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Monitoring Frameworks: Policy Synergies Between Kenya's Geothermal Development and CTBT Frameworks

Integration of sustainable energy practices and nuclear monitoring policies offers a pathway for addressing regional disparities in technology access, scientific participation and policy development. Kenya's advancements in geothermal energy in atmospheric and subsurface monitoring provides a model for aligning sustainable energy initiatives with the Comprehensive Nuclear-Test-Ban Treaty (CTBT) framework, promoting alignment driven policy development promoting dual-use monitoring technologies, harmonized standards and equitability in global decision-making. The study explores policy gaps between sustainable energy monitoring and CTBT frameworks, highlighting opportunities for developing nations to contribute meaningfully to global security efforts. It proposes actionable policy recommendations enhancing synergies between geothermal practices and CTBT's OSI, IMS and IDC operations. Recommendations include capacity-building programs for young scientists, policies for regional representation in CTBT science and technology, and frameworks for integrating sustainable energy data into nuclear monitoring systems. In addressing barriers, such as limited access to advanced technologies and insufficient interdisciplinary expertise, the study intends to emphasize the critical role of inclusive, regionally empowered policies. It advocates for creating a roadmap for sustainable development that supports both energy and disarmament objectives. The findings provide a foundation for fostering regional collaboration, advancing global CTBT compliance and achieving a balance between environmental sustainability and international peace initiatives.

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