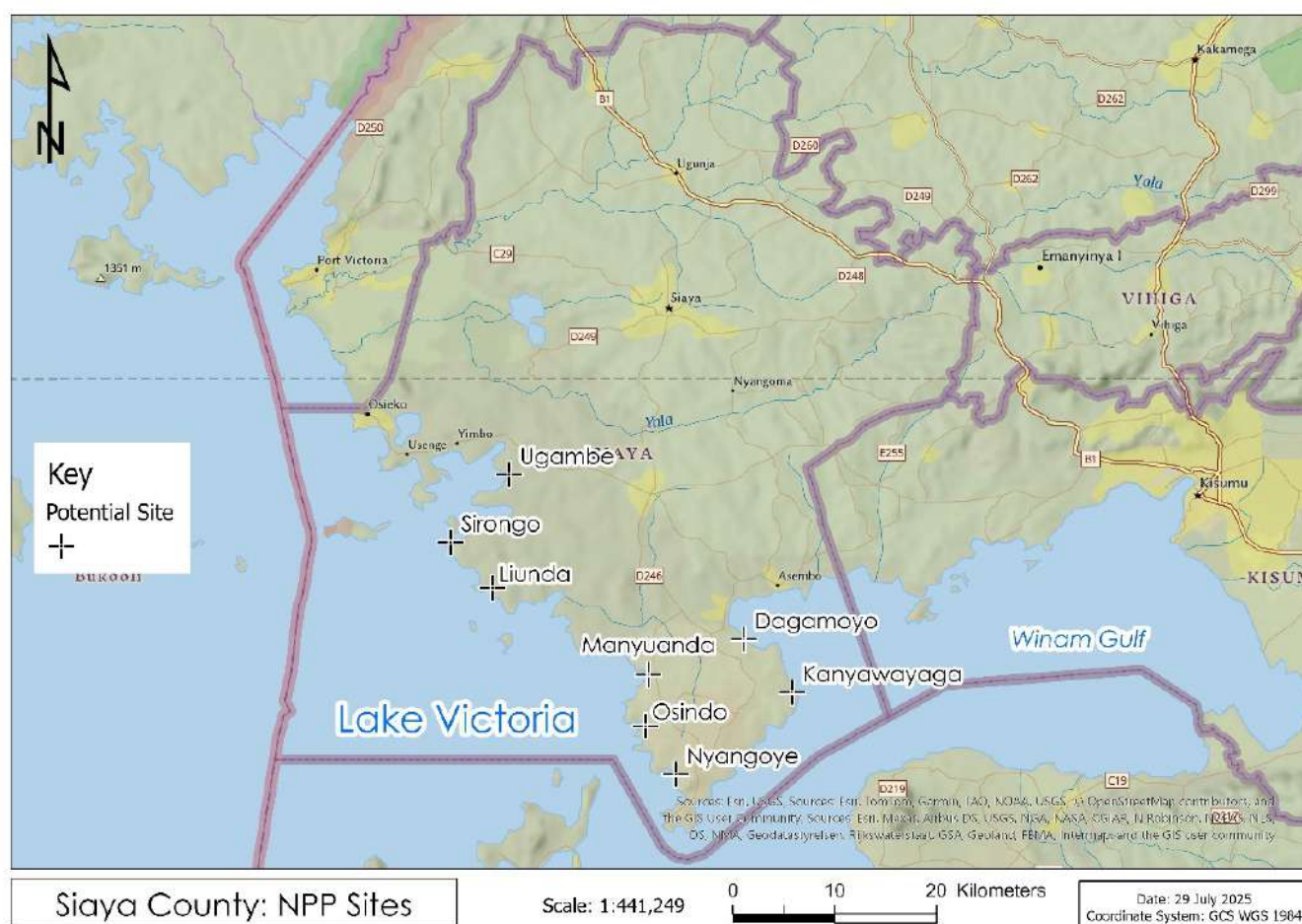


Understanding between the University and NuPEA. They explained that the two institutions have a partnership designed to support capacity building and to equip local communities with the knowledge and skills needed to access training and employment opportunities associated with the Nuclear Power Plant.

By the final day in Dagamoyo, a pattern had become clear. The people of Siaya were informed and engaged. They wanted guarantees on safety, fairness in land acquisition, meaningful local employment, and visible infrastructure improvements. They asked for balanced communication, not just the benefits of nuclear power, but also its risks and how those risks would be mitigated. Above all, they wanted to be partners in the journey rather than passive recipients of decisions.

The engagement laid a strong foundation for trust-building. NuPEA's commitment to consolidating stakeholder feedback, refining its public engagement strategies, and sustaining continuous dialogue signaled that this was not a one-time visit, but the beginning of a long-term relationship. Recognizing that stakeholder engagement is a continuous process throughout the lifecycle of a nuclear programme, the Agency reaffirmed its dedication to keeping communities informed, involved, and heard at every stage.

As conversations in Siaya continue, it becomes ever clearer that Kenya's nuclear journey will be built not just on technology and policy, but on trust, transparency, and shared purpose. The voices along the shores of Lake Victoria are becoming part of the very foundation on which the programme will stand. With sustained openness and accountability, this dialogue will ensure that when Kenya's first nuclear power plant rises, it will do so not merely as an engineering feat, but as a national project shaped, strengthened, and embraced by the communities it is meant to serve.





