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Your Ref: NA/DCC/EF&M/2025/027

Chairperson

Departmental Committee on Environment and

Natural Resources

National Assembly, Bunge Towers

**NAIROBI**

cna@parliament.go.ke

Dear Sir,

**RE: CONCERNS AND RECOMMENDATIONS REGARDING THE NUCLEAR ENERGY PROPOSAL IN KENYA**

We refer to the above matter and your letter referenced NA/DCC/EF&M/2025/027 dated 6th May 2025.

We are pleased to submit our written memorandum regarding the ongoing discussions on the proposed adoption of nuclear energy in Kenya. As an organization committed to environmental sustainability, human rights, and climate justice, we believe that any decision on the country’s future energy pathways must centre the principles of energy justice,ensuring fairness, transparency, meaningful public participation, and long-term sustainability.

Our submission outlines key concerns and recommendations regarding the nuclear energy proposal, with particular attention to its implications for distributional, procedural, and recognition justice. We respectfully urge the Committee to consider these perspectives in your deliberations and decision-making.

We remain available to engage further with the Committee and support ongoing efforts to advance Kenya’s energy agenda in a manner that is just, inclusive, and aligned with the Constitution and international commitments.

We thank you for your leadership and for the opportunity to contribute to this critical conversation.

Yours Faithfully,



Elizabeth Kariuki

Hub Director, Natural Justice East Africa

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**WRITTEN SUBMISSION TO THE PARLIAMENTARY COMMITTEE ON ENVIRONMENT, FORESTRY AND CLIMATE CHANGE ON THE REVIEW OF THE PROPOSED NUCLEAR ENERGY POWER PLANT PLANS IN UYOMBO**

# **1.** **Introduction**

We appreciate the opportunity to provide this submission on the nuclear energy proposal currently under consideration. As a civil society organization committed to environmental, social, climate justice, and just energy transitions we are deeply concerned about the implications of introducing nuclear energy in Kenya. Our submission focuses on the need to evaluate this proposal through the lens of energy justice to ensure that Kenya’s energy future is inclusive, sustainable, and equitable.

# **2.** **Energy Justice in the Context of Kenya’s Energy Future**

Energy justice refers to a fair and inclusive energy system, one that ensures the equitable distribution of the benefits and burdens of energy production and use, while also enabling transparent, inclusive, and impartial decision-making processes. It values energy projects throughout their full life cycle and is rooted in environmental and climate justice traditions. The concept of energy justice is commonly understood through three interconnected pillars: distributive, recognition, and procedural and restorative justice.[[1]](#footnote-1)

Distributive justice concerns itself with who will benefit and who will be burdened, both now and in the future. It calls for the benefits and burdens to be equally distributed amongst all, considering factors of gender, class, disability and inequality. Recognition justice emphasizes the importance of acknowledging and respecting all communities, especially marginalized or historically excluded groups, in energy decisions. It asks: whose voices are heard, and whose interests are recognized in shaping our energy future? Procedural justice on the other hand focuses on how decisions are made. It calls for equitable access to information, participation in decision-making processes, and access to mechanisms for redress and accountability with people being at the centre of decision making, especially communities, the most impacted, the poor, women, people with disabilities and the youth. Restorative justice speaks to considering the harms of the past and addressing this through acknowledging health and environmental impacts caused by climate change, and equitable access to natural resources.[[2]](#footnote-2)

Taken together, these principles offer a framework to assess whether an energy project, such as the proposed development of nuclear energy in Kenya, advances fairness, inclusion, and sustainability, or risks deepening existing inequalities. In our submission, we apply this framework to highlight why the nuclear energy proposal warrants deeper scrutiny, meaningful public participation, and careful consideration of the potential social, environmental and economic impacts, particularly considering alternatives which are most cost effective and have less negative impacts.

# **3.** **Key Concerns on Kenya's Nuclear Energy Programme**

## **3.1** **Lack of Access to Information and Public Participation**

### ***The Law on Environmental Governance (Access to Information, Public Participation and Access to Justice)***

Kenya’s legal framework strongly upholds the public’s right to access information and participate in decision-making, particularly on environmental and public health matters. The Constitution of Kenya, 2010 guarantees the right to a clean and healthy environment (Article 42) and mandates public participation in environmental governance (Article 69). Public participation is enshrined as a national value under Article 10(2) of the Constitution, requiring that citizens be involved in all decision-making processes, particularly those with significant environmental and social impact, and the right to information protected under Article 35, supported and operationalised by the Access to Information Act, 2016, which obligates state agencies to proactively disclose important information.

In the context of Kenya’s proposed nuclear power programme, procedural justice is a vital component of energy justice and must be meaningfully upheld. Procedural justice emphasizes fairness in the processes through which energy decisions are made, ensuring that all affected communities, especially those near proposed sites like Uyombo in Kilifi County, have equitable access to information, opportunities to participate in decision-making, and access to avenues for accountability and redress. In this case, important information would include, the reasons and analysis of the chosen site, waste disposal and how this would be done, decommissioning of the nuclear power plant, which alternative energy sources have been considered, the environmental; economic and social impacts, and addressing comments from public participation.

