ZAMBIA'S ENERGY MIX: IS NUCLEAR THE OPTION?

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8th May, 2026

Presentation Outine

- Introduction
- Why Energy Mix?
- Policy and Institutional Framework
- Strategic Partnerships
- Current Plans for Nuclear (Law, FNPPs & Land NPPs)
- Challenges and Way Forward
- Alternatives

Why Energy Mix?

- Electricity generation Capacity was at 3,985.86 MW by mid-2025. Over 85% of it comes from hydropower. Still only 54% Zambians access the national power grid with many being in Urban Areas. The Population is about 22million people.
- Zambia's Integrated Resource Plan forecasts a sharp rise in electricity demand by 2030.Diversifying the energy mix is critical to ensure energy security, economic resilience, and low-carbon growth.
- Zambia has the potential to generate 2,300 MW of solar and 3,000 MW of wind, only 225 MW of solar has been installed and there is no wind power to date
- There are opportunities in electricity generation, transmission, and storage, particularly with regards to renewable energy sources (i.e. wind, solar, and hydro).

Policy and institutional Framework

- ***National Nuclear Policy (2020)Approved by Cabinet in November 2020***.
- ✓Defines Zambia's commitment to the peaceful use of nuclear technology.
- ✓Aligns with Vision 2030, emphasizing energy security, economic transformation, and scientific advancement.
- ***Institutional Architecture Plans***
- I. Zambia Atomic Agency
- ✓Will serve as the owner/operator of nuclear facilities and will be responsible for implementation and project coordination.
- II. Nuclear Safety and Protection Authority (NSPA)
  ✓Evolving from the Radiation Protection Authority (RPA).
  ✓Will function as the independent regulator, ensuring nuclear safety, security, and compliance

Partnerships

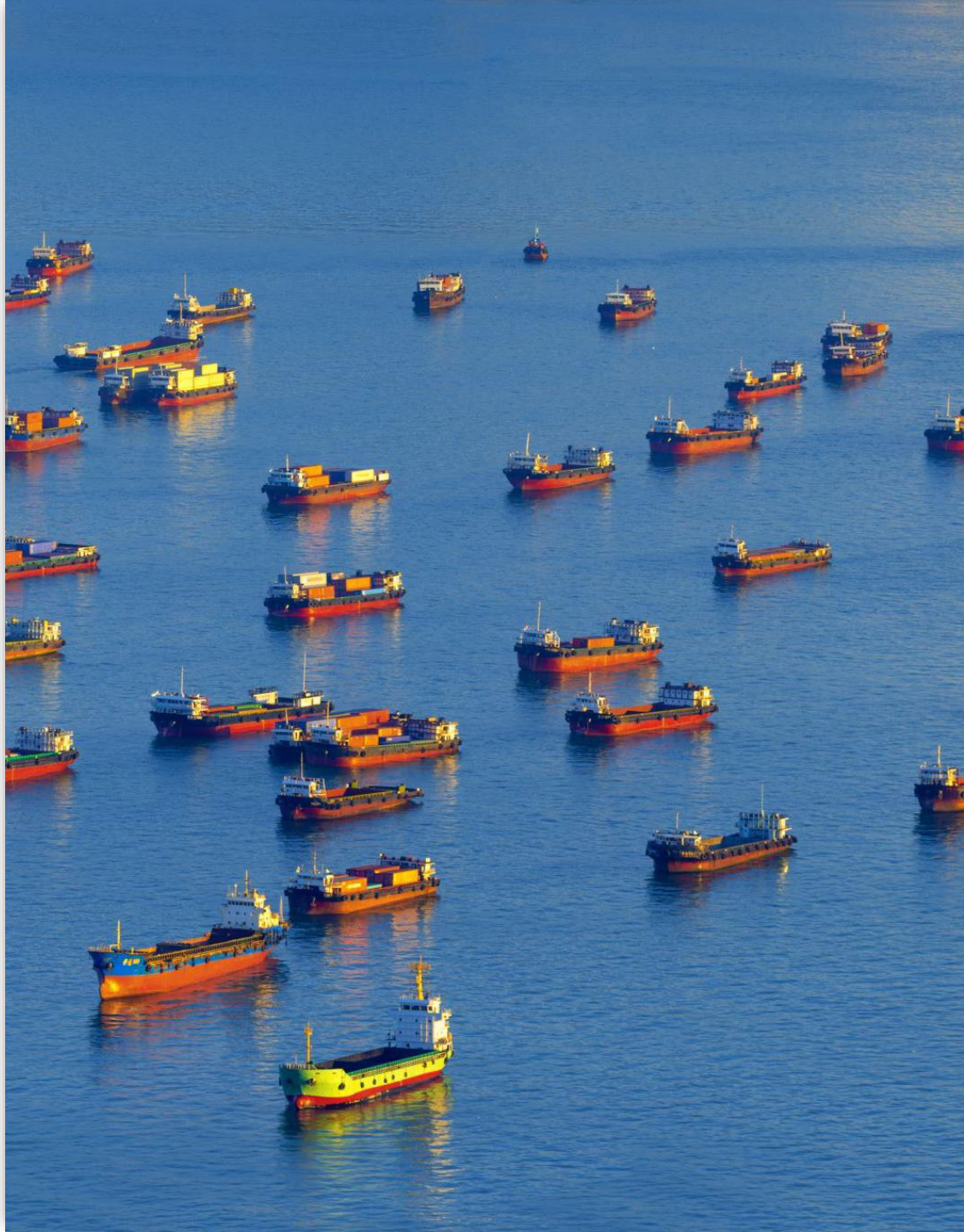
- I. Russia (ROSATOM)
- ✓Signed Project Development Agreement (2017) for feasibility studies and long-term cooperation.
- ✓Includes plans for a Nuclear Power Plant and the Centre for Nuclear Science and Technology (CNST).
- II. United States (IP3/Allied Nuclear Partners)
- ✓Technical cooperation and strategic advisory in nuclear energy systems and innovation.
- III. South Korea (KAERI) Govt Funded Research Institute
- ✓Collaboration on research and development, human capital, and technical exchange.
- ***What Has Been Done so far:***
- Established National Nuclear Policy (2020) |Cabinet endorsed continuation of the nuclear programme |Training and participation in IAEA forums and workshops