## Liunda



## Sirongo



## Dagamoyo



## Nyangoye



## Manyuanda



## Kanyawayaga



## Ugambe



## Osindo





# QUEENTER OSORO

Nuclear Scientist



**Nairobi**

*By Irene Njoroge*

**Q**ueenter Osoro is a Nuclear Scientist in the Nuclear Energy Infrastructure Development Directorate, where she leads radiation protection infrastructure initiatives supporting Kenya's nuclear power programme. She holds a Bachelor's degree in Chemistry and a Master's degree in Nuclear Science from the University of Nairobi and is currently pursuing a specialized Master's degree in Nuclear Safeguards at Politecnico di Milano.

Her expertise spans nuclear safety, radiation protection, safeguards, Nuclear Fuel Cycle and nuclear infrastructure development. She has undertaken several international technical trainings and fellowships in areas including nuclear leadership, regulatory frameworks, waste management, and nuclear knowledge management.

Beyond her technical work, Queenter is deeply passionate about mentorship, talent development, and personal growth. She actively supports young professionals entering the nuclear field and advocates for building sustainable human capacity to strengthen Kenya's nuclear future.

## **Tell us about your career journey — what drew you into nuclear energy?**

Honestly, I didn't grow up saying, "I want to work in nuclear energy." But I've always loved science and I've always been drawn to fields that carry responsibility and impact.

During my undergraduate studies in Chemistry, I took a unit that introduced us to nuclear science. That's when something shifted for me. I began to see nuclear energy not just as a technical subject, but as something deeply connected to national development. It influences energy security, climate change discussions, economic growth, and even international diplomacy. That complexity fascinated me.

## **You're known as a strong advocate for mentorship. Where did that passion come from?**

It really comes from experience. Even back in high school, I was drawn to motivational speakers especially young women who had gone through the education system and succeeded. I remember listening to their stories so intently. They made success feel possible.

That's when I realized something powerful: learning from people who are a few steps ahead of you can completely shift your confidence and direction. And that lesson has stayed with me ever since.

Early in my career, there were moments when I questioned whether I truly belonged in such a technical field. What changed everything were mentors who saw potential in me sometimes before I saw it in myself. That experience shaped me deeply. I realized that talent is everywhere, but exposure and guidance are not. Mentorship bridges that gap. Sometimes all someone needs is a little clarity and encouragement to step into their potential.

## **What makes mentorship effective in a complex field like nuclear energy?**

Nuclear energy is highly technical, yes but at its heart, it's also deeply human. Behind every system, every protocol, every calculation, there are people carrying responsibility. That's why effective mentorship in this field has to combine competence and care. You're not only guiding someone through reactor physics or radiation protection principles; you're helping them grow into the weight of the responsibility that comes with this profession.

In nuclear, mentorship goes beyond formulas and regulations. It's about building quiet confidence, strengthening safety culture, and reminding young professionals that their decisions carry impact. Ultimately, it's about shaping both skill and character because in this field, you need both.

## **How do you adapt your approach for different groups students, early-career professionals, and colleagues?**

With students, it's really about exposure. Many of them don't even realize how wide the nuclear field is that it's not just reactors, but environmental science, safeguards, policy, communication, economics, and more. I try to open that window for them. Once they see the possibilities, something shifts. They begin to imagine themselves in the space.

With early-career professionals, the conversation becomes more intentional. It's about sharpening skills, building confidence, and helping them position themselves strategically. At that stage, people often have potential but need clarity, clarity about their strengths, their direction, and the opportunities they should be pursuing.



With colleagues, mentorship feels more like partnership. The discussions are about leadership, navigating institutional realities, making difficult decisions, and influencing change responsibly. It becomes less about guidance and more about growing together while holding each other accountable.

### **What misconceptions do young people often have about nuclear energy?**

The biggest one? That nuclear energy is inherently unsafe.

I take time to explain defense-in-depth, regulatory oversight, safety culture the layers and layers of protection built into modern systems. Once they understand the science and governance behind it, the fear often turns into curiosity.

Another misconception is that nuclear careers are limited to engineers. I always emphasize that this field needs communicators, environmental scientists, economists, lawyers it's multidisciplinary by nature.

### **Is there a mentorship moment that stands out to you?**

Yes, one mentee once told me, "You helped me see myself differently."

One of the most affirming moments is seeing mentees step into international platforms, presenting papers, securing fellowships, or gaining admission into competitive programs. When they return and mentor others, that is when the impact becomes generational.

Moments like that remind me that mentorship isn't about creating followers. It's about unlocking leaders.

### **How do you measure impact in mentorship?**

On a personal level, I measure it by growth when someone begins to take initiative, speak up confidently, and pursue opportunities boldly.

### **What challenges do you face, particularly when mentoring young women?**

Imposter syndrome is real. One challenge is overcoming internal doubt. Many young women underestimate their competence in technical spaces. They hesitate to speak up in technical rooms. Sometimes they are waiting to be "perfect" before stepping forward. There are also limited visibility, fewer role models, and societal expectations. I try to normalize growth. You don't need to know everything to contribute. You need to be willing to learn. Addressing this requires consistent encouragement, representation, and institutional support.