Public participation is a cornerstone of environmental governance. It is not a procedural checkbox, but rather, a governance principle rooted in self-determination and dignity. The Environmental Management and Co-ordination Act (EMCA) and its regulations, require public or community involvement through Strategic Environmental Assessments (SEAs) and Environmental Impact Assessments (EIAs), with specific provisions for public engagement. Internationally, these obligations are recognised in Principle 10 of the Rio Declaration, which also emphasize the public's right to environmental information and participation in environmental decisions.

The *Save Lamu v. National Environment Management Authority (NEMA) & 2 others [2019][[3]](#footnote-3)* case provides a landmark precedent. The Environment and Land Court ruled that public participation must be meaningful, inclusive, and conducted in a manner that communities can fully engage with and influence outcomes. The court found that failure to meaningfully consult the public violated both constitutional and environmental rights. Similarly, the recent judgment in *Menengai West Stakeholders Forum & 10 others v National Environmental Management Authority & another* (Environment and Land Appeal E001 of 2024) [2025] KEELC 1169 (KLR) (13 March 2025) provides critical jurisprudence on the matter. In this case, the Environment and Land Court set aside the Environmental Impact Assessment (EIA) licence granted to Sosian Energy Limited for geothermal exploration in the Menengai area, citing inadequate public participation. The Court emphasized that public participation must be meaningful, inclusive, and conducted in good faith, stating:

"*There was a lapse in mandatory procedure for meaningful public participation. A project of such magnitude must address the concerns and potential risks and mitigation to the project affected people*".

During the development of the SESA report, public consultations with communities were limited, and communities were considered as “low interest” stakeholders. However, nuclear power facilities have real adverse impacts on the natural and social environment. The purpose of public consultation is to ensure that aspects relating to heritage, culture and biodiversity are identified. As this was not done, harms to these have not been identified. Governments should pay greater attention to the various violations of rights that occur during any project – and then voices of communities must be valued at every level of decision-making.

For procedural justice to be realized, public engagement must go beyond box-ticking exercises. It must start early, be continuous and be conducted with integrity. Further, it should be inclusive, transparent, and genuinely responsive to community concerns. This means providing clear, accessible information in languages and formats that people understand, giving adequate notice for consultations, and meaningfully incorporating local feedback into final decisions. Additionally, local communities should be provided with independent legal and technical advice to ensure their participation is informed, meaningful and equitable.

Stakeholder mapping and public participation should be carried out through a transparent and accountable process. This should be well-documented, inclusive of all relevant actors, and structured to improve decision-making by reflecting diverse community perspectives and priorities

### ***Concerns on the Site Selection Process for Kenya’s Proposed Nuclear Power Plant***

The siting of a nuclear power plant is an especially sensitive and high-stakes process, requiring transparency, accountability, and public engagement to ensure legitimacy and foster public trust. A Strategic Environmental and Social Assessment (SESA) plays a critical role in facilitating this process by offering the public clear, evidence-based information that justifies site selection. The International Atomic Energy Agency (IAEA) provides guidance on the appropriate steps for siting nuclear installations, including regional analysis, screening, and evaluation, comparison and ranking.[[4]](#footnote-4)

In the case of Kenya, Uyombo Village in Matsangoni Ward, Kilifi County, has been identified by the Nuclear Power and Energy Agency (NuPEA) as the most suitable location for the proposed nuclear power plant. Chapter 3 of the SESA report outlines the process undertaken: an initial regional analysis identified 29 potential sites, which were then screened down to 13 candidate sites, and finally ranked to select 2 preferred sites.[[5]](#footnote-5)

While the country’s efforts to diversify its energy mix are recognized, there are serious concerns about the adequacy of information provided in the SESA report. At each stage of the selection process, the SESA fails to offer sufficient baseline data on critical economic, social, health, and environmental factors. Notably, it fails to assess how various climate change scenarios could affect the proposed nuclear facility and associated infrastructure over its lifespan. Moreover, the report does not present a clear and comparative analysis of how the different sites were evaluated and ranked, making it nearly impossible for the public or oversight bodies to assess the soundness of selecting Uyombo as the most viable location. Although the SESA references the use of datasets and maps related to Kenya’s geology, seismology, tectonics, soils, vegetation, hydrology, demographics, transport infrastructure, electric grid network, socio-economic features (such as tourist sites and national parks), environmental assets (including RAMSAR sites and wetlands), and security considerations, these materials are not adequately disclosed. Only six maps are included in the report, none of which correspond to the comprehensive geographic information system (GIS) described, undermining the credibility and transparency of the site selection process.