Current PLANS to Challenge

- 1. Finalize and Enact a Nuclear Bill
  ✓Strengthen legal and regulatory framework aligned with IAEA standards.
  2. Advance Implementation of CNST and Pre-Feasibility Studies:
  ✓Continue groundwork for both land-based NPPs and potential FNPP deployment.
- 3. Engage in Regional Cooperation
  ✓Develop transit agreements with coastal countries for FNPP logistics.
  Advocate for nuclear infrastructure harmonization in SADC.
  4. Expand IAEA and Bilateral Training Opportunities
  ✓Focus on regulators, engineers, legal drafters, and emergency response teams.
  5. Pilot FNPP Feasibility Assessments
- ✓Identify candidate sites and evaluate operational, environmental, and logistical factors.

Key Challenges: We Are Not Ready so Why Should we?

- **Govt's Challenges and Way Forward**
- I. Landlocked Geography
- Suggested FNPP deployment requires coastal access, transit security, and international coordination.
- II. Regulatory Capacity Gaps
- Need for legal instruments covering mobile/floating reactors, nuclear liability, and transport safety.
- III. Human Capital Limitations
- Shortage of trained professionals for nuclear operations, safety regulation, and emergency response.
- IV. Public Awareness & Confidence
  Need to build trust in nuclear energy through education and transparency.
- Think about Environmental Disasters-Lead Poisoning in Kabwe, Chambishi Mine Spilage…Do we want this?



Hence Alternatives

- Alternatives to Nuclear are an Energy Mix of 5: Solar, Wind, Hydro, Bio Mass and bio Gas and Geothermal in the Northern parts rich with Hotsprings.
- **WHY?** Energy Democracy & Independence ,Debt Avoidance, Environmental Protection, Job Creation etc.
- **FOCUS**: Solar projects, Licenses for Renewables ;Public Private Partnerships

- The Role of CSOs in strengthening communities and closing knowledge gaps.
- Representing these communities at tough converstaions and engaging with Institutions for Policy and Actual Change

THE END.