### **How can institutions strengthen mentorship?**

Mentorship should be intentionally embedded within an institution's talent development strategy not left to chance.

Having been in charge of internship training for the Nuclear Energy Infrastructure Development Directorate, I have seen firsthand how structured mentorship strengthens capacity, builds confidence, and accelerates professional growth. I pair early-career professionals and interns with senior technical leads to promote knowledge transfer and practical learning. Over the years, this approach has proven highly effective not only in developing technical competence, but also in nurturing leadership potential.

Based on this experience, I strongly believe this model can be scaled across the entire organization. By integrating structured mentorship into workforce planning and leadership development frameworks, institutions like NuPEA can strengthen succession planning, preserve institutional knowledge, and build a sustainable pipeline of skilled nuclear professionals.

### **What's your vision for mentorship in Kenya's nuclear industry?**

I envision a strong, intergenerational mentorship culture where experienced professionals intentionally prepare the next cohort.

As we move toward deployment, we must build not only technical capacity but ethical, safety-conscious, globally connected leaders. Mentorship will be central to that.

### **What advice would you give to young professionals, especially women?**

Don't shrink yourself in technical spaces. Ask questions. Take opportunities. Apply even when you feel 70% ready.

The nuclear field requires discipline and resilience but it also needs diverse perspectives. Your voice is not an exception here. It's necessary.

### **If you could speak to your younger self, what would you say?**

I would say: "Be bold earlier."

I spent time waiting to feel completely ready. Prepare well, speak confidently, and trust that your perspective is valuable. Leadership is not about perfection it is about responsibility."

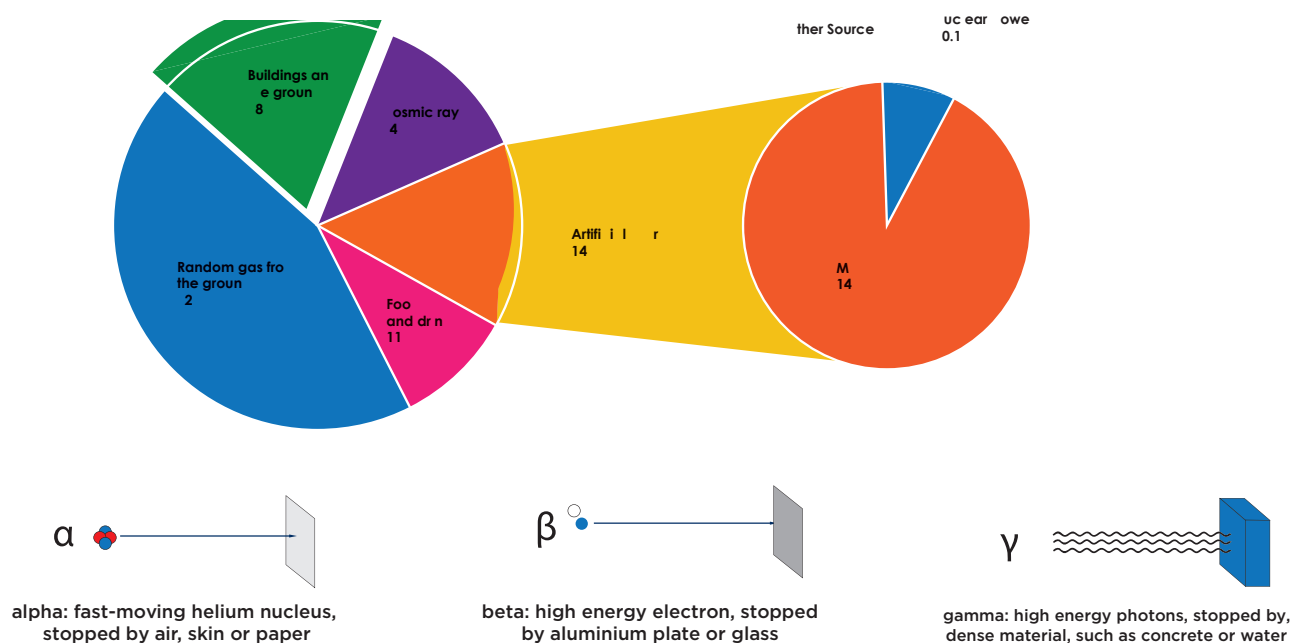


Ms Quenteer making a presentation at the 25th INPRO Dialogue Forum in Nairobi.