Additionally, the SESA does not demonstrate how existing county development and spatial plans were considered or aligned with the proposed project. This lack of integration undermines the principles of coordinated and inclusive planning, as required under Kenya’s laws and policies on sustainable development and public participation.

In light of these gaps, we call for a more rigorous, transparent, and participatory site selection process that upholds the public’s right to information and safeguards community interests.

## **3.2** **Nuclear Energy poses Environmental and Health Risks**

### ***Kenya’s Inadequate Legal and Policy Framework for Nuclear Energy***

Kenya’s current legal and policy framework is not sufficiently equipped to handle the complex environmental, health, and safety risks posed by nuclear energy. While some foundational provisions exist, they fall short of the standards required to support the safe development, regulation, and management of nuclear power.

The Constitution of Kenya in Article 42 guarantees the right to a clean and healthy environment. Specifically, this right includes the right to have the environment protected for the benefit of present and future generations. Further, Article 62, places obligation to the state to establish systems for EIAs and eliminate the process and activities that are likely to endanger the environment. This right to a clean and health environment is further emphasized in EMCA Act 18 of 1999, which outlines procedures for environmental governance, including the requirement for impact assessments. Kenya does not currently have nuclear-specific environmental regulations or enforcement capacity to manage the unique hazards associated with radioactive materials.

Crucially, Kenya has not ratified or acceded to major international treaties that govern nuclear safety, emergency preparedness, and liability. These include: the Vienna Convention on Civil Liability for Nuclear Damage which provides a framework for liability and compensation in the event of a nuclear incident. It also not a party to the Convention on Nuclear Safety, Convention on Early Notification of a Nuclear Accident, Convention on Assistance in the case of a Nuclear or Radiological Emergency and the Joint Convention on the Safety of Spent Fuel Management and of the Safety of Radioactive Material. These agreements are designed to ensure accountability, emergency response, and compensation mechanisms in case of nuclear accidents. Without these, Kenya cannot assure its citizens that they would be protected or compensated in the event of a nuclear disaster.

Although Kenya has signed to the Sendai Framework of Disaster Risk Reduction 2015-2030, there is a complete absence of a legislative and regulatory framework for disaster risk management in Kenya.

Kenya’s approach to disaster management has historically been reactive, often following major catastrophes. For instance, in 1997-1998, Kenya experienced El Nino floods leading to thousands of losses of lives and property. The same year, 1998 the US Embassy bombing leading to hundreds of lives lost. It was only after these two major events that Kenya established the National Disaster Operations Centre (NDOC) to oversee monitoring, coordination, resource mobilization and response to emergency and disasters. Over the years Kenya has had significant environmental disasters that have gone unaddressed. Despite early warning systems and data, perennial floods and drought continue to lead to massive life loss and destruction. The 2018 Solai Dam tragedy highlighted regulatory failure and lack of accountability, while the 2024 Supreme Court of Kenya judgement, which upheld compensation for the lead poising of Owino-Uhuru residents and children, demonstrated the long-term consequences of environmental neglect.

Most recently, the devastating floods of 2024 laid bare Kenya’s chronic unpreparedness for disasters, exposing glaring gaps in early warning systems, emergency response, infrastructure resilience, and coordination among agencies. Lives were lost, families displaced, and essential services crippled. A nuclear incident, even a minor one, would demand rapid, coordinated, and technically sophisticated emergency measures, capacities Kenya has not yet demonstrated. Proceeding with nuclear energy development without addressing these systemic weaknesses is potentially disastrous.

### ***Nuclear Risks and Accidents***

Nuclear accidents have the potential to cause catastrophic and long-lasting harm as demonstrated by the disasters in Chernobyl (1986) and Fukushima (2011). These incidents revealed the immense environmental destruction and severe public health consequences that can result from nuclear power plant accident.[[6]](#footnote-6) As Kenya considers establishing its first nuclear facility, the long-term risks to both the environment and the people must be treated with utmost seriousness and caution. In a joint report by the IAEA, the World Health Organization (WHO) and the United Nations (UN) revealed the true scale of impact of the Chernobl disaster indicating that an estimated 5 million people currently live in areas of Belarus, Russia and Ukraine that are contaminated with radionuclides due to the accident; about 100,000 of them live in areas classified in the past by government authorities as areas of “strict control.”[[7]](#footnote-7)

The radioactive contamination from such accidents persists across generations, affecting ecosystems, public health, and livelihoods.

### ***Safety Assessments, and Longterm Waste Management Strategies***

One of the most critical and enduring challenges of nuclear energy is the generation of radioactive waste, a burden that humanity is still grappling with after over six decades of nuclear development.[[8]](#footnote-8)

Nuclear waste is produced at all stages of nuclear energy cycle. Waste is created from the mining of uranium to the reactor, the spent fuel from the reactor and its storage and reprocessing of spent nuclear fuel.[[9]](#footnote-9)

Despite being at the forefront of nuclear energy development, countries with advanced infrastructure still struggle with safe, long-term disposal of nuclear waste. For example, in France, there is currently no credible solution for long term safe disposal of nuclear waste, instead the immediate focus remains reducing risks from existing stockpiles. similarly, in the United Kingdom, multiple official bodies have warned that the Sellafield site poses a “significant risk to people and the environment” and that there is an “…extraordinary accumulation of hazardous waste, much of it stored in outdated nuclear facilities”. In South Africa (the only African country with an operational nuclear power plant),[[10]](#footnote-10) there has been concerns on the waste disposal, especially in respect continuing the life of the nuclear power plant.[[11]](#footnote-11) This includes concerns over leakages of nuclear waste[[12]](#footnote-12) and lack of a permanent solution to the existing 40 years’ worth of waste.[[13]](#footnote-13) These examples make it clear that even nations with substantial resources and experience are still unable to guarantee full containment or neutralization of nuclear waste.

Scientific evidence has shown that although rigorous and robust measures can be taken to regulate the use, possession, production, storage, enrichment, processing, reprocessing, or disposal of radioactive material, this can never be sufficiently regulated, or its contamination risks completely avoided through regulation[[14]](#footnote-14)

Since uranium is a known carcinogen for humans, there is no truly safe level of exposure to it. Nuclear power is often framed as a clean alternative to fossil fuels. However, when things go wrong, as seen in Chernobyl and Fukushima, the consequences are catastrophic and long-lasting. Earthquakes, equipment failures, or human error can lead to permanent environmental and health damage.

Scientific research has concluded that taking into account the whole nuclear lifecycle, nuclear energy cannot be considered a safe alternative to phase out fossil fuels.

Sections 2.3.8 and 6.2.2 of SESA acknowledge that the operation of a nuclear power reactor generates three types of radioactive waste: high-level, intermediate-level, and low-level waste. High-level waste (HLW), including spent fuel or reprocessing residues, is highly radioactive and generates significant decay heat.[[15]](#footnote-15) As such, it requires specialized handling, cooling, and shielding. Standard practice, as outlined in nuclear safety regulations and the IAEA guidelines, involves storing spent fuel in cooling ponds at the reactor site to allow heat and radioactivity to decay to manageable levels before any further treatment or disposal.

Spent fuel contains a mix of depleted uranium, dangerous radioactive elements like plutonium, and other by-products from the nuclear reaction. Managing this waste safely is a long-term challenge. According to international guidelines from the IAEA, countries must have clear and safe strategies for handling, storing, and eventually disposing of radioactive waste.

While the SESA acknowledges the generation of radioactive waste, it does not provide detailed safety assessments or publicly accessible plans for long-term waste management, as recommended by IAEA safety standards.[[16]](#footnote-16) This lack of transparency raises serious concerns about how Kenya intends to address critical issues such as interim storage, transport risks, final disposal options, site selection for waste facilities, and institutional capacity for long-term monitoring and safety oversight.

### ***Nuclear Power Programme Strategic Environmental Assessment***

Although a SESA for the nuclear power programme in Kenya has been undertaken, the report contains gaps in its assessment. For instance, the report fails to assess and document the effects of climate change (for different climate change scenarios) on the nuclear power project during its lifetime and related infrastructure. Chapter 2.5.6 and 6.3.2 provide brief descriptions on radioactive waste, but information on management of this waste, or an assessment of the options to do so, is not presented. In fact, Table 8-2 on mitigation of high-level environmental impacts only recommends the development of a nuclear waste management plan as a mitigation measure for health and safety.

## **3.3** **Energy Alternatives**

Kenya is considered a renewable energy leader in Africa with over 90% of its energy generated from clean sources. Over 40.5% of the energy produced comes from geothermal energy while hydroelectric accounts for 27.4%, wind energy 16.8%, solar 2.5% and finally imported energy standing at 3%.[[17]](#footnote-17)

Of interest to note is that the country, in its National Adaptation Plan 2015-2030 has set a target of generating 100% of its energy from clean energy sources by 2030. Though ambitious, this target is not off as almost 90 percent of electricity is generated from renewable sources as highlighted above. These statistics coupled with an in-depth look at Kenya’s climate goals and plans as set out in the different policy documents indicate that Kenya’s energy transition can be met through safer, cheaper and more sustainable alternatives to nuclear power as shall be illustrates below.

### ***Policy Underpinnings***

Kenya, in its adaptation goal set out in its Nationally Determined Contributions as updated in 2020, seeks to reduce carbon emission by 32% by 2030 relative to the Business-as-Usual scenario of 143mt CO2. To achieve this goal, the National Climate Change Adaptation Plan III 2023-2027, identifies the energy sector as a driver of change and through it wants to take action focusing on increasing renewable energy in the electricity grid, enhancing energy and resource efficiency across different sectors, adoption of clean energy to reduce over reliance on fossil fuel.

The National Action Plan 2015-2030, too, further buttresses the position of energy being a priority area in climate change mitigation. All policy documents identify geothermal energy as a key driver for energy transition.