# RADIATION SOURCES AND FACTS

## Sources of background radiation



## Protection from radiation

### 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.

**Time:** Dose is reduced 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.

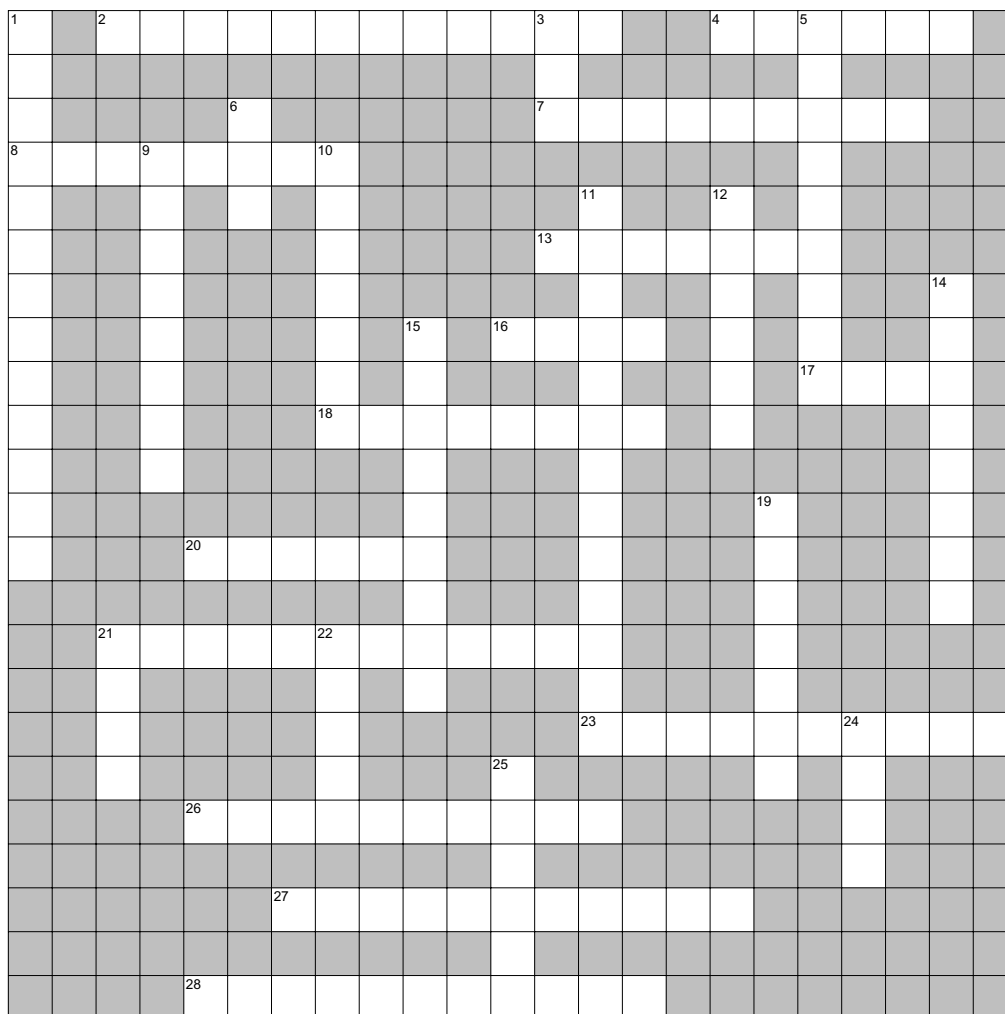
**Limitation:** The exposure of individual should be subject to dose or risk limits, above which the radiation risk would be deemed unacceptable.

## 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**.

# Nuclear Science & Technology

## CROSSWORD PUZZLE



### Across

2. energy released in nuclear reactions
4. joining together of light nuclei to form heavier nuclei
7. the result of contaminating
8. device that is sensitive to radiation
13. a long slender tube that holds fissionable material for nuclear reactor use
16. a natural nuclear reactor operated in Africa
17. mother earth
18. April 22nd
20. a positively charged ion
21. number of positively charged protons
23. a product of the uranium milling process
26. generates electricity by using a nuclear reactor
27. exposure to radiation
28. surroundings, location, habitat

### Down

1. the minimum energy you have to add to separate a nucleus
3. space between fuel pellet and fuel rod cladding
5. layers of high density material that absorbs radiation and is designed to protect personnel or material from ionizing radiation
6. amount of heat required to change the temperature of one pound of water one degree Fahrenheit
9. the absorption of radiation of a radionuclide
10. to reprocess to reclaim to reuse
11. the energy liberated by fission or fusion
12. an elementary nuclear particle with a positive electric charge
14. anything that absorbs heat
15. aluminum, stainless steel and \_\_\_\_\_ are alloys that are common cladding materials
19. the splitting of a nucleus
21. the smallest part of an element that can't be divided by chemical means
22. the basic unit used to describe the intensity of radioactivity.. or the rate of decay of 1 gram of radium
24. central portion of nuclear reactor
25. atomic number 88