### ***Why geothermal and/or wind and solar?***

According to the Energy and Petroleum Regulatory Authority (EPRA), it is estimated that there is about 7000 to 10 000 megawatts (thermal) untapped geothermal energy beneath the Rift Valley region across different fourteen prospective sites. This capacity is nearly five times the country’s current peak electricity demand*.*

Furthermore, while the cost of geothermal production is high across the globe, Kenya’s geothermal is incredibly cost-effective. On average, engineers around the world need to drill down about 3,000 to 4,000 meters to make a geothermal well, but some wells in Kenya are only 900 meters deep.[[18]](#footnote-18)

Secondly, Kenya’s wind and solar power remain largely untapped. Just recently, the country launched Africa’s largest wind power [Lake Turkana Wind Power](https://ltwp.co.ke/) plant which already contributes to 310 MW to the national grid. Beyond just the plains of Marsabit, Kenya can harness wind both offshore and onshore in its quest for achieving a just energy transition.

Solar energy remains to be one of the most readily available sources of energy that can be tapped and harnessed offering a solution for off grid connection in remote areas.

### ***Why choose a different alternative?***

The exploitation of nuclear energy is unsustainable considering the potential risks posed by this form of energy. Important to note, while nuclear energy is categorised low carbon source of electricity, it is not renewable. This is because the component used in nuclear fission, uranium, is a finite resource that cannot be naturally replenished on a human timescale, unlike solar or wind energy, which are continuously available. Fair to say, other renewable sources are in line with Kenya’s goals and ambitions as set out in the National Adaptation Plans, Climate Change Action Plans and the Nationally Determined Contributions.

Considering the above, putting money into nuclear energy would take resources away from renewable energy sources that are abundant, sustainable, and proven. It is more prudent, climate-aligned, and economically sound to double down on renewables rather than introducing complicated and potentially dangerous technologies at a time when the nation is already surpassing international benchmarks in clean energy adoption.

## **3.4** **Economic Costs of Nuclear Power in Kenya**

As of 2025, Kenya’s public debt has surpassed Kshs 10 trillion, which is equivalent to 65.7% of our GDP.[[19]](#footnote-19) This has triggered widespread concern among economic experts, civil society and development partners. The [Public Finance Management Act](https://new.kenyalaw.org/akn/ke/act/2012/18/eng%402024-04-26), 2012, read together with Article 201(c) of the [Constitution of Kenya,](https://new.kenyalaw.org/akn/ke/act/2010/constitution/eng%402010-09-03#chp_Two__sec_10) obligates the Government to ensure prudent and responsible use of public funds, and sustainable borrowing. This underscores the principle of intergenerational equity, which requires that present development and financial decisions do not compromise the welfare and opportunities of future generations.

The development of nuclear power infrastructure involves immense financial costs that pose serious risks for Kenya’s already constrained public finances. Estimates suggest that a single nuclear power plant can cost over [USD 5 billion](https://theconversation.com/4-east-african-countries-are-going-for-nuclear-power-why-this-is-a-bad-idea-218046) (approximately Kshs 650 billion), excluding the ancillary costs of regulatory development, waste management, emergency systems, and eventual decommissioning. The costs of waste disposal are so high that “No country has allotted enough funds to cover nuclear waste disposal. In France and the US, according to the recently published World Nuclear Waste Report, the funding allocation only covers a third of the estimated costs.”[[20]](#footnote-20) These costs are likely to be transferred to consumers through increased tariffs, burdening already low-income households and small enterprises and potentially deepening energy poverty.

### ***International Comparisons and Risks***

Nuclear power’s capital-intensive nature demands substantial upfront investments often in the tens of billions of dollars. The experience of other countries, within the continent and globally, demonstrates these concerns, with the IAEA also noting that nuclear power projects frequently exceed initial cost estimates and face prolonged delays, ultimately straining national budgets.

* Egypt's El Dabaa Nuclear Power Plant is projected to cost approximately $28.75 billion. To finance it, Egypt needed a [25 Billion loan from Russia which is equivalent to 6% of its GDP](https://www.nuclearbusiness-platform.com/media/insights/africa-nuclear-dream).
* Hinkley Point C nuclear plant in the UK, began construction in December 2018 with a targeted completion date of 2025. Its commissioning has been scheduled to 2030 with costs escalating from 26 billion to between GBP 31 billion to GBP 34 billion;
* Similar delays and overruns are evident in nuclear plants, for instance in Brazil's Angra-3, India’s PFBR, Kakrapar-4, Rajasthan-7 & 8, Japan’s Shimane-3, and France’s Flamanville-3, many which have been under construction for a decade or more in accordance with the [World Nuclear Industry Status Report](https://www.worldnuclearreport.org/Power-Play-The-Economics-Of-Nuclear-Vs-Renewables).

Such dependency on foreign financing raises concerns about economic sovereignty. For Kenya, which is already grappling with a high debt to GDP ratio, pursuing a financed nuclear project would be fiscally unsound shifting the financial environmental and safety risks to future generations who will bear the long-term costs of repayment and waste management.

### ***Waste Management and Decommissioning***

Beyond construction costs, nuclear waste management presents a long-term financial liability. The [U.S. Nuclear Regulatory Commission](https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/decommissioning.html) estimates the cost of decommissioning ranges between $300 million to $400 million, while the UK government projects around £117 billion (USD 150 billion) for cleaning up nuclear sites. These figures contrast sharply with renewables, which do not carry such long-term waste liabilities.

### ***Disaster Risks/ Liability and Associated Clean-Up Costs***

The potential for catastrophic nuclear accidents also carries economic consequences. Following the Fukushima Daiichi disaster, it has been reported that Japan’s Ministry of Economy, Trade and Industry estimated [cleanup and remediation](https://mainichi.jp/english/articles/20161209/p2a/00m/0na/009000c) would cost [¥21.5 trillion](https://www.khl.com/news/cost-of-fukushima-nuclear-disaster-rises-to-%24-188-bn/1123699.article) (USD 188 billion / approx. KES 24.7 trillion), almost double the original estimate. Kenya's fiscal reality simply cannot afford to absorb such a financial or environmental risk.

This concern is compounded by the absence of a comprehensive legal and institutional framework for disaster risk management. While Kenya has a [Disaster Risk Management policy](https://wrd.unwomen.org/sites/default/files/2023-02/NATIONAL_Disaster_Risk_Mannagement_POLICY_kenya.pdf), it lacks a corresponding legislative and regulatory framework necessary to ensure effective mitigation, preparedness, and response to disasters. The existing plan falls short of providing the detailed and enforceable measures needed to manage the risks associated with a complex and high-stakes technology like nuclear energy. In the event of a nuclear accident, the consequences would be far-reaching and devastating, especially in a context where the systems for managing such crises are inadequate.

### ***Nuclear Energy vis a vis Renewable Energy***

The opportunity cost of pursuing nuclear energy is substantial. Kenya has significant untapped potential in renewable energy, particularly in solar, wind, and geothermal, which offer faster deployment, lower costs, and minimal environment and economic risks. We hold [10,000 MW](https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems) of geothermal potential, of which, only 950 MW has been developed; Wind potential of [3,000 MW](https://www.trade.gov/country-commercial-guides/kenya-energy-electrical-power-systems), with less than 500 MW exploited; and solar potential of [15,000 MW](https://kippra.or.ke/promoting-the-use-of-solar-energy-in-the-manufacturing-sector-in-kenya/#:~:text=The%20country%20has%20an%20estimated,installation%20of%2055%20MW%20capacity.) with high irradiance levels. By investing in renewables, Kenya could rapidly expand clean energy access and create green jobs. These options are not only more financially viable but also align with Kenya’s international climate commitments and just energy transition goals. In fact, the SESA by comparing the costs and impacts of fossil fuel energy in relation to nuclear energy, nuclear may be seen as a better option. However, should the same economic and power supply feasibility be done with clean, renewable energy such as wind and solar, nuclear energy is expensive and cannot compete. While governments must consider the best economic option for improving energy access, they must not fail to identify hidden environmental and social costs, which in the case of nuclear, could be significant.

Kenya has also committed to a just energy transition. An energy transition is just if it is affordable, meaning that it is within relatively easy reach of the end users, and available, meaning that the supply of energy is adequate and reliable.[[21]](#footnote-21) Nuclear power plants in countries like France have been proven as unreliable in providing power when needed.[[22]](#footnote-22) Future climatic conditions, such as heatwaves, droughts, flooding and rising sea-levels only increase the likelihood of future nuclear power plant disconnections and pose further security risks.

A rapid and just energy transition relies on deploying readily available technologies that can be implemented quickly and affordably, such as solar, wind, and energy efficiency measures. Nuclear power, on the other hand, is too slow and costly to contribute meaningfully to Kenya’s climate goals. Nuclear plants typically take 15-20 years for construction, hence failing to address immediate decarbonisation needs to 2030.[[23]](#footnote-23) Nuclear energy is also far from affordable, with Greenpeace France demonstrating that by investing 52 billion euros in a mix of onshore wind infrastructure/photovoltaic panels on large roofs, it would be possible to avoid four times more CO2 emissions than by investing the same amount in the construction of six nuclear reactors by 2050.[[24]](#footnote-24)

In light of Kenya’s precarious fiscal position, high debt burden, and underdeveloped disaster risk management framework, pursuing nuclear power presents significant and unjustifiable economic, environmental, and social risks. The long lead times, high capital costs, dependency on foreign financing, and potential for catastrophic accidents make nuclear energy an unsuitable and fiscally irresponsible path for Kenya’s energy future. Instead, Kenya should leverage its abundant renewable resources, solar, wind, and geothermal, which offer faster deployment, lower costs, fewer risks, and greater alignment with climate goals and the principles of a just energy transition.