# WORLD NUCLEAR POWER REACTORS

## 1951- 2026

AS OF 14<sup>TH</sup> APRIL 2026

**828 REACTORS**

**75 YEARS OF NUCLEAR POWER**



**FLEET**



**AGE**



**CAPACITY**

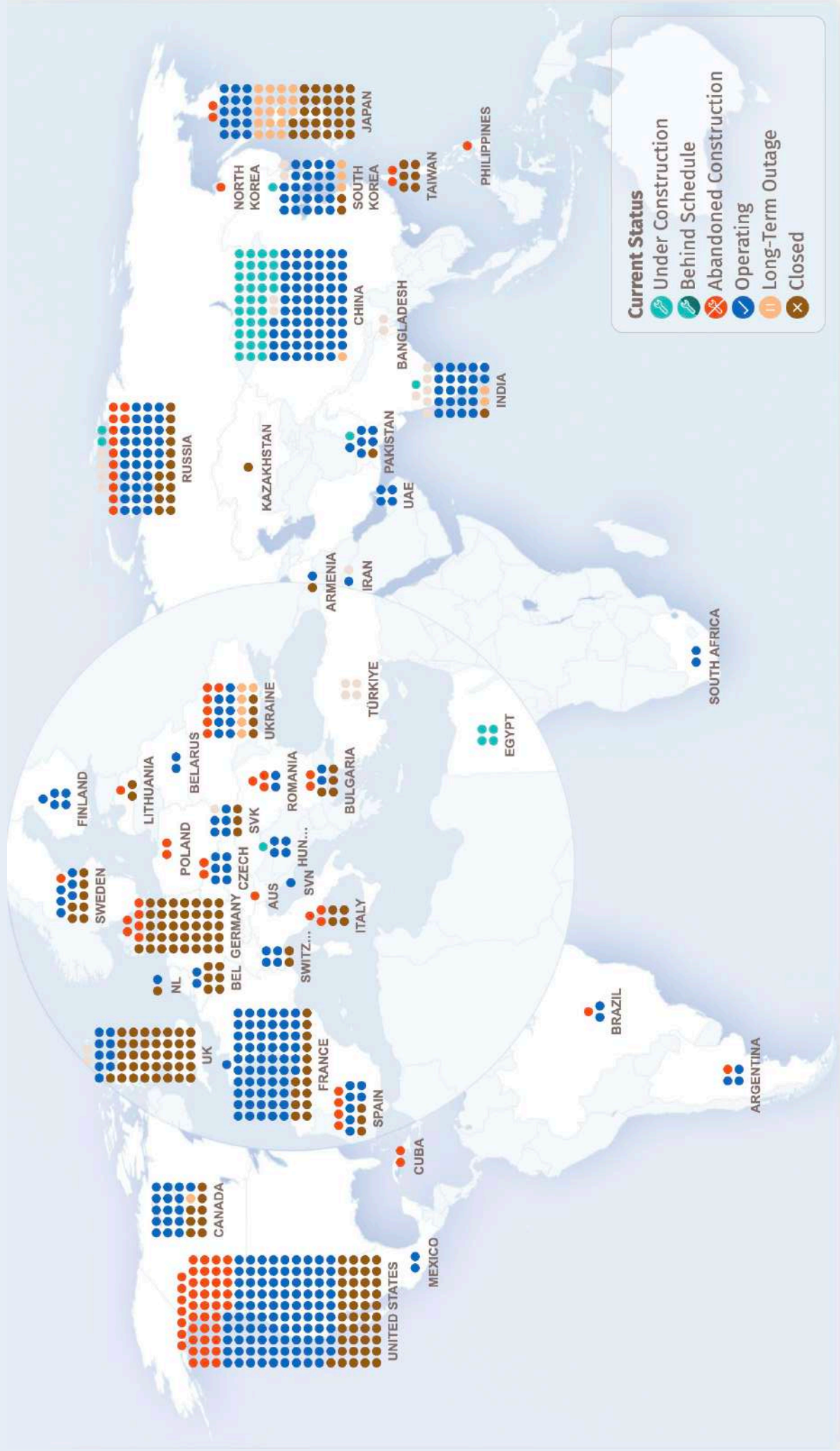


**CONSTRUCTION**



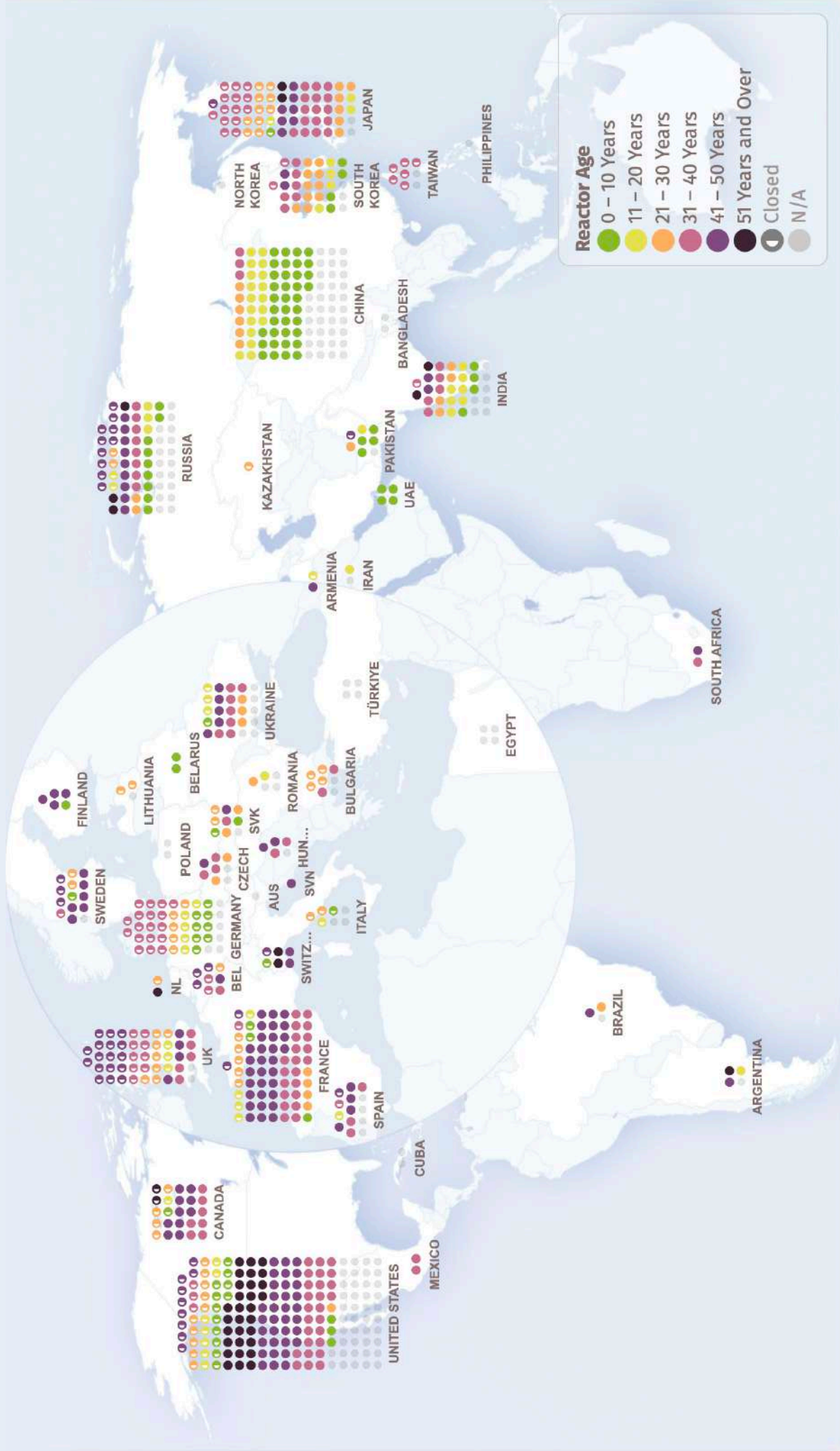
**TECHNOLOGY PROVIDER**

# FLEET

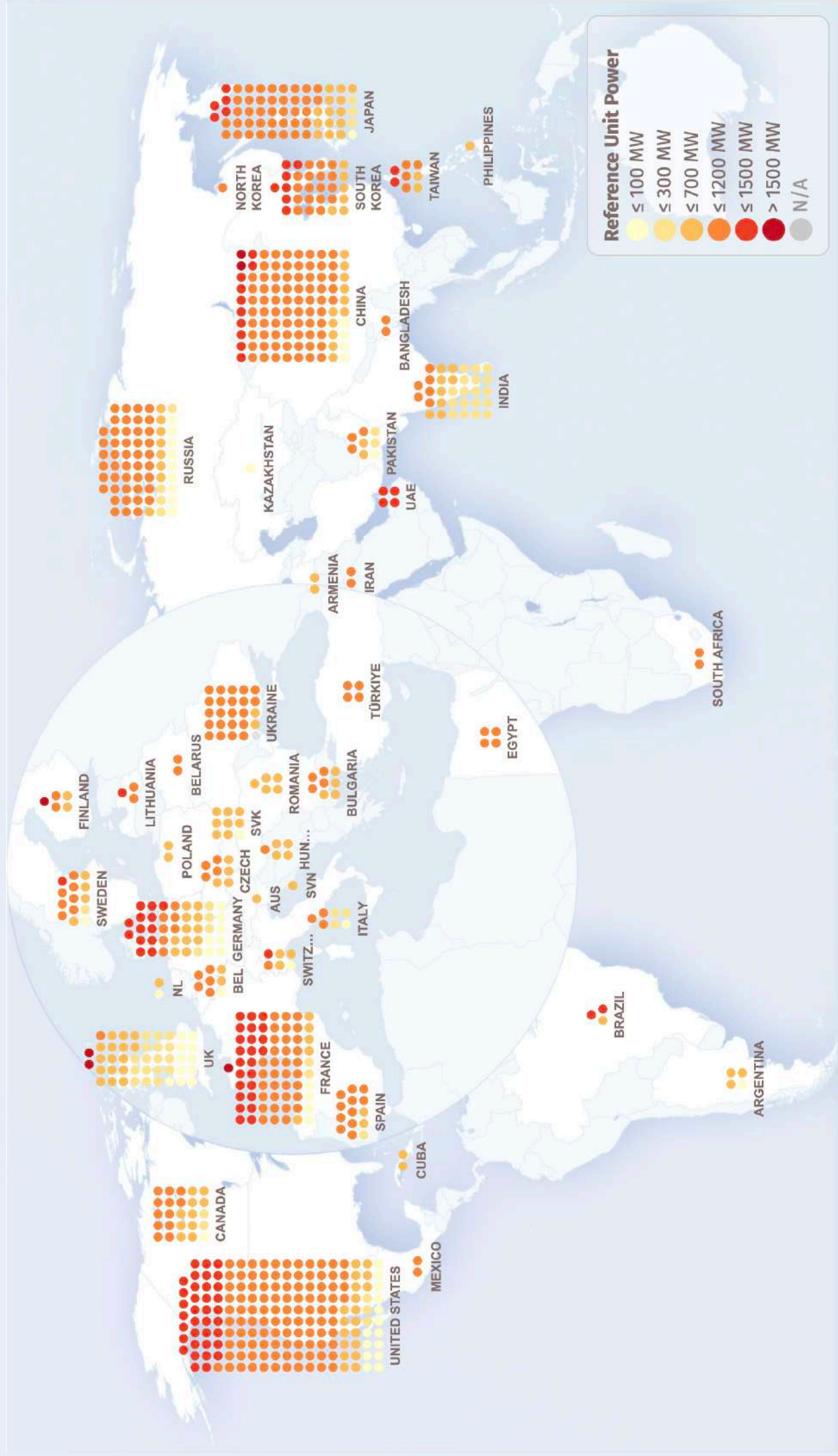




# REACTOR AGE

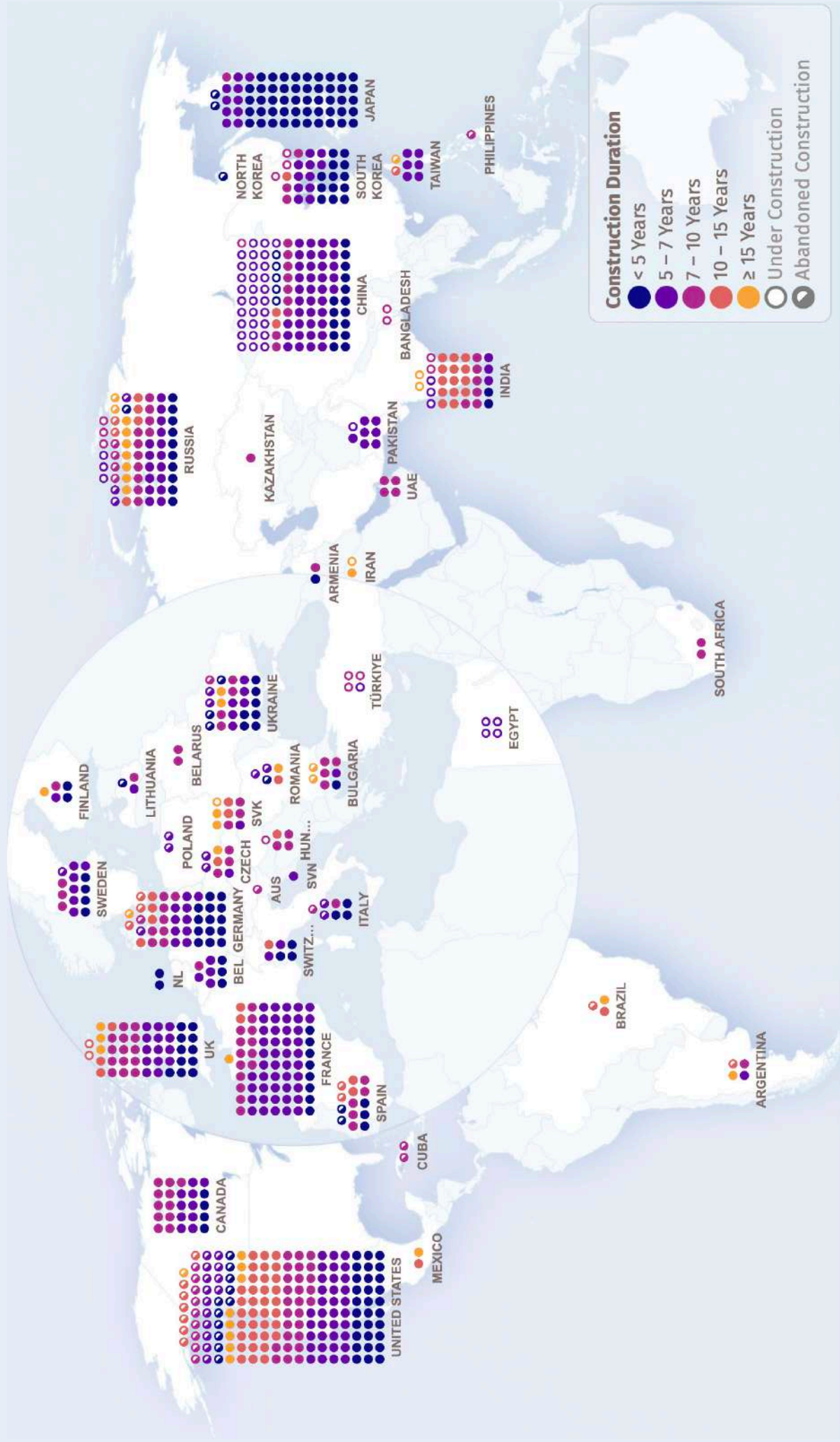


# CAPACITY

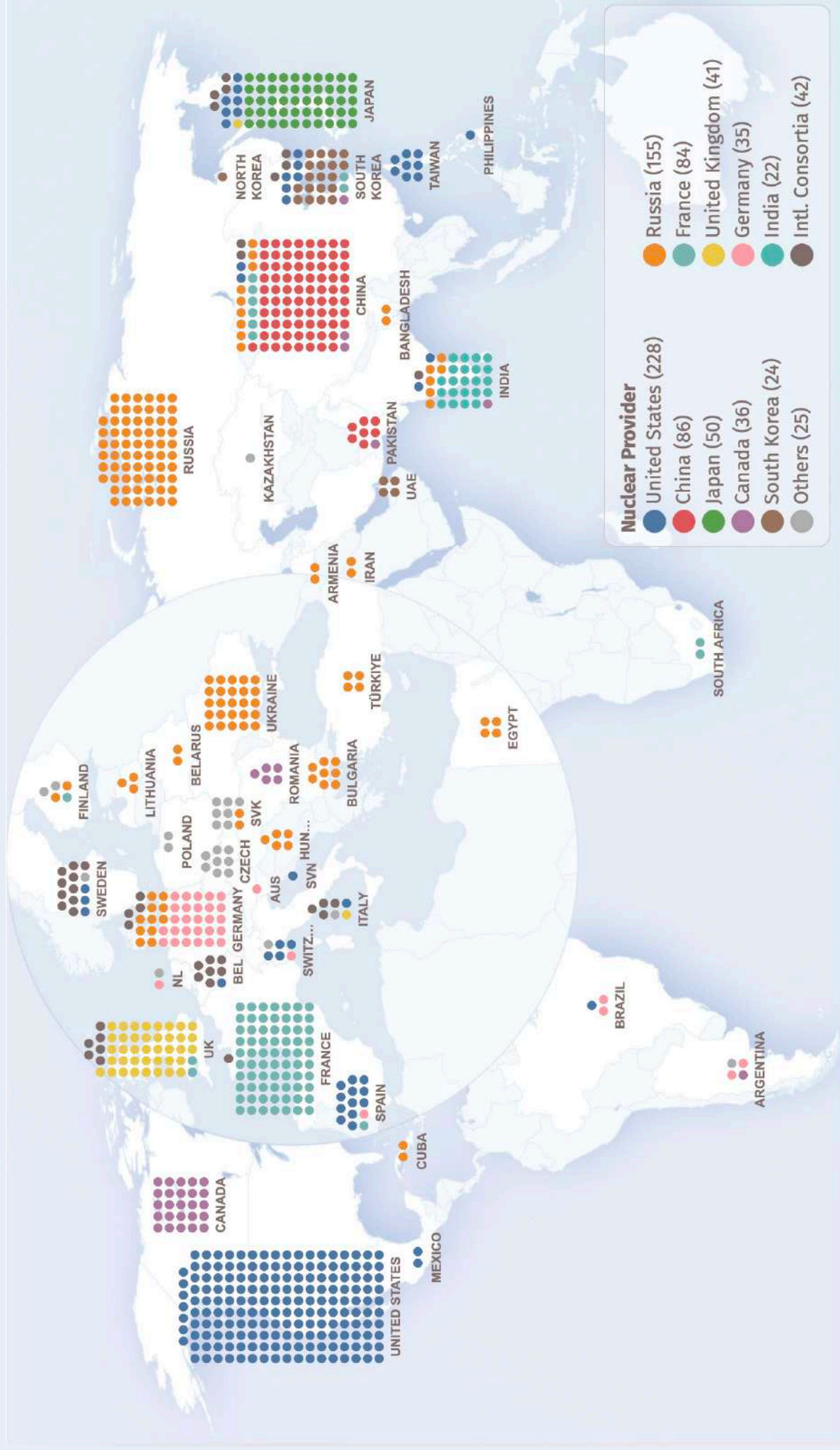




# CONSTRUCTION TIME

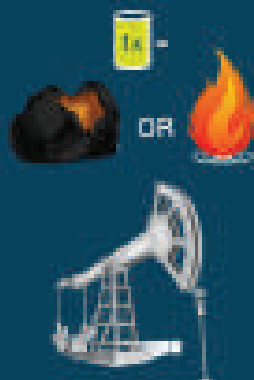


# NUCLEAR PROVIDER





# 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 650,000 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.



# BOARD OF DIRECTORS



**Abdisalan Abdi**  
Independent Member



**Eng Prof Lawrence Gumbe**  
Chairman of the Board



**Dr Anne Michura**  
Independent Member



**Francis Agar**  
Independent Member



**Ms Carren Olweny**  
Independent Member



**Ms Irene Okwach**  
Alternate to  
Attorney General



**Lilian Wanjama**  
Alternate to PS  
State Department of Energy



**Dr Stephen Situma**  
Alternate to PS State Dept for  
Science, Research and Innovation





Nuclear Power and Energy Agency / Kawi House, South C  
P.O. Box 26374 00100 Nairobi, Kenya / Tel: +254 (20) 5138300 / Email: [info@nuclear.co.ke](mailto:info@nuclear.co.ke)