**3.5** **Conclusion and Recommendations**

While nuclear energy is often presented as a viable solution to our energy needs, the risks far outweigh the benefits, especially when more affordable, safer, and faster alternatives like solar, wind, and geothermal are readily available and are more consistent with Kenya’s climate goals, economic realities, and community needs.

Kenya is currently unprepared: legally, institutionally, financially, or socially, to take on the long-term risks of nuclear energy. Establishing a nuclear power plant in Uyombo, or anywhere in the country, without first building robust safeguards and public accountability mechanisms, would pose unacceptable threats to public safety, environmental integrity, and intergenerational justice.

We therefore make the following clear and urgent recommendations:

1. Immediately suspend all plans for the proposed nuclear power plant in Uyombo until comprehensive, transparent, and inclusive public consultations are conducted in full compliance with constitutional and statutory requirements.
2. Conduct an independent, multidisciplinary assessment of Kenya’s institutional, technical, financial, and regulatory preparedness to manage nuclear energy, including long-term waste disposal and disaster response capabilities.
3. Prioritize investment in renewable energy pathways, particularly solar, wind, and geothermal, that are more aligned with Kenya’s existing strengths, climate commitments, and the urgent need for affordable and resilient energy access.
4. Suspend the prioritization of nuclear energy as a national strategy in light of Kenya’s current high debt burden, limited fiscal space, and the unresolved global challenges of nuclear waste and risk management. We urge the application of rigorous economic scrutiny to all proposed energy investments and call for the prioritization of energy options that deliver justice, affordability, and long-term resilience for all Kenyans.
5. Ensure all future energy planning processes are guided by principles of environmental justice, intergenerational equity, and the constitutional rights to participation, transparency, and sustainable development.
6. Establish and enforce clear legal safeguards to guarantee free, prior, and informed consent (FPIC), access to information, and the ability for communities to challenge regulatory decisions that affect their environment, livelihoods, and health.

We urge the Parliamentary Departmental Committee on Environment and Natural Resources to exercise its oversight mandate to ensure these recommendations are implemented across the relevant institutions and that the rights, safety, and voices of the Uyombo community are upheld. Further, in this pivotal moment, we urge Parliament and relevant government agencies to act with foresight and integrity. The future of Kenya’s energy sector must be safe, inclusive, and grounded in the realities of our people and planet, not driven by risky technologies that jeopardise both.

# **4.** **Annexures**

1. K Jenkins. *et al* “Energy justice: A conceptual review” (2016) *Energy Research and Social Science* 11 174–182. [↑](#footnote-ref-1)
2. E Githinji, 'Demystifying Energy Justice' (January 31, 2022) available at <[https://cleanenergy4africa.org/demystifying-energy-justice/>](https://cleanenergy4africa.org/demystifying-energy-justice/%3E) accessed on 16.05.2025. [↑](#footnote-ref-2)
3. [Save Lamu & 5 others v National Environmental Management Authority (NEMA) & another [2019] KENET 98 (KLR) - Kenya Law](https://new.kenyalaw.org/akn/ke/judgment/kenet/2019/98/eng%402019-06-26) [↑](#footnote-ref-3)
4. IAEA *Site Survey and Sight Selection for Nuclear Installations* (2015) p. 11-13available at <https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1690Web-41934783.pdf>. [↑](#footnote-ref-4)
5. SGS *Strategic Environmental Assessment for the Kenya's Nuclear Programme* (September 2024) p. 50-54. [↑](#footnote-ref-5)
6. A historical review of nuclear energy production reveals numerous accidents across several countries. These include early incidents such as the Chalk River partial meltdown in Canada (1952), the Windscale fire in the UK (1957), and the Kyshtym disaster in Russia (1957–58). The 1979 partial meltdown at Three Mile Island in the US and the catastrophic explosion at Chernobyl in Ukraine (1986) remain some of the most well-documented. Japan has also faced serious safety breaches, notably at Tokaimura in 1999. These events collectively underscore the enduring safety risks associated with nuclear energy. Read more <https://koebergalert.org/accidents-and-safety/>. [↑](#footnote-ref-6)
7. International Atomic Energy Agency, Vienna (Austria), World Health Organization, Geneva (Switzerland), & United Nations Development Programme, New York, NY (United States). (2005). Chernobyl: The true scale of the accident. 20 years later a UN report provides definitive answers and ways to repair lives. [↑](#footnote-ref-7)
8. Greenpeace, The Global Crisis of Nuclear Waste < <https://www.greenpeace.org/static/planet4-belgium-stateless/2019/03/f7da075b-18.11.gp-report-global-crisis-of-nuclear-waste.pdf> > accessed 14th May 2025 [↑](#footnote-ref-8)
9. Peter Roche et al. “The Global Crisis of Nuclear Waste” Greenpeace Finance (January 2019) available at https://cdn.greenpeace.fr/site/uploads/2019/01/REPORT\_NUCLEAR\_WASTE\_CRISIS\_ENG\_BD2.pdf?\_ga=2.4138613.494648163.1695930588-1256065049.1695930587 (accessed on 15 May 2025) 7 [↑](#footnote-ref-9)
10. Hogan Lovells, Energy Buzz: the Nuclear Option – African states phase nuclear power into their energy strategies < <https://www.hoganlovells.com/en/publications/energy-buzz-the-nuclear-option-african-states-phase-nuclear-power-into-their-energy-strategies> > accessed on 16th May 2025. [↑](#footnote-ref-10)
11. SAFCEI, Fatally flawed, plans to extend the lifespan of Koeberg Nuclear Power Plant for another 20 years < <https://safcei.org/fatally-flawed-plans-to-extend-the-lifespan-of-koeberg-nuclear-power-plant-by-another-20-years/> > accessed on 16th May 2025. [↑](#footnote-ref-11)
12. IOL, Gordhan confirms radioactive waste leakage at Koeberg < <https://iol.co.za/news/politics/2019-04-01-gordhan-confirms-radioactive-waste-leakages-at-koeberg/> > accessed on 16th May 2025. [↑](#footnote-ref-12)
13. Engineering News NNR hosts new round of talks with public over Koeberg’s life extensions < <https://www.engineeringnews.co.za/article/nnr-hosts-new-round-of-talks-with-public-over-koebergs-life-extension-2024-06-04> > accessed on 16th May 2025; Earthlife, Sustainable Energy Briefing 20: Nuclear Energy – the powerlessness of power < <https://earthlife.org.za/wp-content/uploads/2020/06/Final_Sustainable_Energy_Briefing-20_nuclear-power_sept2010.pdf> > accessed on 16th May 2025. Engineering News NNR hosts new round of talks with public over Koeberg’s life extensions < <https://www.engineeringnews.co.za/article/nnr-hosts-new-round-of-talks-with-public-over-koebergs-life-extension-2024-06-04> > accessed on 16th May 2025; Earthlife, Sustainable Energy Briefing 20: Nuclear Energy – the powerlessness of power < <https://earthlife.org.za/wp-content/uploads/2020/06/Final_Sustainable_Energy_Briefing-20_nuclear-power_sept2010.pdf> > accessed on 16th May 2025 9. [↑](#footnote-ref-13)
14. Dean Kyne and Bob Boblin “Emerging environmental Justice Issues in Nuclear Power and Radioactive

Contamination” 2016 Int J Environ Res Public Health 700 available at

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4962241/#B3-ijerph-13-00700 [↑](#footnote-ref-14)
15. *Strategic Environmental Assessment for the Kenya's Nuclear Programme* (September 2024) p. 115-116. [↑](#footnote-ref-15)
16. International Atomic Energy Agency (IAEA), *Predisposal Management of Radioactive Waste: General Safety Requirements*, IAEA Safety Standards Series No. GSR Part 5, Vienna, 2009; and *Disposal of Radioactive Waste: Specific Safety Requirements*, IAEA Safety Standards Series No. SSR-5, Vienna, 2011. [↑](#footnote-ref-16)
17. ‘Kenya’s Ambitious Plan to Become a Clean Tech Hub’ (*Cleanearth Africa*11 June 2024) <<https://cleanearth.africa/trending/kenyas-ambitious-plan-to-become-a-clean-tech-hub/>> accessed 15 May 2025. [↑](#footnote-ref-17)
18. Will Brown, ‘Kenya Taps the Earth’s Heat’ (*IMF,* December 2022) <<https://www.imf.org/en/Publications/fandd/issues/2022/12/country-case-kenya-taps-the-earth-heat>> accessed 15 May 2025. [↑](#footnote-ref-18)
19. House Greenlights 2025 Debt Strategy, Demands Fiscal, Accountability Automation in Debt Management| The Kenyan Parliament Website. [↑](#footnote-ref-19)
20. Christine Ro “The Staggering Timescales of Nuclear Waste Disposal” Forbes (26 November 2019) < <https://www.forbes.com/sites/christinero/2019/11/26/the-staggering-timescales-of-nuclear-waste-disposal/?sh=5732a07c29cf> > accessed on 16 May 2025). [↑](#footnote-ref-20)
21. ‘Just Energy Transitions as a Development Priority for Africa | United Nations Development Programme’ [↑](#footnote-ref-21)
22. Nuclear power’s financial problems exposed in new report - Greenpeace European Unit

Myth buster: Nuclear energy is a dangerous distraction - CAN Europe [↑](#footnote-ref-22)
23. https://caneurope.org/myth-buster-nuclear-energy/ [↑](#footnote-ref-23)
24. https://cdn.greenpeace.fr/site/uploads/2023/10/Report-English-version.pdf [↑](#footnote-ref-24)